DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN GANZE DISTRICT, KILIFI COUNTY OF KENYA

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C50/PUC/2098/11

A thesis submitted in partial fulfilment of the requirements for the Degree of Master of Arts of Pwani University

© August, 2015
DECLARATION

Declaration by the Student

This thesis is my original work and has not been presented for a degree in any other University or any other award

Signature.........................................             Date...........................................

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Declaration by the Supervisors

We confirm that the work reported in this thesis was carried out by the candidate under our supervision. No part of this Thesis may be reproduced without the prior written permission of the author and/or Pwani University

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DEDICATION

This thesis is dedicated to the pillars of my life: God, my adoring parents who remain my source of inspiration, my siblings and fiancée.
ACKNOWLEDGEMENT

First, my heartfelt gratitude to my supervisors: Prof. Dr. Halimu Suleiman Shauri and Dr. Francis Gikonyo Wokabi. Thank you for your sage advice, guidance, encouragement and intellectual input from the initial to the final stage of this thesis development that enabled me to have an in-depth understanding of the subject under study. To my parents, thanks for the never ending love and unwavering support. My fiancée Yvonne Kuhnke, thanks for your unconditional love, encouragement and understanding even on days that you could not get my full attention. My colleague Bonventure Obeka, your constructive and insightful criticism, collaboration and willingness to assist when called upon have been tremendous assets. My colleagues and lecturers in the Department of Social Sciences, study respondents and medical staff from health facilities in Ganze District, thank you for making the study possible.
ABSTRACT

Maternal health care service utilization is an important health issue related to both maternal and child survival as it reduces maternal mortality and morbidity as well as improving the well being of mothers and their children before, during and after birth. Considering low utilization of maternal health care service especially in Sub-Saharan Africa, understanding what determines utilization becomes important. This study set out to examine determinants of maternal health care service utilization by women of reproductive ages (18-49 years) with a view to enhancing the achievement of Millennium Development Goal (MDG) number five (5). Four dependent variables: place of delivery, antenatal care, skilled attendance at birth and trimester women attended Antenatal Clinic (ANC) as well as six independent variables representing predisposing characteristics (mothers age at birth, marital status, religion, educational attainment, parity) and enabling factors (husbands educational attainment, income levels) were selected. Survey research design was used in data collection and the main data collection tool was an interview schedule. Multi-stage cluster sampling was used in sampling the health care facilities and convenient sampling was used to sample the respondents. Both descriptive and inferential statistics such as logistic regression analysis were applied to the analysis of the collected data. The key findings of the study show that religion, parity and maternal education were significant predictors of women’s place of delivery. Further, maternal age, marital status, and parity were found to be significantly associated with the number of ANC visits women make to the clinic. Marital status, religion and parity are all related to use of a skilled Birth Attendant at birth. Parity emerged to be the strongest predictor among all the other indicators of maternal health care service utilization considered in the study. In conclusion, the study was able to find out factors that affect utilization of maternal health care services in Ganze district thus achieving the study objective. Strategies to promote the utilization of Maternal Health Care Services should thus focus on the relevant predictors established in the models based on the binomial regression analyses. The findings of the study may help the Ministry of Health, policy makers and health related agencies and stakeholders to design appropriate and cost-effective intervention programmes targeting areas with most needs. This may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality while enhancing reproductive health and resource efficiency. Lastly, this study aims at stimulating further research in this area, thus bridging knowledge gaps and updating scientific knowledge on this important topic.
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List of Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

ATR – African Traditional Religion

ANC – Antenatal Care

CBS – Central Bureau of Statistics

ERC – Ethical Review Committee

FBO – Faith Based Organization

GDP – Gross Domestic Product

GoK- Government of Kenya

HBM - Health Belief Model

HIV – Human Immunodeficiency Virus

KDHS – Kenya Demographic and Health Survey

KHHEUS – Kenya Household Expenditure and Utilization Survey

KNBS – Kenya National Bureau of Statistics

KNHA- Kenya National Health Accounts

MDG’s – Millennium Development Goals

MHCS – Maternal Healthcare Services

MLR – Multivariate Logistic Regression
MoH – Ministry of Health

NACOSTI – National Commission for Science, Technology and Innovation

NCAPD- National Coordinating Agency for Population and Development

NGO – Non-Governmental Organization

OBA- Output Based Approach

PHC- Primary Health Care

PNC – Postnatal Care

POD – Place of Delivery

SBA – Skilled Birth Attendant

SDC – Social Demographic Characteristics

SMI – Safe Motherhood Initiative

SPSS – Statistical Package for Social Sciences

TBA – Traditional Birth Attendant

TI- Transparency International

UN – United Nations

UNFPA – United Nations Fund for Population Activities

UNICEF – United Nations International Children’s Emergency Fund
WB – World Bank

WHO – World Health Organization
1.1 Background of the Study

Three out of the eight Millennium Development Goals (MDG’s) relate to health. Goal number four is aimed at reducing child mortality rates, goal number six focuses on combating HIV/AIDS, malaria and other diseases and goal number five, which is the focus of this study, is aimed at improving maternal health by reducing maternal mortality by three quarters (75%) and achieving universal access to reproductive health between 1990 and 2015. This goal is monitored by two indices namely: maternal mortality ratio and proportion of births attended by skilled health personnel.

Globally, in the year 2008, there were an estimated 358,000 maternal deaths and of this, the developing world accounted for (355,000) or 99% (WHO, UNICEF, UNFPA, & The World Bank, 2010). These figures have financial implications for the health sector of affected countries. On the one hand, high income countries with high standards of living spend an average of 7.0% of Gross Domestic Product (GDP) on health and on the other hand, low income countries, with low standards of living, spend an average of only 4.2% on the health sector (Cieza & Holm, 2010). Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit, Dolea, & Braichet, 2010).

In the year 2000, 251,000 maternal deaths occurred in Africa and 40% of the deliveries were attended by a Skilled Birth Attendant (World Health Organization, 2005). Sub-
Saharan Africa accounted for slightly more than half (270,000) of the maternal deaths in 2005. An increase in maternal deaths over the years can be observed. Nearly three fifths (204,000) of the maternal deaths in 2008 occurred in the sub-Saharan Africa (WHO et al., 2010). Though there is a slight drop in maternal mortality rates from 2005-2008, the number is still high.

Kenya is one of the countries that suffered 65% of maternal deaths in 2008. It accounted for 7,900 (2.2%) of the global maternal deaths (WHO et al., 2010). According to the 2008-09 Kenya Demographic and Health Survey (KDHS) maternal mortality in Kenya remains high at 7.9% as only 44% of births are managed by health professionals and 43% are delivered in health facilities. These statistics clearly show that over half (56%) of deliveries are done by non-professionals and more than half (57%) of deliveries are done outside healthcare facilities. Between the periods 2003 – 2008/09, there was a rise in maternal mortality rates in Kenya from 0.6% to 0.8%, indicating an increase of 0.2% (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). This is not a good indication especially that MDG number five aims at improving maternal health care.

According to an official in the Ministry of Public Health, (Masha Joseph, 2011), quoted in the Standard Newspaper of Wednesday 11th May 2011, only 44% of deliveries in the Coastal Region are done in hospitals with many pregnant women relying on Traditional Birth Attendants (TBAs), while about 70% of 170,000 women still give birth at home. The Kilifi District Strategic Plan 2005-2010 points out that accessibility of health services was low and over half (57%) of the population lived over five kilometres to the nearest health facility (National Coordinating Agency for Population and Development, 2005). It is
against this background that a study of the determinants of maternal health care utilization in Ganze district in Kilifi County, Coastal Region of Kenya was mooted.

1.2 Statement of the Problem

The MDG’s are fresh in our minds and we have approached 2015. Millennium Development Goal number five, in particular, was aimed at reducing maternal mortality rate by 75.0% between 1990 and 2015 and to achieve universal access to reproductive health. The fact that the KDHS 2008-2009 reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities is a clear indication that there is underutilization of maternal health care professionals and facilities in the country, especially in the rural areas. What determines maternal health utilization therefore needs to be understood to improve this situation with a view of achieving MDG number five. In fact, it is very clear throughout the literature reviewed that there is a dearth of recent data on the determinants of maternal health care utilization. This is despite the fact that maternal healthcare services utilization is essential for the enhancement of maternal and child health. Accordingly, little was known about the current magnitude of use and factors influencing the use of maternal healthcare services, especially in Ganze district where the study was conducted. This study therefore examined the factors that determined the utilization of maternal health care service in Ganze district in Kilifi County, Coastal Region of Kenya.

1.3 Purpose of the Study

The purpose of the study was to examine factors that influence maternal health care service utilization by women of reproductive ages (18-49 years) with a view of enhancing the
achievement of MDG number five (5).

1.4 Specific Objectives

On the basis of the study’s purpose, the objective of the study was to:

1. Find out the influence of socio-economic and demographic factors on utilization of maternal health care services.
2. Establish the facility-specific factors that influence the utilization of maternal health care services in Ganze district.
3. Establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care service utilization in Ganze district.

1.5 Research Questions

1. What is the influence of socio-economic and demographic factors on utilization of maternal health care services?
2. Why are some healthcare facilities utilized more than others by women of reproductive ages (18-49 years) seeking maternal health care services?
3. What is the influence of the preferences and perceptions of women of reproductive ages (18-49) with regard to ANC services offered at the healthcare facilities in Ganze district on maternal health care utilization?

1.6 Significance of the Study

The results of this study could be beneficial as it was envisaged to add to the existing body
of scientific knowledge on the factors that influence maternal health care service utilization and the challenges that women face as they seek maternal health care services. This may act as a springboard for further research in this area and thus bridge knowledge gaps and update scientific knowledge on this important topic.

To the government, Ministry of Health as well as other health providers, findings of this research may help them work towards policy and practical improvements in provision of maternal health care services thus reducing the number of maternal deaths consequently contributing to the attainment of MDG number 5.

Third, this research may help the government and other key health care stakeholders avoid wastage of resources because they will be able to know the determinants of maternal health care service utilization. Accordingly, appropriate and cost-effective intervention programmes can be designed and targeted to the areas with most needs. Significantly, this may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality and enhancement of reproductive health with desirable consequences on the health status of women and the population.

1.7 Scope and Limitations of the Study

1.7.1 Scope of the Study

The study was carried out in Ganze District of Kilifi County in the Coastal Region of Kenya.
1.7.2 Limitations of the Study

This was a survey research and as such attempted to understand study variables at one point in time. Accordingly, the study was limited in explaining causality and trends over time than a longitudinal or control group design on the determinants of maternal health care services utilization.

Due to ethical and legal considerations, the study only focused on women aged (18-49 years). Thus, the study was limited in that the views of women below the age of 18 years and above 49 years were not included in the study and thus research results cannot be generalized outside of the sampled population of women aged (18-49) years old.

The study was limited in that the researcher had to employ the services of an interpreter because some of the study respondents did not understand English and so interviews were conducted in either Kiswahili or Kigiryama.

1.8 Definition of Key Concepts used in the Study

**Antenatal care:** Care given to a pregnant woman from the time of conception to the onset of labour

**Distance:** The location of the health care facility in relation to the patient’s place of residence

**Grandmultiparae:** A woman who has given birth to five or more children

**Maternal Morbidity:** Is defined as “chronic and persistent ill-health occurring as a consequence of complications of pregnancy and child birth” (Ogunjuyigbe & Liasu, n.d.)
Maternal Mortality or Maternal Death: Is “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes” (“WHO | Maternal mortality ratio (per 100 000 live births),” n.d.)

Multiparae: A woman who has given birth to two or more children

Nulliparae: A woman who has never given birth to a child

Parity: Birth order in a nuclear family

Postnatal care: Care provided following childbirth to both the mother and the infant

Primiparae: A woman who has given birth to only one child

Providers: Health staff at the selected Maternal and Child Health (MCH) facilities serving in ANC at the time of the study and those who were available for interview

Skilled Birth Attendant: Is “an accredited health professional- such as a midwife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborns)” (World Health Organization, 2004b).

Skilled Birth Attendance: Process by which a pregnant woman and her baby are provided with adequate care during pregnancy, labour, birth and postpartum and immediate newborn periods (Graham et al., 2001).
Trimester: “One of the three divisions of three months each during pregnancy, in which different phases of foetal development take place” (“Trimester definition - MedicineNet - Health and Medical Information Produced by Doctors,” n.d.)

Utilization of maternal health care services: Utilization of maternal health care services in this study was described in relation to the requirements by World Health Organization (1994; 2004) which only considers it medically satisfactory when:

- Women receive antenatal care during the first trimester of their pregnancy period
- Women undertake 4 or more antenatal visits before delivery of their children
- Women are attended to at delivery by trained medical personnel/practitioner
- Women deliver in a health facility

Waiting time: The duration of time (minutes) a mother has to wait before he/she is attended to by a medical professional
CHAPTER TWO: LITERATURE REVIEW

2.1 Utilization of Health Care Services

Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems, or achieving a positive body image (Cockerham, 2012). In this discourse, health care utilization refers to the use of health care services by people (Awoyemi, Obayelu, & Opaluwa, 2011). Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries (Mekonnen & Mekonnen, 2002). Thus, in order for an individual to utilize health services, they must have both physical access to a health facility and the health facility must also be able to provide the required services; the patient must also be able to pay for the health care services offered either through cash or by use of health insurance or any third party means (Shauri, 2010).

The 2005/2006 Kenya National Health Accounts (KNHA) report notes that the top two “key challenges to achieving better health status in Kenya” are “inequitable access to health services” and “shortage of qualified health workers, especially those with appropriate skills” (Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009). Access to care has most often been considered as an expression of the time or monetary costs associated with obtaining medical care, such as waiting time to get an appointment or to see a doctor or medical practitioners once in their offices, and distance one has to cover (Aday & Andersen, 1977).
Some researchers place emphasis on the idea that access as a concept is best considered in the context of whether the people actually in need of health care receive it or not (Taylor et al., 1975). People should try to distinguish between access and availability. The latter is the presence of health care resources in a given locality/area. Even though information on the number of physicians in an area may be available, we may still not know the accessibility of such health care providers in terms of the patients ability to pay the fees they are charged, the lack of transportation or traffic congestion typical of the place, the barriers resulting from ethnic discrimination, or office hours that cannot accommodate the patient’s own needs or schedules (Aday & Andersen, 1977).

Utilization of health services is a complex behavioural phenomenon, related to the availability, quality and cost of services, social structure, health beliefs and characteristics of the users (Chakraborty, Ataharasul, Chowdhury, Bari, & Akhter, 2003; Ebuehi et al., 2006). More critical for this study, women’s utilization of maternal health care facilities is an important health issue with regard to the well being and survival of both the mother and the child during pregnancy, child birth and postpartum period and has implications on the maternal and child mortality rates in human society (Gazali et al., 2012; WHO, 2012).

In February 1987, three international organizations namely: United Nations Fund for Population Activities (UNFPA), the World Bank (WB), and World Health Organization (WHO) sponsored a global campaign in Nairobi in form of a conference to reduce maternal mortality. As a consequence, the Safe Motherhood Initiative (SMI) was adopted to reduce the high rate of women dying during pregnancy and childbirth. The event was
aimed at raising awareness about the numbers of women dying each year from complications of pregnancy and childbirth (Starrs, 2006).

The SMI recommended that all countries provide three types of maternity care services which are vital for all expectant women namely prenatal care, delivery care, and postnatal care (United Nations, 2000a). Prenatal care services include encouraging a woman with a normal pregnancy to make at least four visits to a skilled health attendant during her pregnancy (with more visits by women with pregnancy complications), and promoting information about maternal nutrition and iron supplements to reduce anaemia, underweight and under-nutrition among pregnant women and new mothers. To provide delivery care during childbirth, all member countries were recommended to promote deliveries in health facilities and to promote the attendance of skilled health personnel including a doctor and/or person(s) with midwifery skills who can diagnose and manage obstetrical complications as well as normal delivery (Pandey et al., 2011; Cohen, 1987).

More significantly to note in this thesis is that, while motherhood is often a positive and fulfilling experience, for many women it is associated with suffering, ill-health and sometimes even death (WHO, 2012). It is thus imperative that ways to mitigate factors responsible for low utilization of maternal services be developed. However, the development of effective strategies to curb maternal deaths hinges on the identification of factors responsible for low utilization of such services underscoring the need for the present research. Furthermore, even though such studies have been carried out in Kenya, no such study has been conducted so far in Ganze district.
2.2 Status of Health Care Utilization in the World

Although utilization is an important indicator of health seeking behaviour, health status, cost and quality of services, it is not necessarily guaranteed by the availability of health care facilities (Wamai, 2009). A report carried out by the World Health Organization (2010) in 39 countries reveals that in more than half of the 27 out of the 39 countries, utilization of health care facilities was only at public facilities and was skewed towards outpatient services. More so, in the Dominican Republic, Brazil, Nepal and the Philippines between 50-60% of hospitalizations were in public health care facilities (Saskena, Xu, Elovainio, & Perrot, 2010).

Health conditions are different for urban and rural areas. Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit et al., 2010). Indeed, a study carried out in Ethiopia shows that the coverage of maternity care services is very low and that utilization of maternal health care services is lowest in rural areas (Mekonnen & Mekonnen, 2002).

According to the findings of a study carried out in rural Zimbabwe on socio-economic status and health care utilization, all forms of health care tended to be utilized by those of high or medium-high socio-economic status rated (65%) of the study subjects. This clearly indicates that the socio-economic status of an individual affects his/her health care utilization behaviour. The report further shows that seventy-one (71%) percent of respondents utilizing health services were employed by the government, private sector (72%), the church (71%), Community Based Organizations (78%) and others (64%).
Health services tended to be utilized more by employed respondents. Only traditional health services were equally utilized by unemployed respondents accounting for 50% of the users (Kevany et al., 2012).

In Kenya, there is uneven distribution of health care facilities across the country’s eight regions. The central region has about double the number of facilities per population as compared to Nyanza and Western regions (Wamai, 2009). Health care utilization varies greatly across all the eight regions of the country. More precisely, North Eastern records the lowest health care utilization rate, with 63.4% of all those who reported being ill never seeking treatment in the health care facilities, which leaves only 36.6% seeking treatment whereas Nairobi region, which is the capital city of Kenya, having the highest rate (90.6%) of utilization.

According to the 2003 Kenya Household Expenditure and Utilization Survey (KHHEUS), of all those people reporting illness, 77.2% sought health care service thus leaving 22.8% not seeking health care service. It also shows an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people which translates to an annual utilization rate of 1.92 visits per person per year (Republic of Kenya, 2004).

It is important to mention that the urban population has a higher likelihood of visiting a health care facility (81.5%) when ill as compared to their rural counterparts (75.9%) despite the fact that the average cost for outpatient utilization in urban areas is twice that of rural areas (Republic of Kenya, 2004). Despite this scenario, people in the rural areas still don’t seek health care services very often. This indicates that cost still remains a barrier to utilization of health care facilities and services as health care costs (44%) and the long
distance to the health facility (18%) were cited as the main barriers to health care utilization by those who reported being ill (Republic of Kenya, 2004).

Females reportedly make 1.2 times as many outpatient visits per capita (2.1 visits per year) as did their male counterparts (1.7). Government facilities are utilized more for outpatient services accounting for 51% of the visits, private and mission facilities account for 27% and 8% of the visits respectively, while traditional healers account for a negligible proportion of services (1%). This disparity might be as a result of the distance one has to travel and the cost of seeking health care in the various facilities available (Republic of Kenya, 2004).

Some health facilities at the rural level lack essential resources and the basic assets available are either insufficient or dilapidated. Furthermore, most rural facilities do not even have wards to admit critically sick patients. Due to poor health infrastructure, patients walk for long distances to reach the available health care facilities. Despite the high demand from the community for health care services, most rural health facilities are still lagging behind in the delivery of services (Transparency International, 2011).

The lack of equipment and other core supplies has negative impacts on the performance of health facilities. Lack of adequate health facilities and poor infrastructure forces people to walk for long distances to seek health care services; leading to some patients resorting to alternative means of treatment. This has the potential of leading to underutilization of available health care facilities (Transparency International, 2011).
According to the Kilifi District Strategic Plan 2005-2010, there were 73 health facilities distributed throughout the district. The plan asserts that accessibility of health services was low and over one half (57%) of the population lived over five kilometres to the nearest health facility. The doctor - patient ratio was 1:100,000 population which is a manifestation of staff shortages in the area (The National Coordinating Agency for Population and Development, 2005).

Ganze district, like most rural areas in Kenya, has poor health service coverage and delivery (Transparency International, 2011). Most trained medical attendants including birth attendants prefer working in urban areas as opposed to rural areas and thus health facilities in rural areas are under-staffed (Epuu, 2010). This study was able to shed some light on the status of the health care system in Ganze District.

2.3 Global Trends in the Utilization of Maternal Health Care Services

Maternal and child health are both indicators to a society’s level of development as well as to the performance of the health care delivery system (Central Bureau of Statistics (CBS)[Kenya], Ministry of Health (MOH)[Kenya], & ORC Macro, 2004). A study carried out in Peru on the effects of education on utilization of maternal health care services shows that there is a strong positive relationship between education and the use of maternal health care services (Elo, 1992).

A woman’s autonomy or level of independence in decision making is important in explaining utilization of maternal and child health care services. Urban residence, and
husband’s education have all been found to have a positive relationship to antenatal care utilization (Woldemicael, 2007; Dairo & Owoyokun, 2010).

A cross sectional study in India by (T. R. Jat, Ng, & San Sebastian, 2011) on the factors affecting the use of maternal health services in Madhya Pradesh state found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services. Women in urban areas tended to use maternal health care services more than those living in the rural areas. The levels of skilled attendance at delivery and postnatal care decreased steadily with increased birth order (T. R. Jat et al., 2011). It was also found out that an increase in the education of the mother enhances the use of the three indicators of the use of maternal health services namely prenatal care, delivery care, and postnatal care. Finally, child parity seemed to affect the use of skilled attendance at delivery and postnatal care.

Another study by Mondal (2009) carried out in Bangladesh found out that the level of education (both of the wife and husband) increased the likelihood of seeking help from a qualified medical professional. Women who reside in urban areas had a higher odd of seeking medical assistance than those in rural areas (ibid). Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious taboos. Women from families with a high socio-economic status are more likely to receive treatment from a doctor or nurse.

From the above studies, we can be able to deduce that socio-economic status as indicated by, level of education (both of the wife and husband), place of residence and religion increase the probability that women of reproductive ages will utilize maternal health care
services. Interestingly though, no study has focused on whether the attitude of health care providers towards the patients affects maternal health care utilization. Additionally, no study has focused on the attitude of the health care practitioners towards their work and utilization of maternal healthcare services by pregnant women. It is within the confines of this study therefore to find out whether the attitude of health care providers towards their work and patients determines utilization of maternal health care services.

2.4 Maternal Health Care Utilization in Africa

A study carried out in Ethiopia on the utilization of maternal health care services found out that there was low coverage of maternity service in the country. The place of residence, woman’s education, marital status, religion, parity and number of children under five years were found to have an important influence on utilization of maternal health services by women of reproductive ages. There was high level of utilization of maternal health services among urban women compared with their rural counterparts (Mekonnen & Mekonnen, 2002).

Additionally, married women were observed to be more likely to use antenatal care than their unmarried counterparts. Religion was also found to be an important predictor of antenatal care utilization. Among urban women, utilization of antenatal care is higher for those with two or more children than for those with one child. On the other hand, utilization of delivery care services is lower for those with two or more children than those with one child (Mekonnen & Mekonnen, 2002).
In another study carried out in Ethiopia on factors influencing the use of maternal health care services, it was found out that education of women determines use of antenatal care in that utilization increased with education level. Religion also affects use of antenatal care in that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs. Marital status and religion also had an impact in determining the use of antenatal care (Mekonnen & Mekonnen, 2003; Mekonnen & Mekonnen 2002).

A qualitative study carried out in rural Gambia on access to emergency obstetric care found out that structural factors in maternal health care provision discourage women from seeking care. For instance, where pre-natal care was provided on specific days in each community during week days, it hinders other people from attending. There may exist difficulties in transportation, such as poor condition of the road, lack of readily available transport, inadequate means of transportation, poor provider attitude towards patients, fear of punishment by health care providers based on previous experiences or just gossip can lead to delays in the decision making process of visiting a health facility by patients (Cham et al., 2005).

A study carried out on the utilization of antenatal care services in a Nigerian teaching hospital found out that over two fifths (47%) of the women started attending antenatal clinic only in the third trimester of the pregnancy period despite the fact that antenatal care services in the state hospital that the study was carried out was offered free of charge (Peltzer & Ajegbomogun, 2005).
In another study conducted in Nigeria, the use of maternal health services was significantly related to the level of maternal education, maternal age and marital status. Higher use was positively related to knowledge of where the Primary Health Care (PHC) service was located. Respondents with more than 4 children underutilized available maternal health services and utilization of maternal health services by respondents was significantly related to satisfaction with quality of services received (Ebuehi et al., 2006). Women’s and husband’s education and place of residence have strong positive associations with health care utilization (Woldemicael, 2007).

In Africa, all the reviewed studies have focused on determinants of maternal health care utilization such as maternal education, religion, parity, marital status and residence. However, limited literature none has focused on whether distance from health care facility has an effect on the utilization of maternal health care services. Few studies have also been carried out to find out the effects of waiting time at the reception by the patients before being attended to and the utilization of the health facility. Thus, this underscores the need for the present study in trying to find out the influence of how far one resides from a health facility and utilization of the health facility and the effect of how long a mother waits before being attended to on the utilization of maternal health care. The study thus sought to know how socio-economic and demographic as well as facility specific factors influence utilization of Maternal Health Care Services (MHCS).

2.5 Utilization of Maternal Health Care Services in Kenya

The 2003 Kenya Demographic and Health Survey indicated that almost 90% of Kenyan women received antenatal care from a medical professional with 18% being attended to by
a doctor, 70% by a nurse or midwife while 10% received no antenatal care at all (Central Bureau of Statistics (CBS) [Kenya] et al., 2004).

In a study carried out in Kenya by Fotso et al., (2009), it was found out that women’s overall autonomy is insignificant in health seeking behaviour. Further, women with at least secondary education were more likely to deliver in a health facility in general or in an appropriate health facility compared to those with no education. The likelihood of delivering at a health facility in general and in the well equipped facilities in particular significantly decreases as parity increases.

Another study carried out using data from the 2003 KDHS found out that young women mostly used skilled professional assistance during delivery. Rural women were less likely to deliver with the assistance of either a Traditional Birth Attendant (TBA) or skilled professional. Women from rich households were more likely to deliver with a TBA or skilled professional. Educated women were more likely to deliver with assistance of skilled professionals as opposed to non-educated. Women with more than 2 children were less likely to deliver with the assistance of TBA or skilled professionals compared to those with 1 child (Ochako et al., 2011).

According to a study carried out in Nyanza region of Kenya, it was found out that the higher the parity, the greater the chances of a mother delivering at home. Conversely, health facility deliveries were greatest among births to lower parity women. A person’s level of education affects how a person utilizes the health facility. Rural residence is associated with higher likelihood of home deliveries where 63% of births occur at home. However, those residing in urban areas had a higher chance of health institution delivery
with 78% births delivered in health care facilities. Lower economic status at home, medium and high economic status health institution, older mothers’ and young health institution also affects place of delivery with high chance of mothers delivering at home. In a nut shell, the study found out that the place of delivery is affected by parity, level of education, place or residence, economic status and age of the mother (Owino, n.d.).

From the reviewed literature, most studies globally, in Africa and Kenya have focused on the determinants of maternal health care utilization such as education, religion, parity and age but a limited number of studies have been carried out in Ganze district which is the study area. This therefore underscores the need for the present research which seeks to establish the determinants of maternal health care utilization in Ganze district in the Coastal Region of Kenya.

2.6 Summary of Research Literature on Maternal Health Care Utilization

In as much as most reviewed studies have focused on the determinants of maternal health care utilization and inform us of the effects of maternal education, religion, parity, marital status and place of residence on maternal health care service utilization, no such focus is evident in the literature on the rural district of Ganze. This underscores the need for the present research in trying to establish the factors associated with maternal health care utilization in Ganze.

Furthermore, all studies that have been reviewed in this work only concentrate on socio-demographic factors such as maternal education, religion, parity, marital status and place of residence on maternal health care service utilization but there is less focus on the effects of
the attitude of health care practitioners on the utilization of maternal health care services. Accordingly, the study attempted to find out the effects of the attitude of health care practitioners and utilization of maternal health care services. More so, limited attention was paid to whether the distance of a health care facility from a patient’s residence affects their utilization of maternal health care services. This study sought to fill this important gap in knowledge.

It is proper to note that limited focus was also given to the effect of waiting time before one was attended to by a medical practitioner in hospital and the utilization of maternal health care facility. The present study went a step further in trying to find out whether the amount of time one has to wait before being attended to by medical personnel has an impact on the utilization of maternal health care services.

At another level, some studies have dealt with challenges faced by expectant mothers as they seek maternal health care services but none enumerates the coping strategies these women use to respond to the challenges. For instance, a qualitative study carried out in rural Gambia found out that structural factors in maternal health care provision discourage women from seeking care (Cham et al., 2005). Despite these challenges that have been enumerated, we are not told what coping strategies these women use to address such challenges.

Finally, it is proper to also note that almost all the literature reviewed has focused on the socio-economic factors that affect maternal health care utilization overlooking facility specific factors, perceptions and preferences of women of child bearing ages that may also affect maternal health care utilization. The study sought to establish facility specific factors,
perceptions and preferences of women that affect maternal health care utilization with an aim of making recommendations to improve the state of maternal and child health in the study area.

2.7 Theoretical Framework

This study was understood and conducted within the framework of Symbolic Interactionism. Symbolic Interactionism is a micro level theoretical approach that focuses on social interactions in specific situations. It has roots in the thinking of Max Weber (1864-1920), a German Sociologist and George Herbert Mead who emphasized understanding a particular setting from the point of view of the people in it (Giddens & Sutton, 2009).

The core principles of social interaction theory include meaning, language and thought. Meaning arises in the process of interaction between people and are handled in and modified through an interpretive process used by the person in dealing with things he/she encounters. Language is the vehicle through which meanings that arise out of our thoughts are transported in social interactions.

This theory was helpful in trying to understand the meanings that people attach to certain symbols so that they seek maternal health care services. The interpretation that people derive from the symbols and maternal health care utilization enabled the researcher to come up with strategies to improve maternal health care utilization and thus reduce maternal and child mortality. In looking at the factors that influence maternal health care utilization, the
researcher adopted the Health Belief Model (HBM) embedded within the larger purview of Symbolic Interactionism perspective.

2.7.1 Symbolic Interactionism and Illness Behaviour

Illness is social and exploring the meanings that patients give to symptoms and illness becomes important. Patients are the first to recognise their illness and to decide to visit a medical practitioner, who then takes a medical history. Patients describe illness on what society teaches them and this affects the diagnosis (Laurence & Barbara G, 2007).

For this study, it was assumed that women of reproductive ages (18-49 years) must be able to draw meanings from the symptoms and attach meanings to those symptoms in order for them to be able to utilize the available maternal health care services. Borrowing from the symbolic interactionist perspective and because illness is social, the study tried to explain maternal health care utilization using the HBM.

2.7.2 The Health Belief Model

The model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions; these include susceptibility, seriousness, benefits and barriers to behaviour and cues to action (Glanz et al., 2008). The HBM suggests that preventive action taken by an individual to avoid a disease is due to the perception that they are susceptible and the occurrence of the disease would have some severe personal implications (Cockerham, 2012). Thus, women may only seek maternal health care services if they deem that the pregnancy they are carrying may have a likelihood of affecting them.
HBM makes an assumption that by taking a particular action, susceptibility (likelihood) would be reduced. However, the perception of the threat posed by disease is affected by modifying factors which are demographic, socio-psychological and structural variables that can influence both perception and the corresponding cues necessary to instigate action (Cockerham, 2012).

Action cues are required because while an individual may perceive that a given action will be effective in reducing the threat of disease, the action may not be taken if it is further defined as too expensive, too unpleasant or painful, too inconvenient, or perhaps too traumatic (Cockerham, 2012). The women may seek for health care because by so doing they feel that they have reduced the likelihood of them experiencing difficulties during the entire period of pregnancy.

The likelihood of action involves a weighing of the perceived benefits to action contrasted to the perceived barriers. Therefore it is believed that a stimulus in the form of an action cue is required to “trigger” the appropriate behaviour. Such a stimulus could either be internal (perception of bodily states) or external (interpersonal interaction, mass media communication, or personal knowledge of someone affected by the health problem) (Cockerham, 2012). Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.

The model assumes that if a person regards himself/herself susceptible to a condition, believes that the condition would have potentially serious consequences, believes that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believes the anticipated benefits of taking action
outweigh the barriers to (or costs of) action, one is likely to take action he or she believes will reduce their risks (Glanz et al., 2008).

Additionally, it is important to note that health seeking behaviour has been observed to be based upon the value of the perceived outcome (avoidance of personal vulnerability) and the expectation that preventive action would result in that outcome (Cockerham, 2012).

Finally, the theoretical framework informs this particular study on the basis of the five constructs that make up the HBM. Thus, women may only utilize maternal health care services if they feel that the pregnancy they are carrying may have a likelihood of affecting their wellbeing and that by so doing they feel that they will reduce the likelihood of them experiencing difficulties during the entire period of pregnancy. Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.
2.8 Conceptual Framework

A conceptual framework is a concise description of the phenomena under study accompanied by a graphic or visual depiction of the major variables of the study (Mugenda, 2008).

![Conceptual Framework Diagram]

*Figure 2.1: Conceptual Framework of the correlates of maternal Health Care utilization*
2.8.1 Behavioural Model of Health Services Utilization

The study utilized the behavioural model of health services utilization developed by Andersen and Newman (1973) to explain maternal health care utilization. It asserts that the utilization of health service is dependent on three sets of individual factors; predisposing factors, enabling resources and the illness levels of an individual (need for health service) (Andersen & Newman, 1973; Aday & Andersen, 1977; Andersen, 1995).

2.8.1.1 Predisposing factors

Predisposing factors reflect the fact that different people have a different likelihood/propensity to use health care services. They include demographic characteristics e.g. age and gender, the social structure which determines the social status of a person and his/her ability to cope with presenting problems in society. Social structure can be measured using indicators such as education, occupation, household size, number of previous pregnancies and health-related attitude. Health beliefs include attitudes, values and knowledge about the health and health services that might have an effect on the subsequent need and use of health services available (Andersen, 1995).

Looking at the study variables, the model helps in the analysis of the effects of the demographic variables which include; age, sex, marital status and parity on maternal health care utilization in the study area. This helps to understand why there are disparities in the utilization of maternal health care services. Socio-economic factors such as education level, income, occupation and family size help in knowing the social status of an individual and help in understanding how better the individual is equipped to deal with the health problem at hand. The cultural beliefs enable us to have a better understanding of the outlook towards
health and health services which might have an effect on the need and use for health care and health services among the study subjects.

2.8.1.2 Enabling Resources

Enabling resources deal with the means that make it necessary for individuals to utilize health care services even if they are predisposed to them e.g. income, access, and availability of health services. They may either be personal or community based and make health service resources available to individuals. Enabling conditions can be measured by indicators such as a person’s income, level of family insurance coverage or other source of third party payment for health care, whether or not the person has a regular source of health care, the nature of the regular source of care and the accessibility of the source of health care.

Community enabling characteristics include the amount of health facilities and personnel in a community. Thus, if resources are reasonably plentiful and can be used without queuing up they might be used more frequently. Analysing it from the economic viewpoint, one might expect people experiencing low prices for medical care to use more services. Other measures of community resources include region of the country and the rural urban nature of the community in which the family lives. These variables might be linked to utilization because of local norms concerning how medicine should be practiced or overriding community values which influence the behaviour of the individual living in the community (Andersen & Newman, 1973).
Focusing on service provider factors such as the availability of drugs, attitude of service providers, waiting time, availability of equipments and bed space all have an effect on how health care facilities will be used. All these service provider factors enable people utilize available health care facilities because if the services provided measure up to what the clients expect then they will utilize them. People’s occupation and income are also enabling factors for utilization of health care services because with a good income one is able to pay for the expenses incurred while seeking for care and one can also be able to buy health insurance policies which cover them whenever they fall ill and thus they can be able to seek for health care services. The quality of service offered and the effectiveness of the service provider also determine whether a patient will or will not utilize health care services. Where the services are effective patients will tend to utilize such services more.

2.8.1.3 Need

According to Andersen and Newman, the need factor is the most immediate cause of health service use (Andersen & Newman, 1973). An individual must perceive illness or the probability of it occurring for him/her to seek for health care. The levels of illness represent the most immediate cause for health service utilization. Perceived severity or number of episodes of diseases have a positive association with health care utilization. The model also makes the assumption of a clinical evaluation system because individuals seek care from formal medical systems.

Indicators of perceived illness includes the days that the individual is unable to function normally because the disease interferes with how he/she conducts his daily activities like going to work, going to school, playing with their peers or even taking the children to
school. Other measures of perceived illness include symptoms the individual experiences in a given time period and a self report of the general state of health, e.g. excellent, good, fair or poor. Evaluated illness measures are attempts to get at the actual illness problem that the individual is experiencing and the clinically judged severity of that illness. Under ideal circumstances included here would be a physical examination of the individual by a medical practitioner (R Andersen & Newman, 1973).

The need for utilization of health care services will be examined on the basis of how the disease interferes with the patients daily activities.
CHAPTER THREE: METHODOLOGY

3.1 Introduction
This chapter provides details of the research methodology used during the study. It offers information on the study site, research design, sampling procedures, the target population, the data collection methods and tools, and finally analysis of data. Consideration is also given to logistical as well as ethical issues.

3.2 Site of the Study
This study was conducted in Ganze district which is one of the six districts in the larger Kilifi County. Ganze district lies on Latitude 3°32'0" North and Longitude 39°41'0" East. It borders Kaloleni district to the South and Bahari district to the East. Ganze district has three divisions namely Ganze, Bamba and Vitengeni; it has a total of 16 locations and 48 sub-locations.

According to the 2009 census report, Ganze district had an estimated total population of 117,074 people with the males accounting for 53,403 (45.6%) and females accounting for 63,671 (54.4%) of the total population. The district covers a total area of 2,779 Km². Ganze district is a semi arid area where horticultural crops are produced using drip irrigation system while food crops and livestock feeds are produced using water conservation structures (Ketiem et al., 2007).

3.3 Research Design
This is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The
researcher employed a cross-sectional survey research design in the collection of data for the proposed study because it can be used to collect data from many people at relatively low cost and relatively quickly. Survey research design is always used to collect information from the field at one point in time. A survey design entails data collection on more than one case and at a single point in time in order to collect both quantitative and qualitative information in connection with two or more variables which are often examined to detect patterns of association (Alan Bryman, 2012).

3.4 Target Population

The study focused on women of reproductive ages (18-49 years) in Ganze district which is made up of three divisions namely Ganze, Bamba and Vitengeni.

3.5 Study Population

The study population consisted of women (18-49 years) who had come for antenatal care and those bringing their babies born at last delivery to the primary health care centres for immunization and other maternal and child health related services.

3.6 Sample Size Determination and Sampling of Study Subjects

3.6.1 Sample Size Determination

According to Bailey (1982), 30 elements are considered by many as the minimum size of a sample. Other researchers opt for a minimum sample of 100 units while others opt for 200 (Chadwick et al., 1984). Thirty (30) respondents were picked from each of the six health care facilities providing maternal health care services in the study area.
3.6.2 Sampling Procedure

This study used triangulation of various sampling techniques with a view of ensuring a representative sample of study subjects was selected and studied. To ensure sample representation and to avoid biasness within the framework of triangulation, multi-stage sampling strategy was adopted.

In the first stage, purposive sampling technique was used to select Ganze district among the six districts that constitute Kilifi County. Ganze was selected because it is a rural area and only one sub-district hospital in the whole district, namely Bamba sub-district hospital. The nearest referral hospitals are in Kilifi and Malindi districts and women with complications have to be referred to either of the two facilities.

In stage two, the researcher considered to stratify Ganze district into three divisions namely Ganze, Bamba and Vitengeni. This was to ensure that there is sample representation from the whole district.

In the third stage, a list of all the health facilities that offer maternal health care services in the district was drawn. Two health care facilities that provide maternal health care services were selected using simple random sampling technique from each of the divisions making a total of six health care facilities.

Lastly, study subjects were selected using convenient sampling. The interviewer was at the health care facility and interviewed 30 subjects from each health care facility giving a total sample size of 180. There was oversampling of study respondents by 9 subjects giving a total sample size of 189.
3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion Criteria

- Subjects included in the study only comprised of women of reproductive ages (18-49 years).

- Only those women who: (i) brought their babies born at last delivery and (ii) those coming for delivery to the primary health care centres for ante natal care services and (iii) those coming for immunization services were eligible for the study.

- Only those respondents who gave an informed consent of participating in the study were interviewed after they had signed the consent form.

3.7.2 Exclusion Criteria

- Women seeking other health services other than maternal health care services from the primary health care centre were not interviewed.

- Women under the age of 18 years were not interviewed because of legal and ethical issues.

- Those women who did not consent to voluntarily participate in the study were not interviewed.

3.8 Data Collection Procedures and Tools

The study employed the use of the interview schedule as the primary tool of data collection because literacy levels in Ganze district were relatively low. Interviews were carried out on
a face to face basis with the respondents who did not know how to read and write and the responses generated from the interviewees were accurately recorded.

3.9 Data Analysis

The collected data from the field was edited, coded and classified into response categories; this was done with the help of the Statistical Package for Social Sciences (SPSS, version 20.0). Descriptive statistics were used to display the Socio-Demographic characteristics of study respondents and utilization of maternal health care services in Ganze District. Frequency tables were used to present the Socio-Demographic distribution of study respondents and pie charts and bar graphs were applied to aid in the visual appreciation of the Socio-Demographic characteristics.

The chi-square test was used to examine whether or not there exists a relationship between the categorical variables; and Binomial Logistic Regression was used to carry out inferential analysis on the determinants of maternal health care utilization due to their binary nature. Logistic regression was used to examine the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). In order to identify the factors that predict utilization of maternal health care services, Multivariate Logistic Regression (MLR) was therefore applied. All the independent variables that were identified as having an association at the bivariate level were included in the model and the significance level for all the statistical analysis was set at 95% ($P \leq 0.05$) confidence level.
3.10 Ethical Considerations

Ethical clearance for the study was applied to and granted by the Ethical Review Committee (ERC), an agency of the National Commission for Science, Technology and Innovation (NACOSTI). Further, research clearance was also obtained from the Deputy County Commissioner Ganze Sub-County and the Kilifi County Research Coordination Committee to visit health care facilities in Ganze and conduct the study. During the survey, the researcher explained the purpose of the study to the respondents. This was done to ensure that the respondents gave an informed consent for taking part in the study. Furthermore, this ensured cooperation from the respondents and it helped to avoid any suspicion on the part of the study subjects.

The researcher insisted on and adhered to voluntary participation of respondents in giving information relevant for the study to avoid any coercion in the data collection process. The researcher maintained confidentiality by ensuring that respondents’ information was used only for the purpose of the study and no names of respondents were displayed and that interview schedules were to be kept securely under lock and key.
CHAPTER FOUR: STUDY RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides results of data analysis from the 189 interviewed respondents in Ganze District guided by the research objectives as elucidated in Chapter One. The study over sampled by nine (9) respondents. From the study it is evident that more women were sampled from Bamba division (36.0%) than the other divisions in the district.

This analysis and discussion focuses on the following themes: socio-economic and demographic dimensions of the local community, facility specific factors and women’s preferences and perceptions of ANC services offered at the health care facilities in Ganze district with regard to their use of maternal health care services. The findings are presented in tabular format and figures that clearly show the variations in responses among study variables.

4.2 Socio-Demographic Dimension of Respondents

This section focuses on the different or diverse characteristics with a bearing on the utilization of maternal health services. For the purpose of this research, our key interest was to conduct an assessment of the following parameters towards utilization of maternal health care services; age of respondents, education levels, education levels of their spouses, marital status, income levels, parity and religion. These parameters were investigated and results are presented next.
4.2.1 Age of Respondents

Age of respondents is critical as a variable in this study as it sheds some light on not only the maturity of the study subjects but also ensuring that the selection of study participants remained ethical. Further, age was included because of the assumption that the older the respondents the more mature and experienced on maternal issues and decision making. Indeed, differential age among expectant mothers cannot be gainsaid when it comes to making important maternal decisions that may have value in enhancing maternal and child health. The distribution of respondents by age is aptly presented in Table 4.1.

Table 4.1: Distribution of Respondents by Age

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>70</td>
<td>37.0</td>
</tr>
<tr>
<td>23-27</td>
<td>55</td>
<td>29.1</td>
</tr>
<tr>
<td>28-32</td>
<td>42</td>
<td>22.2</td>
</tr>
<tr>
<td>33-37</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>38-42</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>48-52</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Findings in Table 4.1 indicate that out of the sampled (189), respondents over one third (37%) were between ages 18-22 years old. This clearly indicates that most women start giving birth at an early age. Of the sample, over one quarter (29%) were between the ages of 23-27 years and only 5% of the respondents were aged 38 years and above.

Early marriages and giving birth at early age exposes the women to high chances of not gaining higher education thus leading to over reliance on their spouses for all their needs consequently leading to financial dependence. Dependancy has implications for maternal
health care utilization probably because women will always have to ask for money whenever they want to visit the health facility during their clinic appointments. Subsequently, it may also lead to women not attending maternal health care clinic as expected especially if the clinics are in far off places because of lack of finances to pay for their bus fare. Consequently, this may result to low or poor maternal health care service utilization. Additionally, young single women may not attend maternal health care clinic because they may be trying to hide the pregnancy from their parents and relatives.

The low percentage (5%) of women aged 28 years and above attending antenatal clinic might probably be a result of them having gone through subsequent births and thus don’t find it necessary because they feel they have had more successful birth experiences without any complications. This might also be attributed to them having stopped giving birth. This finding corroborates those of Jat et al., (2011) who found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services compared to their older counterparts.

4.2.2 Marital Status

The Marital status of a person in this study was conceived to mean the civil state of an individual in relation to marriage laws of the country. This variable was deemed important in this study because it helps in determining how maternal and child health decisions are made in a largely patriarchal African society where it is assumed that all decisions in the homestead are to be made solely by male members of the family because they are the heads of their families. The distribution of respondents by their marital status is presented in Table 4.2.
Table 4.2: Percentage distribution by respondents marital status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>Married</td>
<td>170</td>
<td>89.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Results in Table 4.2 depict that majority (90%) of the sampled respondents were married, only 7% were single, while 2% and 1% were widowed and separated respectively. Field observations showed that most of the respondents who were single were between ages 18-22 years old and either lived with their parents or relatives. The high (90%) number of respondents in marital union was expected because the study focused on women in their reproductive ages, many of whom were expected to be married due to societal expectations. Indeed, this finding corroborates those of Ebuehi et al (2006) and Mekonnen & Mekonnen (2002, 2003) who stated that marital status is related to utilization of maternal health services because married women were more likely to use antenatal care than their unmarried counterparts.

4.2.3 Religious Affiliation

Religion is herein conceived as a complete and acceptable system of set beliefs and practices that members of society adhere to. It is an institution that exercises social control among its members. Accordingly, affiliation to religious institution is one of the primary activities in society. Of importance in this study, is that religious affiliation may influence decisions on adoption of contraception, marriage, maternal and child health issues among...
respondents. The distribution of respondents according to their religious affiliation is presented in Figure 4.1.

![Religious Affiliation](image)

**Figure 4.1: Distribution of respondents by Religious affiliation**

Figure 4.1 reveals that a half (50%) of the respondents were Christians, slightly over one tenth (12%) were Muslims, 1% subscribed to African Traditional Religions and slightly over one thirds (37%) reported that they were Atheists. This indicates that Ganze district is majorly a Christian community. Interestingly, 37% of the respondents don’t belong to any religion. This may be explained by the remote nature of the area which is compounded by lack of infrastructure and high levels of poverty. The poor state of infrastructure and poverty have probably delinked the community from accessing or being accessed by mainstream religious evangelists.

The higher (50%) number of respondents being Christians is a mirror of Kenya, which is predominantly Christian owing to aggressive penetration of Christian evangelists and size of the Christian faith which puts it at an advantage with regard to resources and numbers over other faiths in the country. The strength in resources and numbers might have enabled
Christian denominations to penetrate this remote area more than other faiths which had limited resources and small numbers of adherants. This finding may have an influence on maternal health care utilization in the study area in line with observations by (Mekonnen & Mekonnen, 2002, 2003; Mondal, 2009) have linked religion to the fact that it affects utilization of antenatal care. They demonstrated that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs and that Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious believes.

4.2.4 Education Level of Respondents

Education is one of the powerful drivers of social change in society in that those with higher levels of education seem to adopt new ideas and innovations faster than their counterparts with low levels of education. Thus, the education level of respondents is a critical variable in this study as it is indicative of a person’s level of understanding, access and uptake of information related to maternal and child health issues. Findings of the study on the level of education of respondents are presented in Table 4.3.

Table 4.3: Percentage Distribution by respondents level of education

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non formal education</td>
<td>85</td>
<td>45.0</td>
</tr>
<tr>
<td>Some primary education</td>
<td>57</td>
<td>30.2</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>35</td>
<td>18.5</td>
</tr>
<tr>
<td>Some secondary education</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Secondary school completed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results in Table 4.3 indicate that out of the sampled (189) respondents, over two fifths (45.0%) had never gone to school, over one quarter (30.2%) had some primary education, with slightly less than a fifth (18.5%) reporting to have completed primary level of education. Those who reported to have either some secondary, completed secondary and others were only less than one tenth (6.3%).

From Table 4.3, it is apparent that the majority (93.7%) of the interviewed women of Ganze district were lowly educated. This finding may have an implication on the level of uptake of information on maternal and child health, adoption of maternal health care services and family planning. The levels of low education coupled with the culture and traditions of the community may compound the uptake of maternal health care services in an area. Further, the low levels of education in the area may have serious implications on other socio-economic opportunities such as securing lucrative employment and access to knowledge, especially on maternal health care services.

In fact, it has been shown that women of higher levels of education have a higher likelihood of fulfilling the requirements of the description of use of maternal health services as described by the WHO (1994; 2004). Such women have more capability to uptake new information on maternal health care practices than those with a low education background. Indeed, Elo (1992) reported that there is a strong positive relationship between education and the use of maternal health care services.
4.2.5 Education Level of Respondent’s Spouse

Owing to the aforementioned importance of the level of respondent education on the uptake of maternal health care services, it was prudent to investigate the combined effect of education on maternal health care utilization by including spousal education level in the matrix. More precisely, the education level of the respondent’s spouse was envisioned to be an important variable in this study because it may act as an enabling factor in the utilization of information concerning maternal and child health practices, access and uptake of such services. Findings on the education level of the respondent’s spouse are presented in Figure 4.2.

![Level of Education of Spouse](Figure 4.2: Distribution of respondents' spouse by level of education)

Figure 4.2 depicts that slightly over one fifth (20.5%) of the sampled respondents’ spouse had never gone to school, over half (56.5%) had either attained some form of or completed primary education, while over one quarter (28.8%) had either some form of or completed secondary school level of education and above. The level of education of the respondent’s
spouses indicates that there are educational differentials between male and female members of society in Ganze district. Level of education among the males is higher than that among the females. This finding is not a surprise to this study as it is a mirror of the situation in the country owing to the patriarchal nature of the society where boys have higher access to schooling opportunities than their female counterparts.

However, significant to mention is that spousal educational level may facilitate the utilization of maternal health care services because it enhances the capacity to access information that can be shared with the marital partner. Such sharing of useful information and knowledge, especially on maternal health may make the spouses see the importance of visiting maternal health care clinics for their ANC. Accordingly, such visits have the potential of bettering their health status and that of their unborn children. This finding is in tandem with those of Woldemicael (2007) and Dairo & Owoyokun (2010) when they reported that high maternal and husband’s education have a positive relationship to antenatal care utilization.

4.2.6 Respondents Source of Income

Respondents source of income in this study was conceived to mean the main livelihood strategy that respondents eke out a living by receiving money on a regular basis for work done at the end of every month. This variable was considered important as it helps to highlight the ability of respondents to pay for the cost of health care services offered. Findings on respondents’ source of income are presented in Table 4.4.
Table 4.4: Distribution of respondents by main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>Casual employee</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>107</td>
<td>59.4</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 9*

Table 4.4 depicts that almost three fifths (59.4%) of the respondents had no source of income clearly alluding to the fact that most of these women were financially dependent on their spouses. The high (59.4%) number of women having no source of income may probably be explained by the fact that women, as shown in Table 4.3, have very low levels of formal education. This means that their access to formal employment is low.

Indeed, the absence of prerequisites (education and skill training) to formal labour pushes women in Ganze out of formal means of livelihood where they can earn a regular income and attain financial independence that may enhance their access to maternal care. The foregoing may be explained by the patriarchal nature of the African society which favors boys over girls in education. In fact, women are seen as homemakers and as such have to stay at home and take care of their husbands and children whereas the husbands are expected to provide for the family.
4.2.7 Source of Income of Spouse

Respondents’ spouse’s source of income was considered as an important variable in this study as it acts as an enabling factor to utilization of maternal health care services. This is because the earned income can be used to cater for the necessary financial obligations that might be accrued in the process of seeking maternal health care services. Results on the respondents’ spouse’s source of income are presented in Table 4.5.

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>04</td>
<td>2.4</td>
</tr>
<tr>
<td>Government employee</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>18</td>
<td>11.0</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Casual employee</td>
<td>62</td>
<td>37.8</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>06</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>52</td>
<td>31.7</td>
</tr>
<tr>
<td>Not aware</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 25*

Table 4.5 presents findings of respondents’ spouses source of income. Of the total respondents sampled (189), over one third (37.8%) of the respondents’ spouses were engaged in casual employment, meaning they do not earn a regular income. More than one quarter (31.7%) observed that their spouses have other sources of income other than the ones elucidated in the interview schedule. Simple observations during field work showed that most men in the area are engaged in charcoal burning. The high (37.8%) number of spouses being in casual employment means that there are times that they are out of a job and thus might not be able to always provide financially incase the wife wants to make an
ANC visit. This situation is compounded by observations made during field work that most women interviewees lived far away from the available maternal health care facilities. Accordingly, most of them reported walking as their main means of reaching the nearest health care facility. This finding confirms that of Simkhada et al., (2008) who posits that women’s employment affects antenatal care uptake.

4.2.8 Parity

Parity in this study was conceptualized to mean the birth order in a nuclear family. Parity was considered an important variable in this study because it aids in explaining the differentials in utilization rates of maternal health care services by the number of children one has. Findings of the study on parity are aptly presented in Figure 4.3.

![Parity](image)

**Figure 4. 3: Distribution of respondents by parity**

Figure 4.3 indicates that slightly more than two fifths (43%) of the respondents were multiparous, more than one fifth (23%) were grandmultiparous, more than one tenth (15%) were primiparous and slightly less than one fifth (19%) were nulliparous families.
Parity has an important influence on utilization of maternal health services by women of reproductive ages (Mekonnen & Mekonnen, 2002). The relationship between parity and utilization of maternal health care services in Ganze will be tested using Chi-square and regression analysis in the later sections of this thesis.

4.2.9 Decision to Seek Maternal Health Care

The variable on who makes the decision to seek maternal health care was conceived to be important for this study as it sheds some light on the decision making process between male and females in society. The level of autonomy in decision making among the women and its effects on utilization of certain services is also critical in the analysis of maternal health care services utilization. However, Given the patriarchal nature of Kenyan communities where men are considered the heads of the households and thus responsible for decision making and the fact that health care in the household is a role of the female gender, it was critical to include the variable to see the decision maker on matters of uptake of maternal health care services in Ganze.

Further, maternal health care does not only fall within the purview of gender roles where the women are expected to perform but it actually affects women only making its decision to uptake or not very critical for women despite the patriarchal nature of society. Data on who makes decision with regard to uptake of maternal health care services in Ganze will also help in understanding whether the autonomy of women in decision making affects their utilization of such services. Results of who makes decision to seek maternal health care services are presented in Figure 4.4.
**Figure 4.4: Distribution of respondents by who makes decision to attend ANC clinic**

Figure 4.4 depicts that slightly more than three fifths (61%) of the respondents, were found to make joint decisions on MCH, while only one quarter (25%) of women were observed make the decisions on their own. Less than one tenth (9%) of MCH decisions were observed to be made by the respondents spouse and (5%) of the times decisions are made by other people, either parents or relatives living with the respondent.

On one hand, the higher (61%) percentage citing joint decision making is a clear testimony of the growing gender empowerment and dynamic nature of society where women are gaining, albeit gradual, their social space as key players in decision making with regard to matters touching on their lives. This seems to happen regardless of the strong patriarchal nature of the Kenyan society. On the other hand, the one quarter (25%) who said they make the decision themselves was expected in that health care and indeed, maternal health care decision making and uptake of its services are a preserve of women owing to the genderized roles in society, where health is classified as a domestic role to be undertaken by women. In fact, women’s autonomy in decision making has been reported by
Woldemicael (2007) as an important factor in explaining utilization of maternal and child health care services.

**4.2.10 Hospital Deliveries**

The number of hospital deliveries was considered to be a critical aspect in this study since it gives further insight into the utilization rates of institutional delivery services among the rural women of Ganze district. Findings with regard to this variable are presented in Figure 4.5.

![Hospital Deliveries](image)

*Figure 4. 5: Distribution of respondents by hospital deliveries*

Study findings presented in Figure 4.5 clearly indicate that of all (189) the respondents interviewed, only over two fifths (44%) had ever had hospital deliveries, while over half (56%) had never had any hospital deliveries. This finding corroborates those of the KDHS 2008-2009 which reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). Interestingly, this is happening regardless of the
understanding that increasing the proportions of delivery taking place in health facilities is important in reducing health risks to both the mother and her unborn child and consequently preventing both maternal and child mortality.

However, Ganze district being a rural area, 44% of the interviewed mothers having ever delivered in health facilities is quite high and somehow slightly contradicts the KDHS 2008-09 which indicate that only 35.4% of deliveries take place in health facilities in rural areas (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). The reason for the difference could be attributable to differences in the characteristics of the samples used in the two studies. Further, whereas the KDHS 2008-09 was a country wide study encompassing women from both urban and rural areas, this study focused only on Ganze which is a rural and poor district in Kilifi County.

4.2.11 Place of Delivery of Child at First Birth

The place of delivery of the first born child was considered an important variable in this study as it highlights the differentials in place of delivery due to the fear of child birth associated with prior birth experience of women in their second parity. This variable was included in the study because experiences of first birth may have a bearing on uptake or non-uptake of maternal health care services. Results of the place of delivery of child at first birth are presented in Table 4.6.
Table 4.6: Distribution of respondents by place of delivery of child born at first birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>53</td>
<td>34.9</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>81</td>
<td>53.3</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>02</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 37

Findings in Table 4.6 show that over half (53.3%) of the respondents had their first births at home (alone or with the help of a relative), while slightly more than one third (34.9%) had their first delivery in a health care facility with the help of a trained health professional. The over half (53.3%) of women of reproductive ages giving birth at home (alone or with the help of a relative) may probably be due to structural factors such as long distance to the hospital, poor road network and lack of transportation. This finding is consistent with that of Ochako et al (2011) and (Owino, n.d.) who reported that delivery with the aid of a TBA or skilled professional is less likely to happen among rural women. Accordingly, rural residence is largely associated with higher likelihood of home deliveries. The remote nature and poor infrastructural development in Ganze may aptly explain these disparities reported in the study.

4.2.12 Place of Delivery of Latest Child

Place of delivery of latest child was envisioned as an important variable in this study as it highlights the differentials in place of delivery between the first born child and subsequent deliveries. The assumption is that if the first child was born in a health care facility and the
experience was satisfactory to the mother, there are high chances that subsequent births would take place in health care facilities and vice versa. Results of the study with regard to this variable are presented in Table 4.7.

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>65</td>
<td>42.5</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>70</td>
<td>45.8</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>07</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 36

Findings of the study in Table 4.7 depict that prior to the study, over two fifths (45.8%) of the women had delivered their latest child at home or with the help of a relative, while another over two fifths (42.5%) had been observed to have delivered in a hospital with the help of a trained health professional. In comparison with place of delivery of first birth as captured in Table 4.6, over half (53.3%) had their first births at home alone or with the help of a relative while slightly more than one third (34.9%) had their first delivery in a hospital with the help of a trained health professional.

The two sets of findings, Table 4.6 and Table 4.7, show interesting trends that, on one hand, there is a decline (from 53.3% to 45.8%) of women giving birth at home or with the help of a relative and, on the other hand, there is a subsequent increase (from 34.9% to 42.5%) of women who had their subsequent deliveries in a health care facility compared to their first birth. These findings are not a surprise to this study in that they show the gains
that are being made in enhancing deliveries in health care facilities and in the hands of professionals as envisioned by government policy and the MDGs, especially goal number five (5). In fact, the findings are inconsistent with those of Fotso et al (2009) and Mekonnen & Mekonnen (2002) who reported that health facility delivery decreases as parity increases. More specifically, they reported that those with two or more children have lower utilization of health care delivery care services, a fact refuted by the findings of this study.

4.2.13 Trimester Women Visited Health Facility During First Pregnancy

The concept trimester is used in this study to refer to divisions of three months during pregnancy that an expectant mother had started ANC visits. It is expected that women will start visiting ANC services immediately they realise that they are expectant. The variable trimester in first pregnancy signify which month the interviewed women started ANC visits during their first pregnancy. This variable was considered important in this study as it sheds some light on how well women of child bearing ages utilize maternal health care services. The assumption being that they will start uptaking ANC services on the first month that they realise they are expectant. Findings of the study on trimester in first pregnancy are presented in Figure 4.6.
Figure 4.6 shows the distribution of respondents by trimester one started ANC visits during first pregnancy. It is shown in Figure 4.7 that more than three fifths (65%) of the respondents had their first visit during the second trimester, one fifth (20%) had their first visit during the first trimester, less than one tenth (9%) had their first visit during the third trimester and only 6% never went for ANC visits during their first pregnancy. Findings are consistent with those of a study carried out in Ethiopia (Afework et al., 2014) which found out that majority (68.3%) of the women were observed to have started attending ANC during the second trimester.

This finding can further be explained by field observations where most women attributed having not had their first ANC visit due to the fact that they did not and still do not know when exactly they are supposed to make their first visit once they discover that they are expectant. The lack of knowledge on when to begin their ANC visits can probably be as a result of low levels of education among the women as captured in earlier findings of the study where only less than one fifth (6.3%) reported to have secondary education and
above. Lack of education denies these women opportunities to access information, including on health care and hence this impacts on uptake of health care services including maternal health care services.

4.2.14 Trimester Women Visited Health Facility During Latest Pregnancy

Trimester in this study was conceived, inter alia, to mean divisions of three months during pregnancy in which the respondents started using ANC services in their current pregnancy. This variable was considered important in this study first, because it sheds some light on how well women of child bearing ages utilize maternal health care services by focusing on the first month that they seek ANC services for their children at last birth. Second, it could provide comparative data with regard to which trimester, first or second, birth parity is associated with and third, whether there are dynamics in the process. Findings of the study on the trends for this variable are captured in Figure 4.7.

![Figure 4.7: Distribution of respondents by trimester when one started ANC visits during latest pregnancy](image-url)
Figure 4.7 depicts that slightly less than one quarter (24%) had their first ANC visit for current pregnancy during the first trimester, more than three fifths (67%) had their first visit during the second trimester and less than one tenth (9%) had their first visit during the third trimester. The low (24%) percentage of women having their first visit during the first trimester might probably be attributed to lack of maternal health care education or structural factors such as long distances to the health facility and maternal health care services being offered at the health facility on certain days of the week only hence inconviniencing users.

Comparatively, women seeking ANC services during their first pregnancy, Figure 4.7 and women seeking ANC services during their latest pregnancy, Figure 4.8 show over three fifths 65% and 67% respectively appearing in the second trimester. Only a slight increase of 2% of women seeking ANC services in the second trimester of their current pregnancy can be observed. This can probably be attributed to the low levels of education and high poverty rates in the study area as adduced and implied in earlier findings of the study respectively. Low levels of education and high poverty rates makes it difficult for women to either realise they are pregnant in the first trimester because they are ignorant on ANC matters and may not be in a position to access or afford pregnancy testing kits respectively.

4.2.15 Distance to Health Care Facility

Distance to the health facility was considered as an important variable in this study as it provided an insight into the structural barriers that may exist in society in relation to utilization of maternal health care services. Considering the remote location and poverty rate (over 68%) in the county, especially in the study area, the inclusion of the variable was
both timely and significant for the study. Results of the study on this variable are presented in Figure 4.8.

![Distance to health facility a concern](image)

*Figure 4. 8: Distribution of respondents on their views whether distance to health facility is a concern*

Findings in Figure 4.8 indicate that more than half (56.4%) of the studied women said that the distance to the health facility was a concern. Field observations show that they had to spend a lot of time on the way to and from hospital and this affected how they utilized maternal health care services. Thus, many stated that they only went to the hospital when they deemed it necessary. This study finding supports that of Cham et al (2005) who posits that delays in decision making process of visiting a health facility can be caused by structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport and inadequate means of transportation.

Figure 4.8 also shows that more than two fifths (43.6%) of the respondents observed that the distance to and from the health facility was not a hindrance to their utilization of maternal health care services. Findings from informal interviews with these women, health
professionals and community members reveal that most of these women were used to walking long distances. Indeed, they were so used to the long distances that whenever we asked some community members on our way to the health care facilities they would retort, “nihaha kare” (literary translated to mean it is just here). The “nihaha kare” could turn out to be kilometre(s) of walking as observed during field work. This can be interpreted to mean that they are used to the long distances such that their sense of distance or how far a place is may be blurred by their experiences and cultural perceptions of distance.

4.2.16 Means of Transport to Nearest Facility

Means of transport to the nearest health facility was considered an important variable of this study as it presented to us one of the challenges that the pregnant mothers may encounter as they seek maternal health care services in their respective health care facilities. The respondents were asked to report which was the most frequently used means of transport that they used to the nearest health facility during clinic visits for maternal health care services? Findings of the various means of transport utilized by the interviewed women are presented in Table 4.8.

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>141</td>
<td>76.2</td>
</tr>
<tr>
<td>Motorcycle boda boda</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td>Bicycle boda boda</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Own/family motorcycle</td>
<td>02</td>
<td>1.1</td>
</tr>
<tr>
<td>Own/family bicycle</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Public service vehicle</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 4*
Table 4.8 indicates that slightly more than three quarters (76.2%) of study respondents reported walking to the nearest health care facility while both motorcycle (boda boda) and public service vehicles accounted for (10.8%) respectively. The larger (76.2%) percentage of the respondents who were observed to be walking to the health care facility for ANC services despite the fact that they were expectant and whether or not they had complications was amazing in that the mean distance to the nearest health facility was observed to be 7.2 Kilometers, while the mean time taken walking to the health care facility was observed to be one hundred and eleven (111 minutes) minutes or approximately one hour and fifty one minutes (1H:51 M).

Notably, despite these long distances, women had probably no other option. The lack of alternative options was probably due to poverty and limited employment opportunities constraining their financial capabilities and thus a lack of means to pay for even public transportation or seek alternative health care facilities in the locality or in the neighbourhood. However, these findings are not a surprise to this study as they are consistent with those of Cham et al (2005) who reported that structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport, inadequate means of transportation can lead to delays in the decision making process of visiting a health care facility by patients.

4.2.17 Gender of Provider

The gender of the service provider was considered an important variable in this study because some cultures and religions only accept other women to be midwives and not men. This is regardless of the fact that it is until recently that the girl child has been given an
opportunity to go to school leading to differential education qualifications. Results on the gender of provider are presented in Figure 4.9.

Figure 4.9: Distribution of respondents by their preferred gender of provider

Results in Figure 4.9 clearly indicate that over half (53%) of the respondents had no particular preference for the gender of provider whilst over two fifths (42%) and less than one tenth (5%) said that they would want to be attended to by a female or male provider respectively.

The more than half (53%) of the respondents who said they had no particular preference for the gender of the provider may be explained first, by the recognition among respondents that providers are bound by a code of ethics and the fact that all staff undergo similar professional training and thus gender consideration does not compromise quality of care and competence among providers. Second, owing to the remote location of the district and the fact that there are limited choices of health care facilities, expectant women may not have opportunity to make choices of health care providers based on among other things gender and that they have to do with what is available.
As expected, Figure 4.9 shows that over two fifths (42%) of the respondents wanted to be attended to by female providers. Several factors can explain this. One respondent who preferred to be attended to by a female health care practitioner said that:

“kuna mambo mengine huwezi mueleza mwanamume…..mwanamke ni bora haswa amabaye amezaa yuajua kita kita si lazima umweeze.” (Translated this means that there are some issues that you cannot open up to a man….women are better especially those who have given birth because they have experienced child birth and so know everything so you don’t need to tell them everything).

Another respondent who would like to be attended to by a female practitioner retorted that:

“Muche dza mino” (Translated into english means that the female practitioner is a woman just like herself).

Further, it is noted in Figure 4.9 that only 5% of the women would like to be attended to by a male health care provider. This is interesting and unexpected given the private and confidential nature of ANC procedures. This probably is because of the ethical confidence patients have of health care providers to handle private and confidential details regardless of gender differentials of their patients. More interestingly, two respondents among the 5% who said they would like to be attended to by a male health care provider retorted that:

“mimi napenda sana huyo daktari awe mwanamume, hawa wa kike wana madharau sana.” (Translated into english means that she would like the midwife to be a male because the female ones are usually not so friendly). To the contrary, another respondents observed
that “daktari wa kiume wanantia aibu” (Translated into english means that male practitioners make her shy).

4.2.18 Type of Provider

The type of provider was considered as a vital variable in this study as this may affect utilization of maternal health care services if the preferred type of provider by the mothers cannot be easily found in the facility. Results of the study on the type of preferred provider are presented in Figure 4.10.

![Preferred type of provider](image)

**Figure 4. 10: Distribution of respondents by their preferred type of provider**

Findings in Figure 4.10 indicate that slightly more than four fifths (80.9%) of the interviewed respondents prefer to be attended to by trained medical professionals such as Medical Doctors (53.4%), Midwives (14.8%) or Nurses (12.7%). Others preferred T.B.A’s (3.2%) or a combination of all the practitioners (3.7%) whilsts more than one tenth (12.2%) had no preference. Despite more than half (53.4%) of women preferring to be attended to
by a doctor, not even a single doctor has been posted to serve in the sub-district hospital, health center and dispensaries that serve the expansive district.

However, the high number of respondents (80.9%) who preferred to be attended to by a trained medical professional might be a result of the awareness that health professionals are better trained in handling the birth process and emergency cases should any arise in the process of child birth which is always a risky affair. The finding supports MDG’s objectives especially goal five (5) that strives to make sure that women of reproductive age bracket are attended to in health care facilities and by professionals. The fact that over four fifths (80.9%) of interviewed women cited the need to be attended to by professional doctors shows goodwill in what the world is striving to achieve on the part of women.

4.3 Bivariate Analysis

Various statistical tools have been used in this work to provide an in-depth insight on the relationships that exist between the studies’ dependent and independent variables. Bivariate analysis using Chi-square ($\chi^2$) statistic for the test of significance (i.e. goodness of fit) and Cross-tabulation was used to examine the relationship between Socio-Demographic characteristics of the study respondents and utilization of Maternal Health care services.

Further, this thesis uses the Contingency Coefficient (C) to provide a measure of association between the study variables. The rationale behind this is that Contingency Coefficient is appropriate for tables of any size (Mangal, 1987). The value of (C) is given by the formula:

$$C = \sqrt{\frac{\chi^2}{n \times \bar{g}}}$$  
(Equation 4.1)
Where “n” is the sample size and “χ²” is the Chi-square value. Like γ or phi and other coefficients of correlation, C has no limit (i.e. ±1). Its upper limit is dependent upon the number of categories (i.e. the size of the table). Like Chi-square (χ²), it does not have negative values (Mangal, 1987). For a table made up of an equal number of columns and rows (K×K), the upper limit of the Contingency Coefficient is given by the formula:

$$C_{(upper\ limit)} = \frac{\sqrt{K-1}}{K}$$  \hspace{1cm} (Equation 4.2)

Thus, for a 2×2 table, it is 0.7, for a 3×3 table $\sqrt{2/3} = 0.82$ and for a 4×4 table $\sqrt{3/4} = 0.87$, e.t.c. However, when the number of columns and rows differ in a table, to calculate the upper limit, the smaller number is taken as K.

Important to note in this thesis is that all the analysis in this work have been conducted using version 20.0 of the Statistical Package for Social Sciences (SPSS), with all the associations/relationships being tested at 95.0% confidence interval.

4.3.1 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Place of Delivery

In this series of bivariate analyses, using Chi-square and Contingency Coefficient, a number of socio-economic characteristics were tested for their influence on the utilization of MHCS. Results of analysis based on Chi-square statistics and Contingency Coefficient for each independent variable and dependent variable have been presented, interpreted and discussed.
Discussion of findings of analysis was done with a view to integrate the results within the existing framework of knowledge in research literature reviewed in Chapter Two of this thesis. In this regard, the discussion of results in this section will draw from the Chi-square and Contingency Coefficient analyses of various Socio-Demographic characteristics (independent variable(s) and place of delivery (dependent variable) in the order in which they are reflected in Table 4.9.

Findings in Table 4.9 shed some light, inter alia, on the relationship between Socio-Demographic Characteristics (SDC) of the respondents and Place of Delivery (PoD). The presentation of the results of analysis follows next.

From Table 4.9, an attempt is made to show whether there exists a relationship between age and use of health facilities for delivery. It is observed that women aged 28 years and above had the highest (54.5%) percentage of users who delivered in health care facilities. Further, women aged below 28 years accounted for over half (54.2%) of all home deliveries with women aged 28 years and above accounting for (4.5%) of all deliveries that took place either at the T.B.A’s clinic or on the way to hospital. Contrary to our expectations, women aged 28 years and above had more (54.5%) health facility deliveries than young women who accounted for only (40%) of health facility deliveries.
Table 4.9: Relationship between Socio-Demographic Characteristics of respondents and Place of Delivery

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Health Facility</th>
<th>Home</th>
<th>T.B.A’s clinic &amp; on the way to hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>54.2</td>
<td>5.3</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>40.9</td>
<td>4.5</td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>54.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>36.2</td>
<td>5.8</td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>45.0</td>
<td>15.0</td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>57.5</td>
<td>12.5</td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>20.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>60.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>58.1</td>
<td>2.3</td>
</tr>
<tr>
<td>Respondents Education Level (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>64.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>41.2</td>
<td>5.9</td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>59.4</td>
<td>6.2</td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>54.4</td>
<td>5.1</td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>43.3</td>
<td>6.7</td>
</tr>
<tr>
<td>Respondents’ income (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>55.9</td>
<td>8.8</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>52.6</td>
<td>10.5</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>55.3</td>
<td>5.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.539</td>
<td>2</td>
<td>.463</td>
<td>.100</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.043</td>
<td>2</td>
<td>.056</td>
<td>.191</td>
</tr>
<tr>
<td>Religion</td>
<td>21.384</td>
<td>4</td>
<td>.001**</td>
<td>.350</td>
</tr>
<tr>
<td>Parity</td>
<td>18.216</td>
<td>4</td>
<td>.001**</td>
<td>.326</td>
</tr>
<tr>
<td>Respondents Education Level</td>
<td>13.612</td>
<td>4</td>
<td>.009**</td>
<td>.286</td>
</tr>
<tr>
<td>Spousal Education Level</td>
<td>1.860</td>
<td>4</td>
<td>.762</td>
<td>.114</td>
</tr>
<tr>
<td>Respondents’ income</td>
<td>4.129</td>
<td>2</td>
<td>.127</td>
<td>.267</td>
</tr>
<tr>
<td>Income of Spouse</td>
<td>.539</td>
<td>2</td>
<td>.764</td>
<td>.097</td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Overall, age was not significantly associated with place of delivery ($\chi^2=1.539; \text{df}=2; \ p=.463; \ C=.100$). Moreover, the relationship was found to be weak as indicated by the value of C (0.10). A review of literature shows that the findings of the study do not concur with the findings of studies carried out in Nigeria, Uganda and Ethiopia by (Adamu, 2011; Anyait et al., 2012; Teferra et al., 2012; Daniels et al., 2013; Wolelie et al., 2014; Abeje et al., 2014) who contended that age of women of reproductive age was significantly associated with institutional delivery service utilization.

Results in Table 4.9, also show that more than half (54.6%) of married women gave birth at home with three quarters (75.0%) of mothers who are either single, separated, divorced or widowed delivering in a health facility. Interestingly, women who are either single, divorced separated or widowed have a high likelihood (75.0%) of having a health facility delivery than married women. Nonetheless, the relationship between marital status and the place of delivery was not significant ($\chi^2=5.043 \text{ df }=2 \ P=.056 \ C=.191$). This finding is in agreement with other studies from Ethiopia and Uganda (Assfaw & Sebastian, 2010; Anyait et al., 2012) who affirmed that marital union does not influence place of delivery.

Findings in Table 4.9 reveal further that more than half (58.0%) of Christians delivered in a health facility whereas more respondents with no religion and from non-Christian religions delivered at home and in a T.B.A’s clinic or on the way to a health facility. Indeed, religion was significantly associated with place of delivery ($\chi^2=21.384; \text{df }=4; \ p=0.001; \ C=0.350$). Hence we conclude that religion has a significant influence on utilization of maternal health care services. The findings concur with that of Adamu (2011) in Nigeria who contended that religion had a significant association with institutional delivery with Christian women.
more likely to deliver in health facilities. Hence we conclude that religion has a significant influence on utilization of maternal health care services.

Data in Table 4.9 reveals that slightly more than three quarters (75.9%) of the Primiparae women had health facility deliveries with less than a tenth (2.3%) of Grandmultiparae women delivering either at the T.B.A’s clinic or on the way to hospital. This suggests that lower parity women have a high (75.9%) likelihood of taking hospital deliveries. This finding confirms that parity has an influence on women’s place of delivery. These may be probably women in their first pregnancy and that they are being cautious of perceived risks that are associated with child birth. Indeed, parity was significantly associated with place of delivery ($\chi^2=18.216; \text{df}=4; p=0.001; C=0.326$). The study’s findings are consistent with those of (Assfaw & Sebastian, 2010). The findings also confirms those of (Tsegay et al., 2013) who contended that parity is an important determinant of place of delivery.

Table 4.9 also depicts that all (100%) women who had secondary and above level of education delivered in a health care facility. Further, more than three fifths (64.2%) of women with no level of education were observed to have had home deliveries. This finding could be explained by the fact that women with a high education level have the capability to uptake information about maternal health care services subsequently leading to utilization of such services. As reported by (Elo, 1992; Tura & G/Mariam, 2008; Gupta et al., 2010; Adamu, 2011; Anyait et al., 2012; Daniels et al., 2013; Abeje et al., 2014; Ayele et al., 2014; Odo & Shifiti, 2014; Wolelie et al., 2015) maternal education level is a critical aspect in the utilization of maternal institutionalized delivery services.
Indeed, maternal education was significantly related to the place of delivery ($\chi^2=13.612; \text{df}=4; p=0.009; \text{C}=0.286$). These finding is in tandem with that of (Woldemicael, 2007) and also confirms those of (Teferra et al., 2012) who posited that there is a positive relationship between maternal education and place of delivery.

Findings in Table 4.9 depict that half (50.0%) of women whose husbands had secondary and above level of education had hospital deliveries with slightly less than three fifths (59.4%) of women who were married to men with no formal education having their deliveries at home alone or assisted by a relative. This finding may be explained by the fact that husbands education may act as an enabling factor in ensuring the mother receives quality care during child birth as the husband has knowledge on maternal health issues. This finding suggests that women married to men with a high educational level are more likely to deliver in a health facility than those women married to men with no formal education.

However, spousal education level was not significantly associated with place of delivery ($\chi^2=1.860; \text{df}=4; \text{Pp}=0.762; \text{C}=0.114$). Apparently, this finding is contrary to those of (Woldemicael, 2007); Gupta et al., 2010; Anyait et al., 2012; Teferra et al., 2012; Ayele et al., 2014; Wolelie et al., 2014; Prasad, 2014; Odo & Shifti, 2014; Abeje et al., 2014) who contended that spousal education level is significantly associated with maternal health care utilization in institutional setups.

Results in Table 4.9 depict that three fifths (60%) of women who earned 4,000 shillings and above had hospital deliveries with more than half (55.9%) of women earning less than 4,000 shillings having home deliveries. The high number of women earning 4,000 shillings
and above having health facility deliveries with only (35.3%) of women earning less than 4,000 shillings having health facility deliveries could be as a result of the costs involved. As reported by Tura & Mariam, (2008) and maternal income has an influence on utilization of institutional delivery services. However, maternal income was not significantly associated with place of delivery ($\chi^2=4.129$, df=2, $p=0.127$; $C=0.267$).

From Table 4.9, it is evident that less than one tenth (5.3%) and more than half (55.3%) of women whose spouses earned 4,000 shillings and above delivered either at the T.B.A’s clinic or on their way to hospital or at home respectively. Further, slightly more than one third (36.8%) of women whose spouses earned less than 4,000 shillings had health facility deliveries. As expected, women whose husbands earned 4,000 shillings and above were bound to have more health facility deliveries because this acts as an enabling factor than their counterparts married to husbands who earn less than 4,000 shillings. This could be explained by the fact that they have resources that they could use in the course of seeking institutional delivery services as opposed to their counterparts who may not be able to access institutional delivery services due to shortage or lack of needed resources.

However, spousal income level was not significantly associated with place of delivery ($\chi^2=0.539$; df=2; $p=0.764$; $C=0.097$). Hence we conclude that spousal income level has no relationship with place of delivery.

4.3.2 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Antenatal Care

Table 4.10 shows the relationship between Socio-Demographic Characteristics and Antenatal care. In this set of tests, the researcher first makes an attempt to determine
whether a relationship exists between age and number of ANC visits made to the clinic before delivery.

Findings in Table 4.10 show that women aged 28 years and above were found to be more likely (90.9%) to make 4 visits and above to the ANC clinic. More than one third (37.7%) of young women below 28 years were observed to make less than the required four visits to the ANC clinic prior to delivery of child born at last birth. A possible explanation for why less than two fifths (37.7%) of women below age 28 years made less than the required four visits could be as a result of lack of information on the required number and timing of visits to the ANC clinic. As reported by Anchang-Kimbi et al., (2014), young age (less than 20 years) is a significant risk factor associated with fewer clinic visits (less than 4).

Indeed, maternal age was significantly associated with the number of ANC visits ($\chi^2=7.063; \text{df}=1; \ p=0.008; \ C=0.190$). These findings are consistent with those of Banda, (2013), Tsegay et al., (2013) and Anchang-Kimbi et al., (2014), that maternal age has an influence on number of ANC visits hence we conclude that maternal age significantly influences number of ANC visits women make before delivery.
<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>&lt; 4 visits</th>
<th>4 Visits and above</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>37.7</td>
<td>62.3</td>
<td>7.063</td>
<td>1</td>
<td>.008**</td>
<td>.190</td>
</tr>
<tr>
<td>28 years and above</td>
<td>9.1</td>
<td>90.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>31.2</td>
<td>68.8</td>
<td>7.747</td>
<td>1</td>
<td>.005**</td>
<td>.198</td>
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<tr>
<td>Other statuses</td>
<td>63.2</td>
<td>36.8</td>
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<tr>
<td>Religion (%)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>38.3</td>
<td>61.7</td>
<td>7.674</td>
<td>2</td>
<td>.022*</td>
<td>.198</td>
</tr>
<tr>
<td>Other religions</td>
<td>8.7</td>
<td>91.3</td>
<td></td>
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<td>No religion</td>
<td>37.5</td>
<td>62.5</td>
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<tr>
<td>Parity (%)</td>
<td></td>
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</tr>
<tr>
<td>Nulliparae</td>
<td>69.4</td>
<td>30.6</td>
<td>24.609</td>
<td>3</td>
<td>.001**</td>
<td>.339</td>
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<tr>
<td>Primiparae</td>
<td>24.1</td>
<td>75.9</td>
<td></td>
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<tr>
<td>Multiparae</td>
<td>28.4</td>
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<td></td>
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<tr>
<td>Grandmultiparae</td>
<td>23.3</td>
<td>76.7</td>
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</tr>
<tr>
<td>Maternal Education Level (%)</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>No formal education</td>
<td>27.1</td>
<td>72.9</td>
<td>4.237</td>
<td>2</td>
<td>.120</td>
<td>.148</td>
</tr>
<tr>
<td>Primary</td>
<td>39.1</td>
<td>60.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>20.0</td>
<td>80.0</td>
<td>6.133</td>
<td>2</td>
<td>.047*</td>
<td>.186</td>
</tr>
<tr>
<td>Primary</td>
<td>29.9</td>
<td>70.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>46.2</td>
<td>53.8</td>
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</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>26.8</td>
<td>73.2</td>
<td>1.242</td>
<td>1</td>
<td>.265</td>
<td>.136</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Below 4,000 shillings</td>
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<td>81.0</td>
<td>.255</td>
<td>1</td>
<td>.613</td>
<td>.059</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>24.5</td>
<td>75.5</td>
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</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05  **: p ≤ 0.01

Findings in Table 4.10 show that more than three fifths (68.8%) of married women made four visits and above, while slightly more than three fifths (63.2%) of women who were single, separated, widowed or divorced made less than four visits before delivery of their
latest child. The above findings suggest that married women have a higher likelihood of having four visits and above than unmarried women. This could be attributed to the fact that they get maternal services support from their spouses either in form of maternal care information, social or financial support. The finding of this study that male spouses had higher level of education than their wives further strengthen the support that women receive for ANC services during pregnancy.

Indeed, marital status was significantly associated with ANC visits ($\chi^2=7.747; \text{df}=1; p=0.005; \text{C}=0.198$). This finding is consistent with that of a study carried out in India by Gupta et al., (2010) and also confirms that of Anchang-Kimbi et al., (2014) who stated that being single is a significant risk factor associated with fewer clinic visits (less than 4).

Table 4.10 further depicts that majority (91.3%) of women who profess Islam and African Traditional Religion (ATR) made four visits and above, while more than one third (38.3%) of Christian women had less than four visits to the clinic before birth of their latest child. These findings show that women who profess Islam and African Traditional Religion have a high likelihood (91.3%) of having made four visits and above. Indeed, religion was significantly associated with ANC visits ($\chi^2=7.674; \text{df}=2; P=0.022; \text{C}=0.198$). The study finding corroborates that of Adamu, (2011) who contends that religion has an influence on number of ANC visits.

Findings in Table 4.10 reveal that more than three fifths (69.4%) of Nulliparae women made less than four visits, while slightly more than three quarters (76.7%) of grand Multiparae women made four and above ANC visits. This finding can be possibly explained by the fact that women of a higher parity have had previous birth experiences
which might have been occasioned by a complication warranting them to make all the required visits to avert any complication that may arise. Indeed, parity was significantly associated with ANC visits ($\chi^2=24.609; \text{df}=3; P=0.001; C=0.339$). This finding is in agreement with that of Banda, (2013) who reported that parity is significantly associated with number of visits to the ANC clinic.

Table 4.10 further depicts that slightly less than three quarters (72.9%) of women with no formal education made four visits and above with one half (50.0%) of women with secondary education and above making 4 visits and above. The high (72.9%) number of women with no formal education having had more than four ANC visits and half (50%) of women with secondary education or more having less than four visits could be explained by the fact that most respondents knew about maternal health care services irrespective of their educational status. This suggests that existence of informal means such as radio and television among others could be significant sources of information in educating women of reproductive ages as opposed to formal education only. As argued by Banda, (2013), education level does not seem to influence number of ANC visits to the clinic but those with secondary education were more likely to make more visit to the ANC clinic. In essence, this finding contradicts that of Banda (2013) where more (72.9%) women with no formal education were observed to have had four visits and above.

Further, maternal education is associated with improved health, women empowerment and reduction of gender disparities. However, the relationship between maternal education level and ANC visits was not significant ($\chi^2=4.237; \text{df}=2; P=0.120; C=0.148$). This study finding contradict those of (Elo, 1992; Chakraborty et al., 2003; Woldemicael, 2007; Gupta et al.,
2010) who reported that maternal education has a significant bearing on the number of ANC visits.

Results in Table 4.10 also show that four fifths (80%) of women married to men with no formal education made four visits and above, while more than two fifths (46.2%) of women whose spouses had secondary and above level of education made less than four visits. Interestingly, respondents who utilized the services more had spouses with lower levels of education as compared to those who did not utilize them. This could be attributed to the fact that use of antenatal care is not limited to formal education only. Further, Maternity services are now free and there is massive awareness creation by the Ministry of Health (MoH) on utilization of MHCS in the rural areas, in addition to other initiatives such as the Beyond Zero Campaign by the First Lady Margaret Kenyatta.

Indeed, spousal education level was significantly associated with number of ANC visits ($\chi^2=6.133; df=2; p=0.047; C=0.186$). This study finding corroborate those of Woldemicael, (2007; and Daniels et al., (2013) when they contended that spousal educational level was associated with 4 and above antenatal visits.

Findings of the study in Table 4.10 also show that slightly less than three quarters (73.2%) of women who earned 4,000 shillings and above four visits and above with two fifths (40.0%) of women earning below 4,000 shillings making less than four visits. This finding could be explained on the basis of the Output Based Approach (OBA) program which aims to improve access, equity and uptake of quality reproductive health services to economically disadvantaged women. The women purchase the vouchers at a subsidized price of 100 shillings which entitles them to access reproductive health services such as
Safe Motherhood (SMH), Family Planning (FP) and Gender Based Violence (GBV) recovery services free of charge.

Maternal income was not significantly associated with number of ANC visits ($\chi^2=1.242$; df=1; p=0.265; C=0.136). Notably, this finding is not in tandem with that of Gupta et al., (2010) when they contended that maternal income had a significant influence on the number of ANC visits.

Finally, results in Table 4.10 depict that slightly more than four fifths (81.0%) of women whose spouses earned less than 4,000 shillings made four ANC visits or more compared with (75.5%) of women whose spouses earned 4,000 shillings and above. This finding could be explained by the fact that the Government of Kenya (GoK) abolished maternity fees in all public health facilities through a presidential decree on 1st June 2013 (“MaternalNewbornHealthCare_Kenya_Oct2013.pdf,” n.d.). However, spousal income level was not significantly associated with the number of ANC visits ($\chi^2=0.255$; df=1; p=0.613; C=0.059). Hence we conclude that spousal income level does not influence the number of ANC visits the woman makes during pregnancy.

4.3.3 Relationship between Socio-Demographic Characteristics and Utilization of Skilled Birth Attendance (SBA)

Table 4.11 shows the relationship between Socio-Demographic Characteristics and use of Skilled Birth Attendants services. In this study, an attempt was made to understand the relationship between age and Utilization of Skilled Birth Attendance.
Results of analysis in Table 4.11 indicate that slightly less than three fifths (59.5%) of women aged below 28 years did not have SBA service at birth of their latest child while more than half (54.5%) of the women aged 28 years and above had SBA service during their latest birth. This could be explained by the fact that marriage is seen as a sacred institution in the African set up and thus getting children before marriage was a sign of lack of morals. Accordingly, many young women who were not married ran away from their parent’s home and went to give birth elsewhere.

The relationship between age and SBA service was not significant ($\chi^2=1.530; \text{df}=1; p=0.216; C=0.099$). This finding contradicts those of Daniels et al., (2013) when they contended that use of SBA was more associated with the youth.

Table 4.11 shows that slightly more than three fifths (60.3%) of married women did not have SBA of child born at last birth, while three quarters (75.0%) of women who were unmarried had SBA services. Being married means one has a partner who could take care of them and that is why most respondents had no skilled attendance at birth, while being unmarried makes one to seek SBA services in case labour pains commence when they are all alone at home. Indeed, marital status was significantly associated with SBA services ($\chi^2=5.634; \text{df}=1; p=0.018; C=0.188$). This study’s finding is consistent with that of Daniels et al., (2013) that marital status has a significant association with SBA with single mothers more likely to seek SBA.
Table 4.11: Relationship between Socio-Demographic characteristics of respondents and use of a Skilled Birth Attendant (SBA)

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Skilled Attendance</th>
<th>Unskilled Attendance</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>59.5</td>
<td>1.530</td>
<td>1</td>
<td>.216</td>
<td>.099</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>45.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>60.3</td>
<td>5.634</td>
<td>1</td>
<td>.018*</td>
<td>.188</td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>42.0</td>
<td>13.463</td>
<td>2</td>
<td>.001**</td>
<td>.284</td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>73.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
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<td>0.0</td>
<td>16.951</td>
<td>2</td>
<td>.001**</td>
<td>.316</td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>24.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>67.9</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>69.1</td>
<td>12.934</td>
<td>2</td>
<td>.002**</td>
<td>.279</td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>47.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>65.6</td>
<td>1.590</td>
<td>1</td>
<td>.451</td>
<td>.106</td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>59.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>64.7</td>
<td>3.113</td>
<td>1</td>
<td>.078</td>
<td>.233</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>63.2</td>
<td>.037</td>
<td>1</td>
<td>.847</td>
<td>.025</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$
Results in Table 4.11 show that less than three fifths (58.0%) of Christians had skilled attendance at birth, while three fifths (60.0%) of women who belong to Islam and African Traditional Religion had no skilled attendance at birth of child born at last birth. Christian women tend to use SBA more (58.0%) than women who profess Islam and ATR who report (60.0%) utilization of unskilled attendance at birth. According to Stenlund, (2012) women belonging to religions other than Islam have higher odds of delivering with assistance of SBA’s. Indeed, religion was significantly associated with use of SBA services ($\chi^2=13.463; \text{df}=2; p=0.001; C=0.284$). This finding corroborates that of Stenlund, (2012) who contended that women belonging to other religions had higher odds of delivering with assistance of SBA’s than those of Islamic faith.

Further, findings in Table 4.11 indicate that slightly more than three quarters (75.9%) of Primiparae women had skilled attendance services at birth during latest birth, while more than three fifths (67.9%) of Multiparae women had no skilled attendance during latest birth. Lower parity women are more likely to use SBA than higher parity women because higher parity women have experience due to previous births. As reported by Worku et al., (2013), women who had births for the first time were more likely to use Skilled Birth Attendance services. Indeed, parity was significantly associated with Skilled Birth Attendance ($\chi^2=16.951; \text{df}=2; p=0.001; C=0.316$). The study’s finding is consistent with those of (Ochako et al., 2011; Kabakyenga et al., 2012; Worku et al., 2013) who contended that parity has a strong bearing on utilization of SBA.

Table 4.11 also depicts that slightly less than one third (30.9%) of women with no formal education had skilled attendance at birth with all women with secondary and higher
education level background having skilled attendance at birth. Education exposes women to information and knowledge on the importance of utilization of SBA and thus skilled birth attendance increases with secondary education and above. According to (Kabakyenga et al., 2012), women with secondary education and above are more likely to use SBA’s than those with lower levels of education. Indeed, maternal education was significantly associated with Skilled Birth Attendance \((\chi^2=12.934; \text{df}=2; \ p=0.002; \ C=0.279)\). This finding is in tandem with those of (Ochako et al., 2011; Worku et al., 2013) who reported that maternal education has a significant bearing on use of SBA.

Table 4.11 further indicates that half (50.0%) of women whose spouses had secondary and higher level of education had skilled attendance services at birth, while more women (65.6%) whose spouses had no formal education had no access to skilled services at delivery. Spousal education level acts as an enabling factor for utilization of SBA. However, spousal education level was not significantly associated with Skilled Birth Attendance \((\chi^2=1.590; \text{df}=1; \ p=0.451; \ C=0.106)\). The finding contradicts those of Daniels et al., (2013) when they reported that spousal educational level was significantly associated with assistance at delivery by a trained medical personnel.

Results in Table 4.11 also indicated that three fifths (60.0%) of women who earned more than 4,000 shillings had skilled attendance at birth, while more than three fifths (64.7%) of the women who earned less than 4,000 shillings did not have skilled attendance during the birth of their current child. Maternal income was not significantly associated with Skilled Birth Attendance \((\chi^2=3.113; \text{df}=1; \ p=0.078; \ C=0.233)\). The study finding is inconsistent with that of Stenlund (2012) who contended that women belonging to the poor and poorest
wealth groups are more likely to receive unskilled assistance than their counterparts in the richest and richer wealth groups.

Results in Table 4.11 show that more than three fifths (63.2%) of women whose spouses earned less than 4,000 shillings did not receive skilled attendance at birth while (60.5%) of those whose spouses earned more than 4,000 shillings received skilled attendance at birth. These proportions are about the same. Hence, spousal income level is not significantly associated with Skilled Birth Attendance ($\chi^2=0.037; df=1; p=0.847; C=0.025$). Hence we conclude that spousal income level does not have a significant association with use of SBA.

4.3.4 Relationship between Socio-Demographic Characteristics and utilization of maternal health care services as measured by Trimester women sought ANC care

Table 4.12 shows that none of the Socio-Demographic characteristics had a significant association with trimester in which women sought ANC care.

Age ($\chi^2=.001; df=1; p=.982; C=.002$) and marital status ($\chi^2=.224; df=1; p=.636; C=.042$) were not significantly associated with trimester the woman started ANC visits. These findings are inconsistent with those of (Daniels et al., 2013) who stated that age and marital status plays a significant role in use of ANC services within the first trimester. Religion was not significantly associated with trimester ($\chi^2=.941; df=2; p=.625; C=.086$). These findings are inconsistent with those of (Olayinka, Joel, & Bukola, 2012) who contended that there was a relationship between religion and trimester women started their ANC visits.
Table 4.12: Relationship between Socio-Demographic Characteristics and Trimester women sought ANC care

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>1st Trimester</th>
<th>2nd &amp; 3rd Trimesters</th>
<th>χ²</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>24.0</td>
<td>76.0</td>
<td>.001</td>
<td>1</td>
<td>.982</td>
<td>.002</td>
</tr>
<tr>
<td>28 years and above</td>
<td>23.8</td>
<td>76.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Married</td>
<td>24.6</td>
<td>75.4</td>
<td>.224</td>
<td>1</td>
<td>.636</td>
<td>.042</td>
</tr>
<tr>
<td>Other statuses</td>
<td>18.2</td>
<td>81.8</td>
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</tr>
<tr>
<td>Religion (%)</td>
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<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>21.1</td>
<td>78.9</td>
<td>.941</td>
<td>2</td>
<td>.625</td>
<td>.086</td>
</tr>
<tr>
<td>Other religions</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>No religion</td>
<td>28.3</td>
<td>71.7</td>
<td></td>
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</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Nullipara</td>
<td>0.0</td>
<td>0.0</td>
<td>.302</td>
<td>2</td>
<td>.860</td>
<td>.049</td>
</tr>
<tr>
<td>Primipara</td>
<td>28.6</td>
<td>71.4</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Multipara</td>
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<td>77.6</td>
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<tr>
<td>Grandmultipara</td>
<td>26.2</td>
<td>73.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Maternal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>26.3</td>
<td>73.7</td>
<td>.803</td>
<td>2</td>
<td>.669</td>
<td>.080</td>
</tr>
<tr>
<td>Primary</td>
<td>20.8</td>
<td>79.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>0.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Spousal Education Level (%)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>31.0</td>
<td>69.0</td>
<td>.842</td>
<td>2</td>
<td>.656</td>
<td>.085</td>
</tr>
<tr>
<td>Primary</td>
<td>24.2</td>
<td>75.8</td>
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<td></td>
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<tr>
<td>Secondary and above</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>22.6</td>
<td>77.4</td>
<td>.899</td>
<td>1</td>
<td>.343</td>
<td>.136</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>17.6</td>
<td>82.4</td>
<td>.089</td>
<td>1</td>
<td>.765</td>
<td>.042</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>21.2</td>
<td>78.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01

Additionally, Parity was not significantly associated with trimester women started their ANC visits (χ²=.302; df=2; p=.860; C=.049). These findings are inconsistent with those of
(Daniels et al., 2013) who contended that parity has a bearing on trimester that women start receiving antenatal care.

Maternal education was not significantly associated with trimester ($\chi^2=0.803; \text{df}=2; p=0.669; C=0.080$). The study findings are consistent with those of (Daniels et al., 2013) who stated that education level did not have a significant relationship with use of ANC during the first trimester. In addition, spousal education was not significantly associated with trimester ($\chi^2=0.842; \text{df}=2; p=0.656; C=0.085$). The study findings are contrary to those of (Daniels et al., 2013) who contended that spousal education level was associated with trimester women start receiving antenatal care.

Maternal income ($\chi^2=0.899; \text{df}=1; p=0.343; C=0.136$) and spousal income ($\chi^2=0.089; \text{df}=1; p=0.765; C=0.042$) were not significantly associated with the trimester they started ANC visits.

4.3.5 Women’s Preference and Perception of ANC Services Offered at the Healthcare Facilities

Results from Table 4.13 indicate that, more than four fifths (80%) of women visiting a dispensary, a health centre or a sub-district hospital reported being happy with the facility space, neatness and adequacy of privacy that was provided. Of women visiting both categories of facilities, less than a tenth (6.4%) of them preferred being attended to by a male provider with more than two fifths (45.6%) of those visiting the dispensary preferring a female health care provider and those attending health centres and sub-district hospital accounting for less than two fifths (35.9%) preference of female health care provider. This
could possibly be explained by either cultural issues surrounding child birth in the community.

**Table 4.13: Women’s preference and perception of ANC services offered in the health facilities**

<table>
<thead>
<tr>
<th></th>
<th>Dispensary (n= 125)</th>
<th>Health Centre + Sub district hospital (n= 64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waiting time (minutes) Mean</strong></td>
<td>39.08</td>
<td>54.61</td>
<td>.010**</td>
</tr>
<tr>
<td><strong>Happy with waiting time (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Yes</td>
<td>99.2</td>
<td>85.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with facility space (%)</strong></td>
<td></td>
<td></td>
<td>.301</td>
</tr>
<tr>
<td>Yes</td>
<td>83.2</td>
<td>88.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.8</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with neatness (%)</strong></td>
<td></td>
<td></td>
<td>.327</td>
</tr>
<tr>
<td>Yes</td>
<td>93.6</td>
<td>89.1</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6.4</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td><strong>Adequate privacy (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Yes</td>
<td>92.0</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred gender of provider (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Male</td>
<td>6.4</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45.6</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>48.0</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred type of provider (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Doctor</td>
<td>53.6</td>
<td>53.1</td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>12.0</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td>20.8</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Traditional Birth Attendant</td>
<td>4.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>A combination</td>
<td>4.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>5.6</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td><strong>Would you come back to this facility (%)</strong></td>
<td></td>
<td></td>
<td>.129</td>
</tr>
<tr>
<td>Yes</td>
<td>91.2</td>
<td>93.8</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.6</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>7.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td><strong>Will you recommend this facility to others (%)</strong></td>
<td></td>
<td></td>
<td>.413</td>
</tr>
<tr>
<td>Yes</td>
<td>96.8</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.4</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p≤ 0.05 **: p≤ 0.01
Table 4.13 further presents women’s preferences and perceptions of ANC services that are offered at the dispensaries, health centres and sub-district hospital in Ganze District. More than 90% of women attending dispensaries or either health centre or sub-district hospital reported that they would return to the same health facility or would recommend it to others. The mean waiting time in the health centre and sub-district hospital per visit was significantly higher (54.61 minutes) than that in the dispensaries (39.08 minutes). Contrary to expectations, more (99.2%) women were happy with the waiting time at the dispensaries compared to health centres and sub-district hospitals (85.9%), with the latter being higher in the health care delivery system hierarchy in the country.

Results in Table 4.13 show that more than two fifths (48.0%) of women at the dispensaries had no preference on the preferred gender of provider with slightly more than three fifths (60.9%) at the health centres and sub-district hospitals having no preference for gender of health provider. This could be attributed to the fact that both are trained professionals as supported by field interviews and observations. Findings show that half (50%) of women visiting both set of facilities preferred being attended to by a doctor with only 1.6% of those visiting health centres and sub-district hospitals preferring TBA’s as opposed to 4% of those visiting the dispensary. There is a significant relationship between category of facility and waiting time (p=0.010) and the preferred type of provider (p=0.001).

### 4.3.6 Proportion of women who felt reassured about common pregnancy related concerns by health care providers

Study findings on reassurance patterns that women received from their providers about common pregnancy related issues are avidly presented in Table 4.14. Overall, among the
women who attended either a health facility or sub-district hospital, slightly more than four fifths (83%) felt reassured about the position of the baby and that of their own health. However, 87.8% of women who visited dispensaries did not receive information about the size of their unborn baby with more than three fifths (62.7%) receiving information about foetal abnormality. More than three fifths (68.3%) of our total sample who visited the dispensary had received information about the position of the baby, over three fifths (62.6%) on foetal abnormality and over four fifths (82.9%) on mothers own health and those who visited either a health centre or a sub-district hospital had received information about the position of the baby (83.9%), size of the baby (58.1%), foetal abnormality (67.7%) and mothers own health (87.1%) and felt reassured except that only (12.2%) of those who visited dispensaries received information on the size of their babies.

Significantly, those women visiting either a health centre or a sub-district hospital feel much more reassured about the four highlighted pregnancy related complications than those visiting the dispensaries. Women visiting a health centre or a sub-district hospital were significantly associated with receiving information about the position of the baby (p=0.23) and the size of the baby (p=0.001). These findings corroborate those of a study carried out in Gambia by Jallow et al., (2012) which observed that category or type of health facility had a bearing on receiving information about position and size of the unborn baby with women attending private health facilities likely to receive such information than those attending public health facilities.
Table 4.14: Proportion of women who were reassured about common pregnancy related concerns by their service providers

<table>
<thead>
<tr>
<th></th>
<th>Women who felt reassured</th>
<th>$\chi^2$</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dispensary (n = 125)</td>
<td>Health Centre + Sub district hospital (n = 64)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Position of the baby (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>68.3</td>
<td>83.9</td>
<td>5.138</td>
<td>1</td>
<td>.023**</td>
</tr>
<tr>
<td>No</td>
<td>31.7</td>
<td>16.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size of the baby (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12.2</td>
<td>58.1</td>
<td>43.435</td>
<td>1</td>
<td>.001**</td>
</tr>
<tr>
<td>No</td>
<td>87.8</td>
<td>41.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foetal abnormality (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>62.6</td>
<td>67.7</td>
<td>.475</td>
<td>1</td>
<td>.491</td>
</tr>
<tr>
<td>No</td>
<td>37.4</td>
<td>32.3</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Mother’s own health (%)</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>82.9</td>
<td>87.1</td>
<td>.542</td>
<td>1</td>
<td>.461</td>
</tr>
<tr>
<td>No</td>
<td>17.1</td>
<td>12.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

However, no significant relationship exists between receiving information on foetal abnormality (p=0.491) and mothers own health (p=0.461) and the category of health facility one visits. This finding is inconsistent with that of Jallow et al., (2012) who contended that category of facility had a significant association with receiving information about foetal abnormality and the health of the mother during the pregnancy term. Thus, findings in Table 4.14 clearly show that women of reproductive age (18-49) in Ganze District would prefer to visit either a health centre or a sub-district hospital owing to reassurance they get concerning complications to their unborn children and that of their own health.
4.4: Logistic Regression Analyses

Binomial logistic regression was undertaken because it examines the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). Binomial logistic regression was undertaken for the three dependent variables: Place of Delivery, Number of ANC visits to the clinic before birth of current child and Skilled Birth Attendance which is without doubt the single most critical intervention in reducing maternal mortalities and morbidities (Mpembeni et al., 2007).

In this part of the analysis, only five socio-demographic variables were included in the model: age, marital status, religion, education and parity. The rationale behind this is that preliminary analysis showed that only these five socio-demographic variables were significant either at the bivariate and multivariate level of analysis.

4.4.1 Binary Logistic Regression on Socio-Demographic Characteristics and Institutional Delivery Service Utilization

In Table 4.15 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization of Institutional Delivery services. Results from Table 4.15 indicate that except for mother’s age and level of education, all the selected socio-demographic characteristics are significant predictors of utilization of institutional delivery services in Ganze district.
Table 4.15: Binary Logistic Regression results with odds ratios and 95% confidence interval for Institutional Delivery service utilization

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
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<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
</tr>
<tr>
<td>Marital status</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td>0.330</td>
</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td>1.915</td>
<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
<td>0.001**</td>
</tr>
<tr>
<td>Parity</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Primiparae®</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td>(1.618-21.668)</td>
<td>0.007**</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Missing Cases =36 ® - Reference category; Note: p values *:p ≤ 0.05 **: p ≤ 0.01

From Table 4.15, it is evident that Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) likely to have institutional delivery service utilization than Primiparae women. Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) likely to have institutional delivery service utilization than Primiparae women. Institutional delivery service utilization was also more common among women belonging either to Islam, ATR and those women who professed no religion (AOR 3.091,
95% CI, 1.447-6.602, \( p=0.004 \). The probability was much less for women who were unmarried (AOR 0.170, 95% CI 0.039-0.749, \( p=0.019 \)).

4.4.2 Regression on Socio-Demographic Characteristics and Number of ANC Visits

In Table 4.16 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the number of ANC visits made to the clinic.

Table 4.16: Binary Logistic Regression results with odds ratios and 95% confidence interval for Number of ANC visits

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>189</td>
<td>1.766</td>
<td>0.844</td>
<td>4.384</td>
<td>1</td>
<td>5.849</td>
<td>(1.120-30.553)</td>
<td>0.036*</td>
</tr>
<tr>
<td>28 years and above</td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>189</td>
<td>-1.320</td>
<td>0.573</td>
<td>5.297</td>
<td>1</td>
<td>0.267</td>
<td>(0.087-0.822)</td>
<td>0.021*</td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>189</td>
<td>0.080</td>
<td>0.362</td>
<td>0.048</td>
<td>1</td>
<td>1.083</td>
<td>(0.533-2.199)</td>
<td>0.826</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>189</td>
<td>-0.153</td>
<td>0.407</td>
<td>0.141</td>
<td>1</td>
<td>0.859</td>
<td>(0.387-1.906)</td>
<td>0.708</td>
</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae®</td>
<td>36</td>
<td>1.872</td>
<td>.577</td>
<td>10.515</td>
<td>1</td>
<td>6.499</td>
<td>(2.097-20.145)</td>
<td>0.003**</td>
</tr>
<tr>
<td>Primiparae</td>
<td>29</td>
<td>1.508</td>
<td>0.481</td>
<td>9.841</td>
<td>1</td>
<td>4.516</td>
<td>(1.761-11.585)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
<td>0.031*</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
<td></td>
</tr>
</tbody>
</table>

® - Reference category; Note: p values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)
Results from Table 4.16 indicate that mother’s age, marital status and parity are significant predictors of the number of ANC visits women will make before delivery in Ganze district.

From Table 4.16, it is evident that women aged above 28 years (AOR 5.849, 95% CI 1.120-30.553, p=0.036) and those who were single, separated, divorced and widowed (AOR 0.267, 95% CI 0.087-0.822, p=0.021) were more likely to make four or more antenatal visits to the clinic before delivery of their latest child. Further, parity was found to have a significant impact on the number of ANC visits with Primiparae women being six times (AOR 6.499, 95% CI 2.097-20.145, p=0.001) more likely to make four or more ANC visits than Nulliparae women; Multiparae women being five times (AOR 4.516, 95% CI 1.761-11.585, p=0.002) likely to make four or more visits than Nulliparae women and lastly Grandmultiparae women being four times (AOR 3.722, 95% CI 1.129-12.273, p=0.031) likely to make four or more visits to the ANC clinic than Nulliparae women.

4.4.3 Binary Logistic Regression on Socio-Demographic Characteristics and Skilled Assistance during Delivery

In Table 4.17 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization skilled attendance during delivery. Results from Table 4.17 indicate that apart from mother’s age educational status, all other selected socio-demographic characteristics are significant predictors of utilization of skilled assistance during delivery in Ganze district.
Table 4.17: Binary Logistic Regression results with odds ratios and 95% confidence interval for Skilled Assistance during Delivery

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td></td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td><strong>0.019</strong></td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religious Affiliation</strong></td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td><strong>0.004</strong></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Respondents Education status</strong></td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td><strong>0.330</strong></td>
</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity</strong></td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae®</td>
<td>29</td>
<td>12.301</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>0.002</strong></td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td></td>
<td>2.315-19.897</td>
<td>(1.618-21.668)</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td></td>
<td>1.618-21.668</td>
<td>(0.662-0.662)</td>
<td><strong>0.007</strong></td>
</tr>
</tbody>
</table>

Missing cases = 36 @ - Reference category; Note:p values *: p ≤ 0.05 **: p ≤ 0.01

Table 4.17 depicts that Muslim women, those who believed in ATR and who professed no religion were three times (AOR 3.091, 95% CI 1.447-6.602, p=0.004) more likely to use the assistance of a Skilled Birth Attendant than Christian women. Further, women who were unmarried were (AOR 0.170, 95% CI 0.039-0.749, p=0.019) less likely to use the assistance of a Skilled Birth Attendant. Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) more likely to use a Skilled Birth Attendant than
Primiparae women and Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) more likely to use a Skilled Birth Attendant during birth than Primiparae women.

**4.4.4 Binary Logistic Regression on Socio-Demographic Characteristics and Trimester women started attending ANC clinic**

In Table 4.18 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the trimester that women started making ANC visits to the clinic. Results from Table 4.18 indicate that all selected socio-demographic characteristics are not significant predictors of the timing that women start making ANC visits to the clinic in Ganze district.

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at most recent birth</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>125</td>
<td>-0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038</td>
<td>(0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038</td>
<td>(0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>125</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474</td>
<td>(0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td>-0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474</td>
<td>(0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>125</td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789</td>
<td>(0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789</td>
<td>(0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>125</td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1</td>
<td>1.326</td>
<td>(0.516-5.940)</td>
<td>0.558</td>
</tr>
<tr>
<td>Some formal</td>
<td></td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1</td>
<td>1.326</td>
<td>(0.516-5.940)</td>
<td>0.558</td>
</tr>
</tbody>
</table>
Results in Table 4.18 show that there exists no significant relationship between the socio-demographic characteristics of the respondents and the trimester that they first started attending ANC clinic. However, women aged above 28 years (AOR 1.038, 95% CI 0.306-3.515, p=0.952) and those who were unmarried (AOR 1.474, 95% CI 0.296-7.344, p=0.636) were one time more likely to make their first visit to the ANC clinic during the first trimester of their pregnancy. Multiparae women (AOR 1.708, 95% CI 0.284-10.295, p=0.559) were two times more likely to make their first ANC visit during the first trimester than Primiparae women with Grandmultiparae women (AOR 1.438, 95% CI 0.207-9.997, p=0.714) being one more time likely to make their first ANC visit during the first trimester than Primiparae women.
CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary
This section presents a summary of the comparison of results of the relationship between the socio-demographic characteristics of the study respondents and variables used to measure the utilization of MHCS at both the Bivariate and Multivariate Logistic Regression Analyses to try and find out what determines utilization of maternal healthcare services in Ganze district. The findings of this study as shown in Table 5.1, Table 5.2, Table 5.3 and Table 5.4 confirm that the four indicators of utilization of maternal health care services are affected differently by the various socio-demographic characteristics in the entire Ganze district at the bivariate and multivariate levels of analyses. Further, the differences in the utilization of the different maternal health care services as espoused by the two levels of analyses will enable us to clearly focus on what should be done in an effort to improve utilization levels.

5.1.1 Comparison of results of relationship between socio-demographic characteristics and institutional service delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses
Table 5.1 shows the relationship of all the socio-demographic characteristics of the respondents with institutional delivery service utilization both at the Bivariate and Multivariate levels of analyses to find out what predicts institutional delivery service utilization.
Table 5.1: Comparison of results of relationship between Socio-Demographic characteristics and Institutional Service Delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>$p$</td>
</tr>
<tr>
<td>Age</td>
<td>1.539</td>
<td>0.463</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.043</td>
<td>0.056</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>21.384</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Respondents education</td>
<td>13.612</td>
<td><strong>0.009</strong></td>
</tr>
<tr>
<td>Parity</td>
<td>18.216</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

Findings in Table 5.1, interestingly show that while at the Bivariate level analysis, maternal education was significantly ($p=0.009$) related to institutional delivery services utilization, at the Multivariate level analysis it has no significant bearing on the utilization of the institutional delivery services ($p=0.330$). This is not to imply that education is not an important predictor of institutional delivery service utilization at all since it exposes women to access and knowledge on maternal health issues. This finding could be attributed in the way the variable education was coded and it could also be explained by the fact that there has been massive campaigns by the GoK and MoH in sensitizing the population about the importance of utilization of maternal health care services to avert the dangers that are associated with pregnancy and child birth through other media such as the radio, television and even the chiefs ‘barazas’. Marital status of the mothers is insignificant ($p=0.056$) at the bivariate level analysis but proves to be significant ($p=0.019$) at the multivariate level analysis. Religion and Parity of the mothers were found to be both significant at the bivariate and multivariate levels of analyses.
5.1.2 Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.2 shows the relationship of all the socio-demographic characteristics of the respondents and number of ANC visits that women make to the health facilities both at the Bivariate and Multivariate levels of analyses to find out what predicts the number of ANC visits that mothers make to the health facility.

Table 5.2: Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>$p$</td>
</tr>
<tr>
<td>Age</td>
<td>7.063</td>
<td>0.008**</td>
</tr>
<tr>
<td>Marital Status</td>
<td>7.747</td>
<td>0.005**</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>7.674</td>
<td>0.022*</td>
</tr>
<tr>
<td>Respondents’ education</td>
<td>4.237</td>
<td>0.120</td>
</tr>
<tr>
<td>Parity</td>
<td>24.609</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: $p$ values *: $p \leq 0.05$ **: $p \leq 0.01$

From Table 5.2, it is interesting to note that despite the fact we expected education to be a significant determinant of the number of ANC visits that mothers make to the clinic due to access and use of knowledge on maternal health issues acquired during formal education, maternal education is insignificant both at the Bivariate and Multivariate level analyses. Further, while religious affiliation is significant at the Bivariate level ($p=0.022$), it is insignificant ($p=0.826$) at the Multivariate level analysis after controlling for the effects of the other variables under study.

Age of the mothers, marital status and parity prove to be significant at the 95.0%
confidence interval both at the Bivariate and Multivariate level analyses as shown in Table 5.2. The study found out that mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the number of visits they make to the health facility at the Multivariate regression analysis level as indicated by these findings.

5.1.3 Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendants at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.3 shows the relationship of all the socio-demographic characteristics of the respondents and the use of Skilled Birth Attendants (SBA) both at the Bivariate and Multivariate levels of analyses to find out what predicts utilization of Skilled Birth Attendants.

Table 5.3: Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendant at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>1.530</td>
<td>0.216</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.634</td>
<td>0.018*</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>13.463</td>
<td>0.001**</td>
</tr>
<tr>
<td>Respondents education</td>
<td>12.934</td>
<td>0.002**</td>
</tr>
<tr>
<td>Parity</td>
<td>16.951</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: p values *:p ≤ 0.05 **: p ≤ 0.01

From Table 5.3, apart from the age of the mothers; marital status, religious affiliation, maternal education, and parity all prove to be significant at the 95.0% confidence interval at the Bivariate level of analysis. However, while marital status, religious affiliation and parity still prove to be significant at the Multivariate level of analysis and thus strongly
predicting the utilization of Skilled Birth Attendants, but maternal education does not.

5.1.4 Comparison of results of relationship between Socio-Demographic characteristics and trimester mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.4 shows the relationship of all the socio-demographic characteristics of the respondents and the trimester that mothers started attending ANC clinic both at the Bivariate and Multivariate levels of analysis to find out what predicts utilization of maternal health care services.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>( p )</td>
</tr>
<tr>
<td>Age</td>
<td>0.001</td>
<td>0.982</td>
</tr>
<tr>
<td>Marital Status</td>
<td>0.224</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>0.941</td>
<td>0.625</td>
</tr>
<tr>
<td>Respondents education</td>
<td>0.803</td>
<td>0.669</td>
</tr>
<tr>
<td>Parity</td>
<td>0.302</td>
<td>0.860</td>
</tr>
</tbody>
</table>

Note: \( p \) values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)

From Table 5.4, it is evident that all the socio-demographic characteristics have no significant bearing on the trimester that women start attending antenatal clinic for their check-ups both at the Bivariate and Multivariate levels of analyses.

5.2 Conclusion
The findings of this study confirm that a woman’s marital status, religious affiliation and parity are strong predictors of institutional delivery service utilization. Further, mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the
number of visits that the mothers make to the health facility and lastly marital status, religious affiliation and parity strongly predict utilization of SBA’s. In addition, Parity proved to be a strong predictor of utilization of almost all the four maternal health care services apart from trimester that women started attending ANC clinic as it predicts their utilization both at the bivariate and multivariate level analysis at 95.5% confidence interval.

More women who are unmarried, those affiliated to non-Christian faiths, low parity women and those aged 28 years and above utilize maternal health care services more.

5.3 Recommendations

Evidence from this study enables making of suggestions and recommendations in three vital areas. First, the findings have some implications on the formulation of public health policies that will lower maternal morbidities and mortalities by improving utilization of MHCS. Second, it has practical implications on public health care practice and lastly it has implications for further research to uncover whatever has not been researched on in this study and others and thus update sociological knowledge on this important topic to help reduce maternal morbidities and mortality.

5.3.1 Recommendations for Policy

1. It is recommended from the findings of this study that stakeholders in maternal health care such as the National and County governments and the Civil Society Organizations make deliberate policies that will involve women aged 28 years and above as role models to sensitize other women on the importance of making the required number of ANC visits.
2. Policy provisions can also be developed by county governments and the civil society organizations to enhance women utilization of maternal health care services through an incentive and reward system to those women who make the required ANC visits and deliver in institutional care or under SBA supervision.

3. It is recommended that the national government come up with a policy that will ensure that maternal health care services are provided in most public health care facilities on a daily basis and not on specific days so that expectant women can access the services whenever they need them.

4. Further, deliberate policy should be formulated to encourage county governments to have ANC facilities at sub county levels. Alternatively, it can be a matter of policy, especially at the county government level that most health facilities should have at least a delivery room and trained personnel to provide an opportunity for expectant women to access professional ANC services and deliver under the care of professional staff. Such a policy will enhance women delivery under professional care reducing maternal morbidity and mortality and that of their new born babies.

5. It is recommended through the Ministry of Education, Science and Technology that the government strengthen affirmative action as a matter of policy to ensure that girl child education is prioritised in order to improve educational standards of women. This is envisioned as a long term policy strategy that will provide them with avenues and opportunities of acquiring information about use and importance of utilizing maternal health care services.
6. It is recommended that public health policy on awareness on the importance of utilization of institutional delivery service be initiated with a clear focus on high parity women, women with low education levels and women who professed Islam and ATR. Such a policy strategy can be a panacea for ensuring enhanced utilization of institutional delivery to this segment of the population especially in the study area.

5.3.2 Recommendations for Practice

1. With regards to the prevailing pattern of late and irregular antenatal clinic attendance, it is recommended that there be awareness creation by maternal health care stakeholders such as governments and NGOs on (ANC timing) when mothers should commence their ANC visits and the number of visits they should make until they give birth.

2. It is recommended that there be awareness creation by the National and County governments, NGOs and FBOs on the importance of using institutional delivery service or skilled midwifery assistance/skilled birth attendance at every child birth as it helps in reducing maternal and child deaths.

3. It is recommended to health and development workers that improving community awareness and perception on skilled providers and their care through community meetings by targeting women who prefer non skilled health care providers and those who lack awareness on the importance of utilization of maternal health care
services to themselves and their unborn children will help in reducing maternal and child deaths.

4. It is recommended that a doctor be posted to serve in the district as most mothers said they would like to be attended to by a trained medical doctor and only Clinical Officers and nurses were found at their work stations during the study period.

5. It is recommended that at least one ambulance should be supplied to the district and it be stationed at a central facility where it can easily coordinate in case maternal emergencies occur.

6. It is recommended that efforts be made by the health providers to ensure patients privacy during ANC and delivery care is kept to improve institutional delivery thus enhancing utilization of a major maternal health care service thus reducing maternal mortality.

5.3.3 Recommendations for Further Research

1. Given the high maternal morbidity and mortality not only in the study area but in Kenya and the region, it is prudent for researchers to understand the why with regard to the persistency of the problem and the how best can governments and the civil society mitigate the problem.

2. It is recommended that further research be carried out to establish why is it that women who profess Islam make the required (four and more) number of ANC visits but rarely have Institutional delivery service utilization.
3. More research is also needed to bring out the rural urban differential in not only maternal health care utilization but the differential factors with significance influence on ANC visits and institutional delivery.

4. Further research is also prudent to focus on other determinants of maternal health care utilization not considered in this study. Understanding the multiplicity of factors with an influence on maternal health care utilization is key in the development of interventions that will work in reducing maternal morbidity and mortality including that of their infants.
REFERENCES


Appendix 1: Consent Form

CONSENT FORM

PART 1: INFORMATION SHEET

I am Stanley Wechuli Wanjala a postgraduate student at Pwani University registration number C50/PUC/2098/11 and E-mail address: (stanleywanjala@gmail.com) supervised by Professor Halimu Suleiman Shauri- E-mail address hshauri@yahoo.com. I am carrying out a research titled “Determinants of Maternal Health care Utilization in Ganze District, Kilifi County of Kenya.” I am going to give you information about all what the research entails and invite you to be part of this research as a respondent. If you have any questions later, you can ask.

Purpose of research

Maternal and child health are key health issues in the world. The reason I am doing this research is to find out the factors that affect utilization of maternal health care services and to establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care utilization in Ganze district. By so doing, I will be able to advice the government and other health stakeholders on best practices in maternal health and help in policy formulation.

The reason why I am inviting you to be a respondent is because I am inviting all women between the ages of 18-49 years to participate in this research. Your participation in this research is entirely voluntary- It is your choice whether to participate or not.

The information that you give during this research will be kept confidential. Information about you that will be collected during the research will be put away and no one but the researcher (I) will be able to see it. Any information on you will have a number on it instead of your name for confidentiality purposes. You can ask any questions regarding the study or your participation in this study.

PART 2: CERTIFICATE OF CONSENT

I have read the foregoing information or it has been read to me. I have had the opportunity to ask questions about it and any questions that have been asked have been answered to my satisfaction.

I consent voluntarily to participate as a respondent in this research.

Name of participant: __________________________________________________________

Signature of participant: ______________________________________________________

Date: ______________________________________________________________________
Appendix 2: Interview Schedule

DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN GANZE DISTRICT, KILIFI COUNTY OF KENYA

INTERVIEW SCHEDULE

Dear respondent,
Please answer the questions to the best of your understanding. Your cooperation in this study is highly appreciated and all the information you provide will be treated with utmost confidentiality. Thank you for your cooperation.

Name of Health Facility: __________________________

Category of Facility: [ ] Dispensary [ ] Health Centre [ ] Sub-District Hospital [ ] District Hospital

Ownership: [ ] Government [ ] Private for Profit [ ] Faith Based [ ] NGO/CBO

Division: _________________________________________

Location: _________________________________________

Sub-Location: _________________________________________

PART I: SOCIO - DEMOGRAPHIC CHARACTERISTICS

Q1. Could you please tell me your age?
   a) 18-22 years [ ]
   b) 23-27 years [ ]
   c) 28-32 years [ ]
   d) 33-37 years [ ]
   e) 38-42 years [ ]
   f) 43-47 years [ ]
   g) 48-52 years [ ]

Q2. What is your marital status?
   a) Single [ ]
   b) Married [ ]
   c) Divorced [ ]
   d) Widowed [ ]
   e) Separated [ ]
   f) Other (State)____________________________

Q3. What is your religious affiliation?
   a) Christian (Catholic) [ ]
   b) Christian (Protestant) [ ]
   c) Christian (SDA) [ ]
   d) Jewish [ ]
   e) Muslim [ ]
   f) Hindu [ ]
g) African Traditional Religion

Q4. What is your level of education?
   a) Non Formal Education
   b) Some primary education
   c) Primary school Completed
   d) Some Secondary education
   e) Secondary school completed
   f) University (Bachelors)
   g) Other (State) ______________________________________

Q5. If married, or in a stable relationship, could you kindly state your spouse’s level of education?
   a) Non Formal Education
   b) Some primary education
   c) Primary school Completed
   d) Some Secondary education
   e) Secondary school completed
   f) University (Bachelors)
   g) Other (State) ______________________________________

Q6 (a) If have some level of education, have you undergone any formal professional training since completion/dropping out of school?
   a) Yes
   b) No

(b) If Yes State which one(s)
___________________________________________________
___________________________________________________
___________________________________________________
___________________________________________________

Q7. What is your main source of income?
   a) Farming
   b) Government employee
   c) Employment private sector
   d) Employment NGO/CBO
   e) Employment FBO
   f) Small business person
   g) Casual Employee
   h) No source of income at the moment
   i) Other (State) ______________________________________

Q8. What would you consider as the main source of income for your spouse/partner?
   a) Farming
   b) Government employee

1 Traditional Religion include nominal Christian religions such as Akorino, Legio Maria, Roho Msalabwa, Dini ya Msambwa etc
c) Employment private sector

d) Employment NGO/CBO

e) Employment FBO

f) Small business person

g) Casual Employee

h) No source of income at the moment

i) Other (State) ___________________________________________

Q9. What is your average monthly earning from all your sources of income?

a) KShs. 2000 or less

b) KShs. 2001 to 4000

c) KShs. 4001 to 6000

d) 6001 to 8000

e) 8000 to 10,000

f) 10,000 to 12,000

g) 12001 to 14000

h) 14001 to 16000

i) 16000 to 18000

j) 18001 to 20000

k) KShs. 20001 or more (State amount) _____________________________________

Q10. What is the approximate average monthly earnings of your spouse or partner from all the sources?

a) KShs. 2000 or less

b) KShs. 2001 to 4000

c) KShs. 4001 to 6000

d) 6001 to 8000

e) 8000 to 10,000

f) 10,000 to 12,000

g) 12001 to 14000

h) 14001 to 16000

i) 16000 to 18000

j) 18001 to 20000

k) KShs. 20001 or more (State amount) _____________________________________

Q11. (a) How many children do you have in total? (Indicate number by Gender)

Males: _________ Females: _________ Total: _________

(b) Could you kindly indicate their age beginning from the eldest to this one?
Q 12. Who makes the decision for you to seek maternal health care?
   Self [  ]
   Husband [  ]
   Husband and me [  ]
   If other explain___________________________

SECTION B: KNOWLEDGE OF ANC

Q1. How did you first know about ANC?
   Through friends [  ]
   School [  ]
   Hospital [  ]
   Others [  ]
Q2. Are you aware of the services rendered at ANC Clinic?
   Yes [  ]
   No [  ]
Q3. ANC helps detect complications during pregnancy
   Yes [  ]
   No [  ]
Q4. ANC helps reduce maternal mortality and morbidity
   Yes [  ]
   No [  ]

SECTION C: ACCESS TO REPRODUCTIVE HEALTHCARE

Q1. Have you ever delivered any of your children in the hospital?
   Yes [  ]
   No [  ]
Q2. Kindly indicate the place of birth of your children beginning from the first born to the last born. (1=Hospital with the help of a trained health professional; 2=Home with the help of Traditional Birth Attendant; 3= At home alone or with the help of a relative; 4=At the Traditional Birth Attendants special clinic/home; 5= On the way to hospital with the help of a stranger/relative; 6=Other (State))

<table>
<thead>
<tr>
<th>Child number</th>
<th>Place of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<td>7.</td>
<td></td>
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<tr>
<td>8.</td>
<td></td>
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<tr>
<td>9.</td>
<td></td>
</tr>
</tbody>
</table>

Q3. (a) Reflecting back on your first pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one) ________________________________

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

___________________________________________________ ______________________

___________________________________________________ ______________________

___________________________________________________ ______________________

(c) How many visits did you make to the ante natal clinic before the delivery of your first born child?

(d) How many visits did you make to the post natal clinic after the delivery of your first born child?

Q4. (a) Reflecting back on your last pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

___________________________________________________ ______________________

___________________________________________________ ______________________

____
(c) How many visits did you make to the ante natal clinic before your latest delivery?
___________________________________________________ _________________

(c) How many visits did you make to the post natal clinic after your latest delivery?
___________________________________________________ ________________

Q5. How far is the nearest clinic offering maternal health services? (How long does it take for an adult to walk to the facility?) NB: one Kilometre may require 15 minutes of walk.
___________________________________________________ ______________________

Q6. In your view, is the distance to the facility a concern? (Explain your answer)
  Yes [  ] 
  No [  ]
Reason:
___________________________________________________ ______________________

Q7. In your view, is the attitude of the health care providers a concern? (Explain your answer)
  Yes [  ] 
  No [  ]
Reason:
___________________________________________________ ______________________

Q8. In your view, does your religion influence how you seek ANC services? (Explain your answer)
  Yes [  ] 
  No [  ]
Reason:
___________________________________________________ ______________________

Q9. When visiting the nearest health facility during your pregnancy clinic appointments, what was the predominant means of transport used? (Probe for cost and duration in minutes to facility)

<table>
<thead>
<tr>
<th>Means</th>
<th>Tick one used</th>
<th>Cost (KShs.)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Motorcycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bicycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Own/family Motorcycle
5. Own/family bicycle
6. Private car/vehicle
7. Public Service vehicle
8. Other (State) ______________

Q10. In the facility you visited (for those who did not visit, the nearest healthcare facility), what maternal healthcare services does that facility offer? (Kindly indicate whether those attending received the services)

<table>
<thead>
<tr>
<th>Service</th>
<th>Availability</th>
<th>Received service in last pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
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<tr>
<td>Blood pressure taken</td>
<td></td>
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<tr>
<td>Iron supplementation</td>
<td></td>
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<tr>
<td>Urine test</td>
<td></td>
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<tr>
<td>Stool test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasound services</td>
<td></td>
<td></td>
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<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
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<tr>
<td>Provision of PMTCT</td>
<td></td>
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<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11. During your last visit to the maternal health care facility, did you receive information on the following services?

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foetal abnormality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your health status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q12.(i) are you aware of family planning methods?
a) Yes [ ]
b) No [ ]

(ii) Have you ever used any family planning method?
   a) Yes [ ]
   b) No [ ]

(iii) If YES which method have you used? (Probe whether he is currently using the method)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Ever Used</th>
<th>Currently Using</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pills (Postinor 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.IUD (intrauterine device)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.Injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.Norplant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.Condoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.Sexual Abstinence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.Breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.Tubal ligation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.Calendar/safe days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13. (i) Have you ever stopped using any of the family planning methods at any one time?
   Yes [ ]
   No [ ]

(ii) If you have ever stopped, kindly provide reason for your decision

___________________________________________________ ______________________
___________________________________________________ ______________________

Q14 Are you aware of any taboos related to child birth in your community?
   Yes [ ]
   No [ ]

If yes, list them

___________________________________________________ ______________________
___________________________________________________ ______________________

b) Do you believe in these taboos?
   Yes [ ]
   No [ ]

If yes, which taboos do you believe in?

_______________________________________________________________________

___________________________________________________ ______________________

___________________________________________________ ______________________
Perceptions: Maternal and Child health practices

Q1. When visiting the nearest health facility during your pregnancy clinic appointments, how many minutes did you wait before the healthcare provider attended to you?

___________________________________________________

Q2. Are you happy with the time you spent with the health care provider during your appointments?

Yes [ ]
No [ ]

a) If yes, why?

___________________________________________________

b) If No, would you prefer to have?

A lot more time [ ]
A little more time [ ]
Time is about right [ ]

b) Are you happy with the facility space?

Yes [ ]
No [ ]

Explain___________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

c) Are you happy with the facility neatness?

Yes [ ]
No [ ]

Explain___________________________________________________________________

_____________________________________________________________________

d) Who is your preferred gender of provider?

Male [ ]
Female [ ]
No preference [ ]

Explain___________________________________________________________________

_____________________________________________________________________

e) Who is your preferred type of provider?

Doctor [ ]
Nurse [ ]
Midwife [ ]
Traditional Birth Attendant [ ]
A combination [ ]
No preference [ ]

Explain______________________________________________________________________________

___

f) Would you come back to this facility?
   Yes [ ]
   No [ ]
   Don’t know [ ]
   Give reasons for your answer

___________________________________________________     ______________________

__g) Will you recommend this facility to others?
   Yes [ ]
   No [ ]
   Don’t know [ ]
   Give reasons for your answer

___________________________________________________     ______________________

___

Q3. Are you happy with the privacy that you were accorded during the consultation with the health care provider?
   Yes [ ]
   No [ ]

Q4. How would you rate the following services that you received at the health facility?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of food served</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Reception upon arrival at the health facility</td>
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<tr>
<td>Attitude of medical personnel</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Availability of equipments/facilities</td>
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</tbody>
</table>

Q5. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your first visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
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<tr>
<td>Availability of equipments/facilities</td>
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<td></td>
</tr>
<tr>
<td>Service</td>
<td>Very good (1)</td>
<td>Good (2)</td>
<td>Fair (3)</td>
<td>Poor (4)</td>
<td>Very poor (5)</td>
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<td>Palpation of the abdomen</td>
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<td>Tetanus vaccination</td>
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<td>Height taken</td>
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<td>Blood pressure taken</td>
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<td>Iron supplementation</td>
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<td>Stool test</td>
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<td>Anti-malarial treatment</td>
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<td>Health talk</td>
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<td>C-Section Deliveries</td>
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<td>Provision of treated bed nets</td>
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<td>Counselling on family planning options</td>
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Q6. If you were given another option (healthcare facility) in your first visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain__________________________________________________________

Q7. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your last visit?

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<th>Good (2)</th>
<th>Fair (3)</th>
<th>Poor (4)</th>
<th>Very poor (5)</th>
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<td>Anti-malarial treatment</td>
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Q8. If you were given another option (healthcare facility) in your last visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain____________________________________________________________________________________

Q9. Any additional comments
_________________________________________________________________________________________
_________________________________________________________________________________________
_________________________________________________________________________________________

Thank you for your cooperation.
Appendix 3: Certificate of Ethical Approval

ETHICS REVIEW COMMITTEE
ACCREDITED BY THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY
AND INNOVATION (NACOSTI, KENYA)

CERTIFICATE OF
ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:
Mr. Stanley Wechuli Wanjala

REFERENCE NO:
ERC/MA/003/2014

ENTITLED:
Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya

TO BE UNDERTAKEN AT:
Ganze, Kilifi, Kenya

FOR THE PROPOSED PERIOD OF RESEARCH
HAS BEEN APPROVED BY THE ETHICS REVIEW COMMITTEE
AT ITS SITTING HELD AT PWANI UNIVERSITY, KENYA
ON THE 15TH DAY OF JANUARY 2014

CHAIRMAN

SECRETARY

LAY MEMBER
Appendix 4: Graduate School Research Authorization

Pwani UNIVERSITY
SCHOOL OF GRADUATE STUDIES
P.O. Box 195 - 80100
KILIFI, KENYA

Ref: PU/SGS/PRAL/83/vol.1
16th January, 2014

Mr. Stanley W. Wanjala
School of Humanities and Social Sciences
PWANI UNIVERSITY

SUBJECT: RESEARCH AUTHORIZATION

Following approval of your Masters research proposal by the Ethics Review Committee on 15th January, 2014, we hereby write to formally grant authorization for you to conduct research for a Master's thesis entitled "Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya."

You are advised to collect your original Certificate of Ethical Approval from the Ethics Review Committee office.

We wish you all the best as you embark on this critical stage of your Masters programme.

Yours faithfully,

Prof. Mlewa C. Mwatebe
DEAN, SCHOOL OF GRADUATE STUDIES,
Cc
✓ Deputy Vice Chancellor (ASA)
✓ Dean, School of Humanities and Social Sciences
✓ Chairman, Social Sciences
Appendix 5: Research Authorization from Department of Health

COUNTY GOVERNMENT OF KILIFI
DEPARTMENT OF HEALTH
KILIFI COUNTY HOSPITAL

Telephone (041) 7522777
Fax: (041) 7522025
Email: kdh@kamri-wellcome.org
When Replying/Telephoning quote
Ref No.: ST.1/38/VOL.1/

OFFICE OF THE MEDICAL
SUPERINTENDENT
KILIFI COUNTY HOSPITAL
P. O. Box 9 - 80108
KILIFI
DATE: 31st March, 2014

Stanley Wechuli Wanjala
Pwani University
PO Box 195-80108
Kilifi County,
KENYA

Dear Mr Stanley. W. Wanjala,

RE: AUTHORIZATION TO CARRY OUT STUDY IN GANZE

The research committee of health Kilifi has received your request to carry out a study on
"Determinants of Maternal Care Service Utilization in Ganze District, Kilifi County of Kenya".

After going through the proposal, we grant you approval to proceed with your research. This
should not exceed a time period of 90 days. Please note you can always ask for an extension,
should you need it.

Upon completion of the study, you will be required to share your results with the County Health
Management Team.

Good luck!

Dr Barbara Mambo, Chairperson
Kilifi County Research Coordination Committee
KILIFI

Cc:
The Executive Secretary of Health- KILIFI COUNTY
The Director of Health Services- KILIFI COUNTY
Appendix 6: Map of Ganze District
DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN
GANZE DISTRICT, KILIFI COUNTY OF KENYA

STANLEY WECHULI WANJALA

C50/PUC/2098/11

A thesis submitted in partial fulfilment of the requirements for the Degree of Master
of Arts of Pwani University

© August, 2015
DECLARATION

Declaration by the Student

This thesis is my original work and has not been presented for a degree in any other University or any other award.

Signature: ........................................ Date: ........................................

Stanley Wechuli Wanjala
C50/PUC/2098/2011

Declaration by the Supervisors

We confirm that the work reported in this thesis was carried out by the candidate under our supervision. No part of this Thesis may be reproduced without the prior written permission of the author and/or Pwani University.

Signature: ........................................ Date: ........................................

Prof. Halimu Suleiman Shauri; PhD
Sociologist; Department of Social Sciences
(Pwani University)

Signature: ........................................ Date: ........................................

Dr. Francis Wokabi; PhD
Philosopher; Department of Philosophy and Religious Studies
(Pwani University)
DEDICATION

This thesis is dedicated to the pillars of my life: God, my adoring parents who remain my source of inspiration, my siblings and fiancée.
ACKNOWLEDGEMENT

First, my heartfelt gratitude to my supervisors: Prof. Dr. Halimu Suleiman Shauri and Dr. Francis Gikonyo Wokabi. Thank you for your sage advice, guidance, encouragement and intellectual input from the initial to the final stage of this thesis development that enabled me to have an in-depth understanding of the subject under study. To my parents, thanks for the never ending love and unwavering support. My fiancée Yvonne Kuhnke, thanks for your unconditional love, encouragement and understanding even on days that you could not get my full attention. My colleague Bonventure Obeka, your constructive and insightful criticism, collaboration and willingness to assist when called upon have been tremendous assets. My colleagues and lecturers in the Department of Social Sciences, study respondents and medical staff from health facilities in Ganze District, thank you for making the study possible.
Maternal health care service utilization is an important health issue related to both maternal and child survival as it reduces maternal mortality and morbidity as well as improving the well being of mothers and their children before, during and after birth. Considering low utilization of maternal health care service especially in Sub-Saharan Africa, understanding what determines utilization becomes important. This study set out to examine determinants of maternal health care service utilization by women of reproductive ages (18-49 years) with a view to enhancing the achievement of Millennium Development Goal (MDG) number five (5). Four dependent variables: place of delivery, antenatal care, skilled attendance at birth and trimester women attended Antenatal Clinic (ANC) as well as six independent variables representing predisposing characteristics (mothers age at birth, marital status, religion, educational attainment, parity) and enabling factors (husbands educational attainment, income levels) were selected. Survey research design was used in data collection and the main data collection tool was an interview schedule. Multi-stage cluster sampling was used in sampling the health care facilities and convenient sampling was used to sample the respondents. Both descriptive and inferential statistics such as logistic regression analysis were applied to the analysis of the collected data. The key findings of the study show that religion, parity and maternal education were significant predictors of women’s place of delivery. Further, maternal age, marital status, and parity were found to be significantly associated with the number of ANC visits women make to the clinic. Marital status, religion and parity are all related to use of a skilled Birth Attendant at birth. Parity emerged to be the strongest predictor among all the other indicators of maternal health care service utilization considered in the study. In conclusion, the study was able to find out factors that affect utilization of maternal health care services in Ganze district thus achieving the study objective. Strategies to promote the utilization of Maternal Health Care Services should thus focus on the relevant predictors established in the models based on the binomial regression analyses. The findings of the study may help the Ministry of Health, policy makers and health related agencies and stakeholders to design appropriate and cost-effective intervention programmes targeting areas with most needs. This may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality while enhancing reproductive health and resource efficiency. Lastly, this study aims at stimulating further research in this area, thus bridging knowledge gaps and updating scientific knowledge on this important topic.
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List of Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

ATR – African Traditional Religion

ANC – Antenatal Care

CBS – Central Bureau of Statistics

ERC – Ethical Review Committee

FBO – Faith Based Organization

GDP – Gross Domestic Product

GoK- Government of Kenya

HBM - Health Belief Model

HIV – Human Immunodeficiency Virus

KDHS – Kenya Demographic and Health Survey

KHHEUS – Kenya Household Expenditure and Utilization Survey

KNBS – Kenya National Bureau of Statistics

KNHA- Kenya National Health Accounts

MDG’s – Millennium Development Goals

MHCS – Maternal Healthcare Services

MLR – Multivariate Logistic Regression
MoH – Ministry of Health

NACOSTI – National Commission for Science, Technology and Innovation

NCAPD - National Coordinating Agency for Population and Development

NGO – Non-Governmental Organization

OBA- Output Based Approach

PHC- Primary Health Care

PNC – Postnatal Care

POD – Place of Delivery

SBA – Skilled Birth Attendant

SDC – Social Demographic Characteristics

SMI – Safe Motherhood Initiative

SPSS – Statistical Package for Social Sciences

TBA – Traditional Birth Attendant

TI- Transparency International

UN – United Nations

UNFPA – United Nations Fund for Population Activities

UNICEF – United Nations International Children’s Emergency Fund
WB – World Bank

WHO – World Health Organization
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Three out of the eight Millennium Development Goals (MDG’s) relate to health. Goal number four is aimed at reducing child mortality rates, goal number six focuses on combating HIV/AIDS, malaria and other diseases and goal number five, which is the focus of this study, is aimed at improving maternal health by reducing maternal mortality by three quarters (75%) and achieving universal access to reproductive health between 1990 and 2015. This goal is monitored by two indices namely: maternal mortality ratio and proportion of births attended by skilled health personnel.

Globally, in the year 2008, there were an estimated 358,000 maternal deaths and of this, the developing world accounted for (355,000) or 99% (WHO, UNICEF, UNFPA, & The World Bank, 2010). These figures have financial implications for the health sector of affected countries. On the one hand, high income countries with high standards of living spend an average of 7.0% of Gross Domestic Product (GDP) on health and on the other hand, low income countries, with low standards of living, spend an average of only 4.2% on the health sector (Cieza & Holm, 2010). Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit, Dolea, & Braichet, 2010).

In the year 2000, 251,000 maternal deaths occurred in Africa and 40% of the deliveries were attended by a Skilled Birth Attendant (World Health Organization, 2005). Sub-
Saharan Africa accounted for slightly more than half (270,000) of the maternal deaths in 2005. An increase in maternal deaths over the years can be observed. Nearly three fifths (204,000) of the maternal deaths in 2008 occurred in the sub-Saharan Africa (WHO et al., 2010). Though there is a slight drop in maternal mortality rates from 2005-2008, the number is still high.

Kenya is one of the countries that suffered 65% of maternal deaths in 2008. It accounted for 7,900 (2.2%) of the global maternal deaths (WHO et al., 2010). According to the 2008-09 Kenya Demographic and Health Survey (KDHS) maternal mortality in Kenya remains high at 7.9% as only 44% of births are managed by health professionals and 43% are delivered in health facilities. These statistics clearly show that over half (56%) of deliveries are done by non-professionals and more than half (57%) of deliveries are done outside healthcare facilities. Between the periods 2003 – 2008/09, there was a rise in maternal mortality rates in Kenya from 0.6% to 0.8%, indicating an increase of 0.2% (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). This is not a good indication especially that MDG number five aims at improving maternal health care.

According to an official in the Ministry of Public Health, (Masha Joseph, 2011), quoted in the Standard Newspaper of Wednesday 11th May 2011, only 44% of deliveries in the Coastal Region are done in hospitals with many pregnant women relying on Traditional Birth Attendants (TBAs), while about 70% of 170,000 women still give birth at home. The Kilifi District Strategic Plan 2005-2010 points out that accessibility of health services was low and over half (57%) of the population lived over five kilometres to the nearest health facility (National Coordinating Agency for Population and Development, 2005). It is
against this background that a study of the determinants of maternal health care utilization in Ganze district in Kilifi County, Coastal Region of Kenya was mooted.

1.2 Statement of the Problem

The MDG’s are fresh in our minds and we have approached 2015. Millennium Development Goal number five, in particular, was aimed at reducing maternal mortality rate by 75.0% between 1990 and 2015 and to achieve universal access to reproductive health. The fact that the KDHS 2008-2009 reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities is a clear indication that there is underutilization of maternal health care professionals and facilities in the country, especially in the rural areas. What determines maternal health utilization therefore needs to be understood to improve this situation with a view of achieving MDG number five. In fact, it is very clear throughout the literature reviewed that there is a dearth of recent data on the determinants of maternal health care utilization. This is despite the fact that maternal healthcare services utilization is essential for the enhancement of maternal and child health. Accordingly, little was known about the current magnitude of use and factors influencing the use of maternal healthcare services, especially in Ganze district where the study was conducted. This study therefore examined the factors that determined the utilization of maternal health care service in Ganze district in Kilifi County, Coastal Region of Kenya.

1.3 Purpose of the Study

The purpose of the study was to examine factors that influence maternal health care service utilization by women of reproductive ages (18-49 years) with a view of enhancing the
achievement of MDG number five (5).

1.4 Specific Objectives

On the basis of the study’s purpose, the objective of the study was to:

1. Find out the influence of socio-economic and demographic factors on utilization of maternal health care services.

2. Establish the facility-specific factors that influence the utilization of maternal health care services in Ganze district.

3. Establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care service utilization in Ganze district.

1.5 Research Questions

1. What is the influence of socio-economic and demographic factors on utilization of maternal health care services?

2. Why are some healthcare facilities utilized more than others by women of reproductive ages (18-49 years) seeking maternal health care services?

3. What is the influence of the preferences and perceptions of women of reproductive ages (18-49) with regard to ANC services offered at the healthcare facilities in Ganze district on maternal health care utilization?

1.6 Significance of the Study

The results of this study could be beneficial as it was envisaged to add to the existing body
of scientific knowledge on the factors that influence maternal health care service utilization and the challenges that women face as they seek maternal health care services. This may act as a springboard for further research in this area and thus bridge knowledge gaps and update scientific knowledge on this important topic.

To the government, Ministry of Health as well as other health providers, findings of this research may help them work towards policy and practical improvements in provision of maternal health care services thus reducing the number of maternal deaths consequently contributing to the attainment of MDG number 5.

Third, this research may help the government and other key health care stakeholders avoid wastage of resources because they will be able to know the determinants of maternal health care service utilization. Accordingly, appropriate and cost-effective intervention programmes can be designed and targeted to the areas with most needs. Significantly, this may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality and enhancement of reproductive health with desirable consequences on the health status of women and the population.

1.7 Scope and Limitations of the Study

1.7.1 Scope of the Study

The study was carried out in Ganze District of Kilifi County in the Coastal Region of Kenya.
1.7.2 Limitations of the Study

This was a survey research and as such attempted to understand study variables at one point in time. Accordingly, the study was limited in explaining causality and trends over time than a longitudinal or control group design on the determinants of maternal health care services utilization.

Due to ethical and legal considerations, the study only focused on women aged (18-49 years). Thus, the study was limited in that the views of women below the age of 18 years and above 49 years were not included in the study and thus research results cannot be generalized outside of the sampled population of women aged (18-49) years old.

The study was limited in that the researcher had to employ the services of an interpreter because some of the study respondents did not understand English and so interviews were conducted in either Kiswahili or Kigiryama.

1.8 Definition of Key Concepts used in the Study

**Antenatal care:** Care given to a pregnant woman from the time of conception to the onset of labour

**Distance:** The location of the health care facility in relation to the patient’s place of residence

**Grandmultiparae:** A woman who has given birth to five or more children

**Maternal Morbidity:** Is defined as “chronic and persistent ill-health occurring as a consequence of complications of pregnancy and child birth” (Ogunjuyigbe & Liasu, n.d.)
Maternal Mortality or Maternal Death: Is “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes” (“WHO | Maternal mortality ratio (per 100 000 live births),” n.d.)

Multiparae: A woman who has given birth to two or more children

Nulliparae: A woman who has never given birth to a child

Parity: Birth order in a nuclear family

Postnatal care: Care provided following childbirth to both the mother and the infant

Primiparae: A woman who has given birth to only one child

Providers: Health staff at the selected Maternal and Child Health (MCH) facilities serving in ANC at the time of the study and those who were available for interview

Skilled Birth Attendant: Is “an accredited health professional- such as a mid-wife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborns)” (World Health Organization, 2004b).

Skilled Birth Attendance: Process by which a pregnant woman and her baby are provided with adequate care during pregnancy, labour, birth and postpartum and immediate newborn periods (Graham et al., 2001).
Trimester: “One of the three divisions of three months each during pregnancy, in which different phases of foetal development take place” (“Trimester definition - MedicineNet - Health and Medical Information Produced by Doctors,” n.d.)

Utilization of maternal health care services: Utilization of maternal health care services in this study was described in relation to the requirements by World Health Organization (1994; 2004) which only considers it medically satisfactory when:

- Women receive antenatal care during the first trimester of their pregnancy period
- Women undertake 4 or more antenatal visits before delivery of their children
- Women are attended to at delivery by trained medical personnel/practitioner
- Women deliver in a health facility

Waiting time: The duration of time (minutes) a mother has to wait before he/she is attended to by a medical professional
CHAPTER TWO: LITERATURE REVIEW

2.1 Utilization of Health Care Services

Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems, or achieving a positive body image (Cockerham, 2012). In this discourse, health care utilization refers to the use of health care services by people (Awoyemi, Obayelu, & Opaluwa, 2011). Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries (Mekonnen & Mekonnen, 2002). Thus, in order for an individual to utilize health services, they must have both physical access to a health facility and the health facility must also be able to provide the required services; the patient must also be able to pay for the health care services offered either through cash or by use of health insurance or any third party means (Shauri, 2010).

The 2005/2006 Kenya National Health Accounts (KNHA) report notes that the top two “key challenges to achieving better health status in Kenya” are “inequitable access to health services” and “shortage of qualified health workers, especially those with appropriate skills” (Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009). Access to care has most often been considered as an expression of the time or monetary costs associated with obtaining medical care, such as waiting time to get an appointment or to see a doctor or medical practitioners once in their offices, and distance one has to cover (Aday & Andersen, 1977).
Some researchers place emphasis on the idea that access as a concept is best considered in the context of whether the people actually in need of health care receive it or not (Taylor et al., 1975). People should try to distinguish between access and availability. The latter is the presence of health care resources in a given locality/area. Even though information on the number of physicians in an area may be available, we may still not know the accessibility of such health care providers in terms of the patients ability to pay the fees they are charged, the lack of transportation or traffic congestion typical of the place, the barriers resulting from ethnic discrimination, or office hours that cannot accommodate the patient's own needs or schedules (Aday & Andersen, 1977).

Utilization of health services is a complex behavioural phenomenon, related to the availability, quality and cost of services, social structure, health beliefs and characteristics of the users (Chakraborty, Ataharasul, Chowdhury, Bari, & Akhter, 2003; Ebuehi et al., 2006). More critical for this study, women’s utilization of maternal health care facilities is an important health issue with regard to the well being and survival of both the mother and the child during pregnancy, child birth and postpartum period and has implications on the maternal and child mortality rates in human society (Gazali et al., 2012; WHO, 2012).

In February 1987, three international organizations namely: United Nations Fund for Population Activities (UNFPA), the World Bank (WB), and World Health Organization (WHO) sponsored a global campaign in Nairobi in form of a conference to reduce maternal mortality. As a consequence, the Safe Motherhood Initiative (SMI) was adopted to reduce the high rate of women dying during pregnancy and childbirth. The event was
aimed at raising awareness about the numbers of women dying each year from complications of pregnancy and childbirth (Starrs, 2006).

The SMI recommended that all countries provide three types of maternity care services which are vital for all expectant women namely prenatal care, delivery care, and postnatal care (United Nations, 2000a). Prenatal care services include encouraging a woman with a normal pregnancy to make at least four visits to a skilled health attendant during her pregnancy (with more visits by women with pregnancy complications), and promoting information about maternal nutrition and iron supplements to reduce anaemia, underweight and under-nutrition among pregnant women and new mothers. To provide delivery care during childbirth, all member countries were recommended to promote deliveries in health facilities and to promote the attendance of skilled health personnel including a doctor and/or person(s) with midwifery skills who can diagnose and manage obstetrical complications as well as normal delivery (Pandey et al., 2011; Cohen, 1987).

More significantly to note in this thesis is that, while motherhood is often a positive and fulfilling experience, for many women it is associated with suffering, ill-health and sometimes even death (WHO, 2012). It is thus imperative that ways to mitigate factors responsible for low utilization of maternal services be developed. However, the development of effective strategies to curb maternal deaths hinges on the identification of factors responsible for low utilization of such services underscoring the need for the present research. Furthermore, even though such studies have been carried out in Kenya, no such study has been conducted so far in Ganze district.
2.2 Status of Health Care Utilization in the World

Although utilization is an important indicator of health seeking behaviour, health status, cost and quality of services, it is not necessarily guaranteed by the availability of health care facilities (Wamai, 2009). A report carried out by the World Health Organization (2010) in 39 countries reveals that in more than half of the 27 out of the 39 countries, utilization of health care facilities was only at public facilities and was skewed towards outpatient services. More so, in the Dominican Republic, Brazil, Nepal and the Philippines between 50-60% of hospitalizations were in public health care facilities (Saskena, Xu, Eloainio, & Perrot, 2010).

Health conditions are different for urban and rural areas. Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit et al., 2010). Indeed, a study carried out in Ethiopia shows that the coverage of maternity care services is very low and that utilization of maternal health care services is lowest in rural areas (Mekonnen & Mekonnen, 2002).

According to the findings of a study carried out in rural Zimbabwe on socio-economic status and health care utilization, all forms of health care tended to be utilized by those of high or medium-high socio-economic status rated (65%) of the study subjects. This clearly indicates that the socio-economic status of an individual affects his/her health care utilization behaviour. The report further shows that seventy-one (71%) percent of respondents utilizing health services were employed by the government, private sector (72%), the church (71%), Community Based Organizations (78%) and others (64%).
Health services tended to be utilized more by employed respondents. Only traditional health services were equally utilized by unemployed respondents accounting for 50% of the users (Kevany et al., 2012).

In Kenya, there is uneven distribution of health care facilities across the country’s eight regions. The central region has about double the number of facilities per population as compared to Nyanza and Western regions (Wamai, 2009). Health care utilization varies greatly across all the eight regions of the country. More precisely, North Eastern records the lowest health care utilization rate, with 63.4% of all those who reported being ill never seeking treatment in the health care facilities, which leaves only 36.6% seeking treatment whereas Nairobi region, which is the capital city of Kenya, having the highest rate (90.6%) of utilization.

According to the 2003 Kenya Household Expenditure and Utilization Survey (KHHEUS), of all those people reporting illness, 77.2% sought health care service thus leaving 22.8% not seeking health care service. It also shows an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people which translates to an annual utilization rate of 1.92 visits per person per year (Republic of Kenya, 2004).

It is important to mention that the urban population has a higher likelihood of visiting a health care facility (81.5%) when ill as compared to their rural counterparts (75.9%) despite the fact that the average cost for outpatient utilization in urban areas is twice that of rural areas (Republic of Kenya, 2004). Despite this scenario, people in the rural areas still don’t seek health care services very often. This indicates that cost still remains a barrier to utilization of health care facilities and services as health care costs (44%) and the long
distance to the health facility (18%) were cited as the main barriers to health care utilization by those who reported being ill (Republic of Kenya, 2004).

Females reportedly make 1.2 times as many outpatient visits per capita (2.1 visits per year) as did their male counterparts (1.7). Government facilities are utilized more for outpatient services accounting for 51% of the visits, private and mission facilities account for 27% and 8% of the visits respectively, while traditional healers account for a negligible proportion of services (1%). This disparity might be as a result of the distance one has to travel and the cost of seeking health care in the various facilities available (Republic of Kenya, 2004).

Some health facilities at the rural level lack essential resources and the basic assets available are either insufficient or dilapidated. Furthermore, most rural facilities do not even have wards to admit critically sick patients. Due to poor health infrastructure, patients walk for long distances to reach the available health care facilities. Despite the high demand from the community for health care services, most rural health facilities are still lagging behind in the delivery of services (Transparency International, 2011).

The lack of equipment and other core supplies has negative impacts on the performance of health facilities. Lack of adequate health facilities and poor infrastructure forces people to walk for long distances to seek health care services; leading to some patients resorting to alternative means of treatment. This has the potential of leading to underutilization of available health care facilities (Transparency International, 2011).
According to the Kilifi District Strategic Plan 2005-2010, there were 73 health facilities distributed throughout the district. The plan asserts that accessibility of health services was low and over one half (57%) of the population lived over five kilometres to the nearest health facility. The doctor-patient ratio was 1:100,000 population which is a manifestation of staff shortages in the area (The National Coordinating Agency for Population and Development, 2005).

Ganze district, like most rural areas in Kenya, has poor health service coverage and delivery (Transparency International, 2011). Most trained medical attendants including birth attendants prefer working in urban areas as opposed to rural areas and thus health facilities in rural areas are under-staffed (Epuu, 2010). This study was able to shed some light on the status of the health care system in Ganze District.

2.3 Global Trends in the Utilization of Maternal Health Care Services

Maternal and child health are both indicators to a society’s level of development as well as the performance of the health care delivery system (Central Bureau of Statistics (CBS)[Kenya], Ministry of Health (MOH)[Kenya], & ORC Macro, 2004). A study carried out in Peru on the effects of education on utilization of maternal health care services shows that there is a strong positive relationship between education and the use of maternal health care services (Elo, 1992).

A woman’s autonomy or level of independence in decision making is important in explaining utilization of maternal and child health care services. Urban residence, and
husband’s education have all been found to have a positive relationship to antenatal care utilization (Woldemicael, 2007; Dairo & Owoyokun, 2010).

A cross sectional study in India by (T. R. Jat, Ng, & San Sebastian, 2011) on the factors affecting the use of maternal health services in Madhya Pradesh state found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services. Women in urban areas tended to use maternal health care services more than those living in the rural areas. The levels of skilled attendance at delivery and postnatal care decreased steadily with increased birth order (T. R. Jat et al., 2011). It was also found out that an increase in the education of the mother enhances the use of the three indicators of the use of maternal health services namely prenatal care, delivery care, and postnatal care. Finally, child parity seemed to affect the use of skilled attendance at delivery and postnatal care.

Another study by Mondal (2009) carried out in Bangladesh found out that the level of education (both of the wife and husband) increased the likelihood of seeking help from a qualified medical professional. Women who reside in urban areas had a higher odd of seeking medical assistance than those in rural areas (ibid). Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious taboos. Women from families with a high socio-economic status are more likely to receive treatment from a doctor or nurse.

From the above studies, we can be able to deduce that socio-economic status as indicated by, level of education (both of the wife and husband), place of residence and religion increase the probability that women of reproductive ages will utilize maternal health care
services. Interestingly though, no study has focused on whether the attitude of health care providers towards the patients affects maternal health care utilization. Additionally, no study has focused on the attitude of the health care practitioners towards their work and utilization of maternal healthcare services by pregnant women. It is within the confines of this study therefore to find out whether the attitude of health care providers towards their work and patients determines utilization of maternal health care services.

2.4 Maternal Health Care Utilization in Africa

A study carried out in Ethiopia on the utilization of maternal health care services found out that there was low coverage of maternity service in the country. The place of residence, woman’s education, marital status, religion, parity and number of children under five years were found to have an important influence on utilization of maternal health services by women of reproductive ages. There was high level of utilization of maternal health services among urban women compared with their rural counterparts (Mekonnen & Mekonnen, 2002).

Additionally, married women were observed to be more likely to use antenatal care than their unmarried counterparts. Religion was also found to be an important predictor of antenatal care utilization. Among urban women, utilization of antenatal care is higher for those with two or more children than for those with one child. On the other hand, utilization of delivery care services is lower for those with two or more children than those with one child (Mekonnen & Mekonnen, 2002).
In another study carried out in Ethiopia on factors influencing the use of maternal health care services, it was found out that education of women determines use of antenatal care in that utilization increased with education level. Religion also affects use of antenatal care in that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs. Marital status and religion also had an impact in determining the use of antenatal care (Mekonnen & Mekonnen, 2003; Mekonnen & Mekonnen 2002).

A qualitative study carried out in rural Gambia on access to emergency obstetric care found out that structural factors in maternal health care provision discourage women from seeking care. For instance, where pre-natal care was provided on specific days in each community during week days, it hinders other people from attending. There may exist difficulties in transportation, such as poor condition of the road, lack of readily available transport, inadequate means of transportation, poor provider attitude towards patients, fear of punishment by health care providers based on previous experiences or just gossip can lead to delays in the decision making process of visiting a health facility by patients (Cham et al., 2005).

A study carried out on the utilization of antenatal care services in a Nigerian teaching hospital found out that over two fifths (47%) of the women started attending antenatal clinic only in the third trimester of the pregnancy period despite the fact that antenatal care services in the state hospital that the study was carried out was offered free of charge (Peltzer & Ajegbomogun, 2005).
In another study conducted in Nigeria, the use of maternal health services was significantly related to the level of maternal education, maternal age and marital status. Higher use was positively related to knowledge of where the Primary Health Care (PHC) service was located. Respondents with more than 4 children underutilized available maternal health services and utilization of maternal health services by respondents was significantly related to satisfaction with quality of services received (Ebuehi et al., 2006). Women’s and husband’s education and place of residence have strong positive associations with health care utilization (Woldemicael, 2007).

In Africa, all the reviewed studies have focused on determinants of maternal health care utilization such as maternal education, religion, parity, marital status and residence. However, limited literature none has focused on whether distance from health care facility has an effect on the utilization of maternal health care services. Few studies have also been carried out to find out the effects of waiting time at the reception by the patients before being attended to and the utilization of the health facility. Thus, this underscores the need for the present study in trying to find out the influence of how far one resides from a health facility and utilization of the health facility and the effect of how long a mother waits before being attended to on the utilization of maternal health care. The study thus sought to know how socio-economic and demographic as well as facility specific factors influence utilization of Maternal Health Care Services (MHCS).

2.5 Utilization of Maternal Health Care Services in Kenya

The 2003 Kenya Demographic and Health Survey indicated that almost 90% of Kenyan women received antenatal care from a medical professional with 18% being attended to by
a doctor, 70% by a nurse or midwife while 10% received no antenatal care at all (Central Bureau of Statistics (CBS)[Kenya] et al., 2004).

In a study carried out in Kenya by Fotso et al., (2009), it was found out that women’s overall autonomy is insignificant in health seeking behaviour. Further, women with at least secondary education were more likely to deliver in a health facility in general or in an appropriate health facility compared to those with no education. The likelihood of delivering at a health facility in general and in the well equipped facilities in particular significantly decreases as parity increases.

Another study carried out using data from the 2003 KDHS found out that young women mostly used skilled professional assistance during delivery. Rural women were less likely to deliver with the assistance of either a Traditional Birth Attendant (TBA) or skilled professional. Women from rich households were more likely to deliver with a TBA or skilled professional. Educated women were more likely to deliver with assistance of skilled professionals as opposed to non-educated. Women with more than 2 children were less likely to deliver with the assistance of TBA or skilled professionals compared to those with 1 child (Ochako et al., 2011).

According to a study carried out in Nyanza region of Kenya, it was found out that the higher the parity, the greater the chances of a mother delivering at home. Conversely, health facility deliveries were greatest among births to lower parity women. A person’s level of education affects how a person utilizes the health facility. Rural residence is associated with higher likelihood of home deliveries where 63% of births occur at home. However, those residing in urban areas had a higher chance of health institution delivery.
with 78% births delivered in health care facilities. Lower economic status at home, medium and high economic status health institution, older mothers’ and young health institution also affects place of delivery with high chance of mothers delivering at home. In a nutshell, the study found out that the place of delivery is affected by parity, level of education, place or residence, economic status and age of the mother (Owino, n.d.).

From the reviewed literature, most studies globally, in Africa and Kenya have focused on the determinants of maternal health care utilization such as education, religion, parity and age but a limited number of studies have been carried out in Ganze district which is the study area. This therefore underscores the need for the present research which seeks to establish the determinants of maternal health care utilization in Ganze district in the Coastal Region of Kenya.

2.6 Summary of Research Literature on Maternal Health Care Utilization

In as much as most reviewed studies have focused on the determinants of maternal health care utilization and inform us of the effects of maternal education, religion, parity, marital status and place of residence on maternal health care service utilization, no such focus is evident in the literature on the rural district of Ganze. This underscores the need for the present research in trying to establish the factors associated with maternal health care utilization in Ganze.

Furthermore, all studies that have been reviewed in this work only concentrate on socio-demographic factors such as maternal education, religion, parity, marital status and place of residence on maternal health care service utilization but there is less focus on the effects of
the attitude of health care practitioners on the utilization of maternal health care services. Accordingly, the study attempted to find out the effects of the attitude of health care practitioners and utilization of maternal health care services. More so, limited attention was paid to whether the distance of a health care facility from a patient’s residence affects their utilization of maternal health care services. This study sought to fill this important gap in knowledge.

It is proper to note that limited focus was also given to the effect of waiting time before one was attended to by a medical practitioner in hospital and the utilization of maternal health care facility. The present study went a step further in trying to find out whether the amount of time one has to wait before being attended to by medical personnel has an impact on the utilization of maternal health care services.

At another level, some studies have dealt with challenges faced by expectant mothers as they seek maternal health care services but none enumerates the coping strategies these women use to respond to the challenges. For instance, a qualitative study carried out in rural Gambia found out that structural factors in maternal health care provision discourage women from seeking care (Cham et al., 2005). Despite these challenges that have been enumerated, we are not told what coping strategies these women use to address such challenges.

Finally, it is proper to also note that almost all the literature reviewed has focused on the socio-economic factors that affect maternal health care utilization overlooking facility specific factors, perceptions and preferences of women of child bearing ages that may also affect maternal health care utilization. The study sought to establish facility specific factors,
perceptions and preferences of women that affect maternal health care utilization with an aim of making recommendations to improve the state of maternal and child health in the study area.

2.7 Theoretical Framework

This study was understood and conducted within the framework of Symbolic Interactionism. Symbolic Interactionism is a micro level theoretical approach that focuses on social interactions in specific situations. It has roots in the thinking of Max Weber (1864-1920), a German Sociologist and George Herbert Mead who emphasized understanding a particular setting from the point of view of the people in it (Giddens & Sutton, 2009).

The core principles of social interaction theory include meaning, language and thought. Meaning arises in the process of interaction between people and are handled in and modified through an interpretive process used by the person in dealing with things he/she encounters. Language is the vehicle through which meanings that arise out of our thoughts are transported in social interactions.

This theory was helpful in trying to understand the meanings that people attach to certain symbols so that they seek maternal health care services. The interpretation that people derive from the symbols and maternal health care utilization enabled the researcher to come up with strategies to improve maternal health care utilization and thus reduce maternal and child mortality. In looking at the factors that influence maternal health care utilization, the
researcher adopted the Health Belief Model (HBM) embedded within the larger purview of Symbolic Interactionism perspective.

2.7.1 Symbolic Interactionism and Illness Behaviour

Illness is social and exploring the meanings that patients give to symptoms and illness becomes important. Patients are the first to recognise their illness and to decide to visit a medical practitioner, who then takes a medical history. Patients describe illness on what society teaches them and this affects the diagnosis (Laurence & Barbara G, 2007).

For this study, it was assumed that women of reproductive ages (18-49 years) must be able to draw meanings from the symptoms and attach meanings to those symptoms in order for them to be able to utilize the available maternal health care services. Borrowing from the symbolic interactionist perspective and because illness is social, the study tried to explain maternal health care utilization using the HBM.

2.7.2 The Health Belief Model

The model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions; these include susceptibility, seriousness, benefits and barriers to behaviour and cues to action (Glanz et al., 2008). The HBM suggests that preventive action taken by an individual to avoid a disease is due to the perception that they are susceptible and the occurrence of the disease would have some severe personal implications (Cockerham, 2012). Thus, women may only seek maternal health care services if they deem that the pregnancy they are carrying may have a likelihood of affecting them.
HBM makes an assumption that by taking a particular action, susceptibility (likelihood) would be reduced. However, the perception of the threat posed by disease is affected by modifying factors which are demographic, socio-psychological and structural variables that can influence both perception and the corresponding cues necessary to instigate action (Cockerham, 2012).

Action cues are required because while an individual may perceive that a given action will be effective in reducing the threat of disease, the action may not be taken if it is further defined as too expensive, too unpleasant or painful, too inconvenient, or perhaps too traumatic (Cockerham, 2012). The women may seek for health care because by so doing they feel that they have reduced the likelihood of them experiencing difficulties during the entire period of pregnancy.

The likelihood of action involves a weighing of the perceived benefits to action contrasted to the perceived barriers. Therefore it is believed that a stimulus in the form of an action cue is required to “trigger” the appropriate behaviour. Such a stimulus could either be internal (perception of bodily states) or external (interpersonal interaction, mass media communication, or personal knowledge of someone affected by the health problem) (Cockerham, 2012). Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.

The model assumes that if a person regards himself/herself susceptible to a condition, believes that the condition would have potentially serious consequences, believes that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believes the anticipated benefits of taking action
outweigh the barriers to (or costs of) action, one is likely to take action he or she believes will reduce their risks (Glanz et al., 2008).

Additionally, it is important to note that health seeking behaviour has been observed to be based upon the value of the perceived outcome (avoidance of personal vulnerability) and the expectation that preventive action would result in that outcome (Cockerham, 2012).

Finally, the theoretical framework informs this particular study on the basis of the five constructs that make up the HBM. Thus, women may only utilize maternal health care services if they feel that the pregnancy they are carrying may have a likelihood of affecting their wellbeing and that by so doing they feel that they will reduce the likelihood of them experiencing difficulties during the entire period of pregnancy. Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.
2.8 Conceptual Framework

A conceptual framework is a concise description of the phenomena under study accompanied by a graphic or visual depiction of the major variables of the study (Mugenda, 2008).

![Conceptual Framework Diagram]

*Figure 2.1: Conceptual Framework of the correlates of maternal Health Care utilization*
2.8.1 Behavioural Model of Health Services Utilization

The study utilized the behavioural model of health services utilization developed by Andersen and Newman (1973) to explain maternal health care utilization. It asserts that the utilization of health service is dependent on three sets of individual factors; predisposing factors, enabling resources and the illness levels of an individual (need for health service) (Andersen & Newman, 1973; Aday & Andersen, 1977; Andersen, 1995).

2.8.1.1 Predisposing factors

Predisposing factors reflect the fact that different people have a different likelihood/propensity to use health care services. They include demographic characteristics e.g. age and gender, the social structure which determines the social status of a person and his/her ability to cope with presenting problems in society. Social structure can be measured using indicators such as education, occupation, household size, number of previous pregnancies and health-related attitude. Health beliefs include attitudes, values and knowledge about the health and health services that might have an effect on the subsequent need and use of health services available (Andersen, 1995).

Looking at the study variables, the model helps in the analysis of the effects of the demographic variables which include; age, sex, marital status and parity on maternal health care utilization in the study area. This helps to understand why there are disparities in the utilization of maternal health care services. Socio-economic factors such as education level, income, occupation and family size help in knowing the social status of an individual and help in understanding how better the individual is equipped to deal with the health problem at hand. The cultural beliefs enable us to have a better understanding of the outlook towards
health and health services which might have an effect on the need and use for health care and health services among the study subjects.

2.8.1.2 Enabling Resources

Enabling resources deal with the means that make it necessary for individuals to utilize health care services even if they are predisposed to them e.g. income, access, and availability of health services. They may either be personal or community based and make health service resources available to individuals. Enabling conditions can be measured by indicators such as a person’s income, level of family insurance coverage or other source of third party payment for health care, whether or not the person has a regular source of health care, the nature of the regular source of care and the accessibility of the source of health care.

Community enabling characteristics include the amount of health facilities and personnel in a community. Thus, if resources are reasonably plentiful and can be used without queuing up they might be used more frequently. Analysing it from the economic viewpoint, one might expect people experiencing low prices for medical care to use more services. Other measures of community resources include region of the country and the rural urban nature of the community in which the family lives. These variables might be linked to utilization because of local norms concerning how medicine should be practiced or overriding community values which influence the behaviour of the individual living in the community (Andersen & Newman, 1973).
Focusing on service provider factors such as the availability of drugs, attitude of service providers, waiting time, availability of equipments and bed space all have an effect on how health care facilities will be used. All these service provider factors enable people utilize available health care facilities because if the services provided measure up to what the clients expect then they will utilize them. People’s occupation and income are also enabling factors for utilization of health care services because with a good income one is able to pay for the expenses incurred while seeking for care and one can also be able to buy health insurance policies which cover them whenever they fall ill and thus they can be able to seek for health care services. The quality of service offered and the effectiveness of the service provider also determine whether a patient will or will not utilize health care services. Where the services are effective patients will tend to utilize such services more.

2.8.1.3 Need

According to Andersen and Newman, the need factor is the most immediate cause of health service use (Andersen & Newman, 1973). An individual must perceive illness or the probability of it occurring for him/her to seek for health care. The levels of illness represent the most immediate cause for health service utilization. Perceived severity or number of episodes of diseases have a positive association with health care utilization. The model also makes the assumption of a clinical evaluation system because individuals seek care from formal medical systems.

Indicators of perceived illness includes the days that the individual is unable to function normally because the disease interferes with how he/she conducts his daily activities like going to work, going to school, playing with their peers or even taking the children to
school. Other measures of perceived illness include symptoms the individual experiences in a given time period and a self report of the general state of health, e.g. excellent, good, fair or poor. Evaluated illness measures are attempts to get at the actual illness problem that the individual is experiencing and the clinically judged severity of that illness. Under ideal circumstances included here would be a physical examination of the individual by a medical practitioner (R Andersen & Newman, 1973).

The need for utilization of health care services will be examined on the basis of how the disease interferes with the patients daily activities.
CHAPTER THREE: METHODOLOGY

3.1 Introduction
This chapter provides details of the research methodology used during the study. It offers information on the study site, research design, sampling procedures, the target population, the data collection methods and tools, and finally analysis of data. Consideration is also given to logistical as well as ethical issues.

3.2 Site of the Study
This study was conducted in Ganze district which is one of the six districts in the larger Kilifi County. Ganze district lies on Latitude 3°32'0" North and Longitude 39°41'0" East. It borders Kaloleni district to the South and Bahari district to the East. Ganze district has three divisions namely Ganze, Bamba and Vitengeni; it has a total of 16 locations and 48 sub-locations.

According to the 2009 census report, Ganze district had an estimated total population of 117,074 people with the males accounting for 53,403 (45.6%) and females accounting for 63,671 (54.4%) of the total population. The district covers a total area of 2,779 Km². Ganze district is a semi arid area where horticultural crops are produced using drip irrigation system while food crops and livestock feeds are produced using water conservation structures (Ketiem et al., 2007).

3.3 Research Design
This is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The
researcher employed a cross-sectional survey research design in the collection of data for the proposed study because it can be used to collect data from many people at relatively low cost and relatively quickly. Survey research design is always used to collect information from the field at one point in time. A survey design entails data collection on more than one case and at a single point in time in order to collect both quantitative and qualitative information in connection with two or more variables which are often examined to detect patterns of association (Alan Bryman, 2012).

3.4 Target Population

The study focused on women of reproductive ages (18-49 years) in Ganze district which is made up of three divisions namely Ganze, Bamba and Vitengeni.

3.5 Study Population

The study population consisted of women (18-49 years) who had come for antenatal care and those bringing their babies born at last delivery to the primary health care centres for immunization and other maternal and child health related services.

3.6 Sample Size Determination and Sampling of Study Subjects

3.6.1 Sample Size Determination

According to Bailey (1982), 30 elements are considered by many as the minimum size of a sample. Other researchers opt for a minimum sample of 100 units while others opt for 200 (Chadwick et al., 1984). Thirty (30) respondents were picked from each of the six health care facilities providing maternal health care services in the study area.
3.6.2 Sampling Procedure

This study used triangulation of various sampling techniques with a view of ensuring a representative sample of study subjects was selected and studied. To ensure sample representation and to avoid biasness within the framework of triangulation, multi-stage sampling strategy was adopted.

In the first stage, purposive sampling technique was used to select Ganze district among the six districts that constitute Kilifi County. Ganze was selected because it is a rural area and only one sub-district hospital in the whole district, namely Bamba sub-district hospital. The nearest referral hospitals are in Kilifi and Malindi districts and women with complications have to be referred to either of the two facilities.

In stage two, the researcher considered to stratify Ganze district into three divisions namely Ganze, Bamba and Vitengeni. This was to ensure that there is sample representation from the whole district.

In the third stage, a list of all the health facilities that offer maternal health care services in the district was drawn. Two health care facilities that provide maternal health care services were selected using simple random sampling technique from each of the divisions making a total of six health care facilities.

Lastly, study subjects were selected using convenient sampling. The interviewer was at the health care facility and interviewed 30 subjects from each health care facility giving a total sample size of 180. There was oversampling of study respondents by 9 subjects giving a total sample size of 189.
3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion Criteria

- Subjects included in the study only comprised of women of reproductive ages (18-49 years).

- Only those women who: (i) brought their babies born at last delivery and (ii) those coming for delivery to the primary health care centres for ante natal care services and (iii) those coming for immunization services were eligible for the study.

- Only those respondents who gave an informed consent of participating in the study were interviewed after they had signed the consent form.

3.7.2 Exclusion Criteria

- Women seeking other health services other than maternal health care services from the primary health care centre were not interviewed.

- Women under the age of 18 years were not interviewed because of legal and ethical issues.

- Those women who did not consent to voluntarily participate in the study were not interviewed.

3.8 Data Collection Procedures and Tools

The study employed the use of the interview schedule as the primary tool of data collection because literacy levels in Ganze district were relatively low. Interviews were carried out on
a face to face basis with the respondents who did not know how to read and write and the responses generated from the interviewees were accurately recorded.

3.9 Data Analysis

The collected data from the field was edited, coded and classified into response categories; this was done with the help of the Statistical Package for Social Sciences (SPSS, version 20.0). Descriptive statistics were used to display the Socio-Demographic characteristics of study respondents and utilization of maternal health care services in Ganze District. Frequency tables were used to present the Socio-Demographic distribution of study respondents and pie charts and bar graphs were applied to aid in the visual appreciation of the Socio-Demographic characteristics.

The chi-square test was used to examine whether or not there exists a relationship between the categorical variables; and Binomial Logistic Regression was used to carry out inferential analysis on the determinants of maternal health care utilization due to their binary nature. Logistic regression was used to examine the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). In order to identify the factors that predict utilization of maternal health care services, Multivariate Logistic Regression (MLR) was therefore applied. All the independent variables that were identified as having an association at the bivariate level were included in the model and the significance level for all the statistical analysis was set at 95% (P≤.05) confidence level.
3.10 Ethical Considerations

Ethical clearance for the study was applied to and granted by the Ethical Review Committee (ERC), an agency of the National Commission for Science, Technology and Innovation (NACOSTI). Further, research clearance was also obtained from the Deputy County Commissioner Ganze Sub-County and the Kilifi County Research Coordination Committee to visit health care facilities in Ganze and conduct the study.

During the survey, the researcher explained the purpose of the study to the respondents. This was done to ensure that the respondents gave an informed consent for taking part in the study. Furthermore, this ensured cooperation from the respondents and it helped to avoid any suspicion on the part of the study subjects.

The researcher insisted on and adhered to voluntary participation of respondents in giving information relevant for the study to avoid any coercion in the data collection process. The researcher maintained confidentiality by ensuring that respondents’ information was used only for the purpose of the study and no names of respondents were displayed and that interview schedules were to be kept securely under lock and key.
CHAPTER FOUR: STUDY RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides results of data analysis from the 189 interviewed respondents in Ganze District guided by the research objectives as elucidated in Chapter One. The study over sampled by nine (9) respondents. From the study it is evident that more women were sampled from Bamba division (36.0%) than the other divisions in the district.

This analysis and discussion focuses on the following themes: socio-economic and demographic dimensions of the local community, facility specific factors and women’s preferences and perceptions of ANC services offered at the health care facilities in Ganze district with regard to their use of maternal health care services. The findings are presented in tabular format and figures that clearly show the variations in responses among study variables.

4.2 Socio-Demographic Dimension of Respondents

This section focuses on the different or diverse characteristics with a bearing on the utilization of maternal health services. For the purpose of this research, our key interest was to conduct an assessment of the following parameters towards utilization of maternal health care services; age of respondents, education levels, education levels of their spouses, marital status, income levels, parity and religion. These parameters were investigated and results are presented next.
4.2.1 Age of Respondents

Age of respondents is critical as a variable in this study as it sheds some light on not only the maturity of the study subjects but also ensuring that the selection of study participants remained ethical. Further, age was included because of the assumption that the older the respondents the more mature and experienced on maternal issues and decision making. Indeed, differential age among expectant mothers cannot be gainsaid when it comes to making important maternal decisions that may have value in enhancing maternal and child health. The distribution of respondents by age is aptly presented in Table 4.1.

Table 4.1: Distribution of Respondents by Age

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>70</td>
<td>37.0</td>
</tr>
<tr>
<td>23-27</td>
<td>55</td>
<td>29.1</td>
</tr>
<tr>
<td>28-32</td>
<td>42</td>
<td>22.2</td>
</tr>
<tr>
<td>33-37</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>38-42</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>48-52</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Findings in Table 4.1 indicate that out of the sampled (189), respondents over one third (37%) were between ages 18-22 years old. This clearly indicates that most women start giving birth at an early age. Of the sample, over one quarter (29%) were between the ages of 23-27 years and only 5% of the respondents were aged 38 years and above.

Early marriages and giving birth at early age exposes the women to high chances of not gaining higher education thus leading to over reliance on their spouses for all their needs consequently leading to financial dependence. Dependancy has implications for maternal
health care utilization probably because women will always have to ask for money whenever they want to visit the health facility during their clinic appointments. Subsequently, it may also lead to women not attending maternal health care clinic as expected especially if the clinics are in far off places because of lack of finances to pay for their bus fare. Consequently, this may result to low or poor maternal health care service utilization. Additionally, young single women may not attend maternal health care clinic because they may be trying to hide the pregnancy from their parents and relatives.

The low percentage (5%) of women aged 28 years and above attending antenatal clinic might probably be a result of them having gone through subsequent births and thus don’t find it necessary because they feel they have had more successful birth experiences without any complications. This might also be attributed to them having stopped giving birth. This finding corroborates those of Jat et al., (2011) who found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services compared to their older counterparts.

4.2.2 Marital Status

The Marital status of a person in this study was conceived to mean the civil state of an individual in relation to marriage laws of the country. This variable was deemed important in this study because it helps in determining how maternal and child health decisions are made in a largely patriarchal African society where it is assumed that all decisions in the homestead are to be made solely by male members of the family because they are the heads of their families. The distribution of respondents by their marital status is presented in Table 4.2.
Table 4.2: Percentage distribution by respondents marital status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>Married</td>
<td>170</td>
<td>89.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Results in Table 4.2 depict that majority (90%) of the sampled respondents were married, only 7% were single, while 2% and 1% were widowed and separated respectively. Field observations showed that most of the respondents who were single were between ages 18-22 years old and either lived with their parents or relatives. The high (90%) number of respondents in marital union was expected because the study focused on women in their reproductive ages, many of whom were expected to be married due to societal expectations. Indeed, this finding corroborates those of Ebuehi et al (2006) and Mekonnen & Mekonnen (2002, 2003) who stated that marital status is related to utilization of maternal health services because married women were more likely to use antenatal care than their unmarried counterparts.

4.2.3 Religious Affiliation

Religion is herein conceived as a complete and acceptable system of set beliefs and practices that members of society adhere to. It is an institution that exercises social control among its members. Accordingly, affiliation to religious institution is one of the primary activities in society. Of importance in this study, is that religious affiliation may influence decisions on adoption of contraception, marriage, maternal and child health issues among
respondents. The distribution of respondents according to their religious affiliation is presented in Figure 4.1.

![Religious Affiliation](image)

**Figure 4.1: Distribution of respondents by Religious affiliation**

Figure 4.1 reveals that a half (50%) of the respondents were Christians, slightly over one tenth (12%) were Muslims, 1% subscribed to African Traditional Religions and slightly over one thirds (37%) reported that they were Atheists. This indicates that Ganze district is majorly a Christian community. Interestingly, 37% of the respondents don’t belong to any religion. This may be explained by the remote nature of the area which is compounded by lack of infrastructure and high levels of poverty. The poor state of infrastructure and poverty have probably delinked the community from accessing or being accessed by mainstream religious evangelists.

The higher (50%) number of respondents being Christians is a mirror of Kenya, which is predominantly Christian owing to aggressive penetration of Christian evangelists and size of the Christian faith which puts it at an advantage with regard to resources and numbers over other faiths in the country. The strength in resources and numbers might have enabled
Christian denominations to penetrate this remote area more than other faiths which had limited resources and small numbers of adherants. This finding may have an influence on maternal health care utilization in the study area in line with observations by (Mekonnen & Mekonnen, 2002, 2003; Mondal, 2009) have linked religion to the fact that it affects utilization of antenatal care. They demonstrated that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs and that Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious believes.

4.2.4 Education Level of Respondents

Education is one of the powerful drivers of social change in society in that those with higher levels of education seem to adopt new ideas and innovations faster than their counterparts with low levels of education. Thus, the education level of respondents is a critical variable in this study as it is indicative of a person’s level of understanding, access and uptake of information related to maternal and child health issues. Findings of the study on the level of education of respondents are presented in Table 4.3.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non formal education</td>
<td>85</td>
<td>45.0</td>
</tr>
<tr>
<td>Some primary education</td>
<td>57</td>
<td>30.2</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>35</td>
<td>18.5</td>
</tr>
<tr>
<td>Some secondary education</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Secondary school completed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results in Table 4.3 indicate that out of the sampled (189) respondents, over two fifths (45.0%) had never gone to school, over one quarter (30.2%) had some primary education, with slightly less than a fifth (18.5%) reporting to have completed primary level of education. Those who reported to have either some secondary, completed secondary and others were only less than one tenth (6.3%).

From Table 4.3, it is apparent that the majority (93.7%) of the interviewed women of Ganze district were lowly educated. This finding may have an implication on the level of uptake of information on maternal and child health, adoption of maternal health care services and family planning. The levels of low education coupled with the culture and traditions of the community may compound the uptake of maternal health care services in an area. Further, the low levels of education in the area may have serious implications on other socio-economic opportunities such as securing lucrative employment and access to knowledge, especially on maternal health care services.

In fact, it has been shown that women of higher levels of education have a higher likelihood of fulfilling the requirements of the description of use of maternal health services as described by the WHO (1994; 2004). Such women have more capability to uptake new information on maternal health care practices than those with a low education background. Indeed, Elo (1992) reported that there is a strong positive relationship between education and the use of maternal health care services.
4.2.5 Education Level of Respondent’s Spouse

Owing to the aforementioned importance of the level of respondent education on the uptake of maternal health care services, it was prudent to investigate the combined effect of education on maternal health care utilization by including spousal education level in the matrix. More precisely, the education level of the respondent’s spouse was envisioned to be an important variable in this study because it may act as an enabling factor in the utilization of information concerning maternal and child health practices, access and uptake of such services. Findings on the education level of the respondent’s spouse are presented in Figure 4.2.

Figure 4.2: Distribution of respondents spouse by level of education

Figure 4.2 depicts that slightly over one fifth (20.5%) of the sampled respondents’ spouse had never gone to school, over half (56.5%) had either attained some form of or completed primary education, while over one quarter (28.8%) had either some form of or completed secondary school level of education and above. The level of education of the respondent’s
spouses indicates that there are educational differentials between male and female members of society in Ganze district. Level of education among the males is higher than that among the females. This finding is not a surprise to this study as it is a mirror of the situation in the country owing to the patriarchal nature of the society where boys have higher access to schooling opportunities than their female counterparts.

However, significant to mention is that spousal educational level may facilitate the utilization of maternal health care services because it enhances the capacity to access information that can be shared with the marital partner. Such sharing of useful information and knowledge, especially on maternal health may make the spouses see the importance of visiting maternal health care clinics for their ANC. Accordingly, such visits have the potential of bettering their health status and that of their unborn children. This finding is in tandem with those of Woldemicael (2007) and Dairo & Owoyokun (2010) when they reported that high maternal and husband’s education have a positive relationship to antenatal care utilization.

4.2.6 Respondents Source of Income

Respondents source of income in this study was conceived to mean the main livelihood strategy that respondents eke out a living by receiving money on a regular basis for work done at the end of every month. This variable was considered important as it helps to highlight the ability of respondents to pay for the cost of health care services offered. Findings on respondents’ source of income are presented in Table 4.4.
Table 4.4: Distribution of respondents by main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>Casual employee</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>107</td>
<td>59.4</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Missing cases = 9

Table 4.4 depicts that almost three fifths (59.4%) of the respondents had no source of income clearly alluding to the fact that most of these women were financially dependent on their spouses. The high (59.4%) number of women having no source of income may probably be explained by the fact that women, as shown in Table 4.3, have very low levels of formal education. This means that their access to formal employment is low.

Indeed, the absence of prerequisites (education and skill training) to formal labour pushes women in Ganze out of formal means of livelihood where they can earn a regular income and attain financial independence that may enhance their access to maternal care. The foregoing may be explained by the patriarchal nature of the african society which favors boys over girls in education. In fact, women are seen as homemakers and as such have to stay at home and take care of their husbands and children whereas the husbands are expected to provide for the family.
4.2.7 Source of Income of Spouse

Respondents’ spouse’s source of income was considered as an important variable in this study as it acts as an enabling factor to utilization of maternal health care services. This is because the earned income can be used to cater for the necessary financial obligations that might be accrued in the process of seeking maternal health care services. Results on the respondents’ spouse’s source of income are presented in Table 4.5.

Table 4.5: Distribution of respondents by spousal main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>04</td>
<td>2.4</td>
</tr>
<tr>
<td>Government employee</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>18</td>
<td>11.0</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Casual employee</td>
<td>62</td>
<td>37.8</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>06</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>52</td>
<td>31.7</td>
</tr>
<tr>
<td>Not aware</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 25*

Table 4.5 presents findings of respondents’ spouses source of income. Of the total respondents sampled (189), over one third (37.8%) of the respondents’ spouses were engaged in casual employment, meaning they do not earn a regular income. More than one quarter (31.7%) observed that their spouses have other sources of income other than the ones elucidated in the interview schedule. Simple observations during field work showed that most men in the area are engaged in charcoal burning. The high (37.8%) number of spouses being in casual employment means that there are times that they are out of a job and thus might not be able to always provide financially in case the wife wants to make an
ANC visit. This situation is compounded by observations made during field work that most women interviewees lived far away from the available maternal health care facilities. Accordingly, most of them reported walking as their main means of reaching the nearest health care facility. This finding confirms that of Simkhada et al., (2008) who posits that women’s employment affects antenatal care uptake.

4.2.8 Parity

Parity in this study was conceptualized to mean the birth order in a nuclear family. Parity was considered an important variable in this study because it aids in explaining the differentials in utilization rates of maternal health care services by the number of children one has. Findings of the study on parity are aptly presented in Figure 4.3.

![Parity](image)

*Figure 4.3: Distribution of respondents by parity*

Figure 4.3 indicates that slightly more than two fifths (43%) of the respondents were multiparous, more than one fifth (23%) were grandmultiparous, more than one tenth (15%) were primiparous and slightly less than one fifth (19%) were nulliparous families.
Parity has an important influence on utilization of maternal health services by women of reproductive ages (Mekonnen & Mekonnen, 2002). The relationship between parity and utilization of maternal health care services in Ganze will be tested using Chi-square and regression analysis in the later sections of this thesis.

4.2.9 Decision to Seek Maternal Health Care

The variable on who makes the decision to seek maternal health care was conceived to be important for this study as it sheds some light on the decision making process between male and females in society. The level of autonomy in decision making among the women and its effects on utilization of certain services is also critical in the analysis of maternal health care services utilization. However, Given the patriarchal nature of Kenyan communities where men are considered the heads of the households and thus responsible for decision making and the fact that health care in the household is a role of the female gender, it was critical to include the variable to see the decision maker on matters of uptake of maternal health care services in Ganze.

Further, maternal health care does not only fall within the purview of gender roles where the women are expected to perform but it actually affects women only making its decision to uptake or not very critical for women despite the patriarchal nature of society. Data on who makes decision with regard to uptake of maternal health care services in Ganze will also help in understanding whether the autonomy of women in decision making affects their utilization of such services. Results of who makes decision to seek maternal health care services are presented in Figure 4.4.
Figure 4.4: Distribution of respondents by who makes decision to attend ANC clinic

Figure 4.4 depicts that slightly more than three fifths (61%) of the respondents, were found to make joint decisions on MCH, while only one quarter (25%) of women were observed make the decisions on their own. Less than one tenth (9%) of MCH decisions were observed to be made by the respondents spouse and (5%) of the times decisions are made by other people, either parents or relatives living with the respondent.

On one hand, the higher (61%) percentage citing joint decision making is a clear testimony of the growing gender empowerment and dynamic nature of society where women are gaining, albeit gradual, their social space as key players in decision making with regard to matters touching on their lives. This seems to happen regardless of the strong patriarchal nature of the Kenyan society. On the other hand, the one quarter (25%) who said they make the decision themselves was expected in that health care and indeed, maternal health care decision making and uptake of its services are a preserve of women owing to the genderized roles in society, where health is classified as a domestic role to be undertaken by women. In fact, women’s autonomy in decision making has been reported by
Woldemicael (2007) as an important factor in explaining utilization of maternal and child health care services.

4.2.10 Hospital Deliveries

The number of hospital deliveries was considered to be a critical aspect in this study since it gives further insight into the utilization rates of institutional delivery services among the rural women of Ganze district. Findings with regard to this variable are presented in Figure 4.5.

![Hospital Deliveries](image)

*Figure 4.5: Distribution of respondents by hospital deliveries*

Study findings presented in Figure 4.5 clearly indicate that of all (189) the respondents interviewed, only over two fifths (44%) had ever had hospital deliveries, while over half (56%) had never had any hospital deliveries. This finding corroborates those of the KDHS 2008-2009 which reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). Interestingly, this is happening regardless of the
understanding that increasing the proportions of delivery taking place in health facilities is important in reducing health risks to both the mother and her unborn child and consequently preventing both maternal and child mortality.

However, Ganze district being a rural area, 44% of the interviewed mothers having ever delivered in health facilities is quite high and somehow slightly contradicts the KDHS 2008-09 which indicate that only 35.4% of deliveries take place in health facilities in rural areas (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). The reason for the difference could be attributable to differences in the characteristics of the samples used in the two studies. Further, whereas the KDHS 2008-09 was a country wide study encompassing women from both urban and rural areas, this study focused only on Ganze which is a rural and poor district in Kilifi County.

4.2.11 Place of Delivery of Child at First Birth

The place of delivery of the first born child was considered an important variable in this study as it highlights the differentials in place of delivery due to the fear of child birth associated with prior birth experience of women in their second parity. This variable was included in the study because experiences of first birth may have a bearing on uptake or non-uptake of maternal health care services. Results of the place of delivery of child at first birth are presented in Table 4.6.
Table 4. 6: Distribution of respondents by place of delivery of child born at first birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>53</td>
<td>34.9</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>81</td>
<td>53.3</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a</td>
<td>02</td>
<td>1.3</td>
</tr>
<tr>
<td>stranger/relative</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 37*

Findings in Table 4.6 show that over half (53.3%) of the respondents had their first births at home (alone or with the help of a relative), while slightly more than one third (34.9%) had their first delivery in a health care facility with the help of a trained health professional. The over half (53.3%) of women of reproductive ages giving birth at home (alone or with the help of a relative) may probably be due to structural factors such as long distance to the hospital, poor road network and lack of transportation. This finding is consistent with that of Ochako et al (2011) and (Owino, n.d.) who reported that delivery with the aid of a TBA or skilled professional is less likely to happen among rural women. Accordingly, rural residence is largely associated with higher likelihood of home deliveries. The remote nature and poor infrastructural development in Ganze may aptly explain these disparities reported in the study.

4.2.12 Place of Delivery of Latest Child

Place of delivery of latest child was envisioned as an important variable in this study as it highlights the differentials in place of delivery between the first born child and subsequent deliveries. The assumption is that if the first child was born in a health care facility and the
experience was satisfactory to the mother, there are high chances that subsequent births would take place in health care facilities and vice versa. Results of the study with regard to this variable are presented in Table 4.7.

Table 4.7: Distribution of respondents by place of delivery of child born at latest birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>65</td>
<td>42.5</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>70</td>
<td>45.8</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>07</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Findings of the study in Table 4.7 depict that prior to the study, over two fifths (45.8%) of the women had delivered their latest child at home or with the help of a relative, while another over two fifths (42.5%) had been observed to have delivered in a hospital with the help of a trained health professional. In comparison with place of delivery of first birth as captured in Table 4.6, over half (53.3%) had their first births at home alone or with the help of a relative while slightly more than one third (34.9%) had their first delivery in a hospital with the help of a trained health professional.

The two sets of findings, Table 4.6 and Table 4.7, show interesting trends that, on one hand, there is a decline (from 53.3% to 45.8%) of women giving birth at home or with the help of a relative and, on the other hand, there is a subsequent increase (from 34.9% to 42.5%) of women who had their subsequent deliveries in a health care facility compared to their first birth. These findings are not a surprise to this study in that they show the gains
that are being made in enhancing deliveries in health care facilities and in the hands of professionals as envisioned by government policy and the MDGs, especially goal number five (5). In fact, the findings are inconsistent with those of Fotso et al (2009) and Mekonnen & Mekonnen (2002) who reported that health facility delivery decreases as parity increases. More specifically, they reported that those with two or more children have lower utilization of health care delivery care services, a fact refuted by the findings of this study.

4.2.13 Trimester Women Visited Health Facility During First Pregnancy

The concept trimester is used in this study to refer to divisions of three months during pregnancy that an expectant mother had started ANC visits. It is expected that women will start vising ANC services immediately they realise that they are expectant. The variable trimester in first pregnancy signify which month the interviewed women started ANC visits during their first pregnancy. This variable was considered important in this study as it sheds some light on how well women of child bearing ages utilize maternal health care services. The assumption being that they will start uptaking ANC services on the first month that they realise they are expectant. Findings of the study on trimester in first pregnancy are presented in Figure 4.6.
Figure 4.6: Distribution of respondents by trimester one started ANC visits during first pregnancy

Figure 4.6 presents findings of the trimester that women started their antenatal visits during their first pregnancy. It is shown in Figure 4.7 that more than three fifths (65%) of the respondents had their first visit during the second trimester, one fifth (20%) had their first visit during the first trimester, less than one tenth (9%) had their first visit during the third trimester and only 6% never went for ANC visits during their first pregnancy. Findings are consistent with those of a study carried out in Ethiopia (Afework et al., 2014) which found out that majority (68.3%) of the women were observed to have started attending ANC during the second trimester.

This finding can further be explained by field observations where most women attributed having not had their first ANC visit due to the fact that they did not and still do not know when exactly they are supposed to make their first visit once they discover that they are expectant. The lack of knowledge on when to begin their ANC visits can probably be as a result of low levels of education among the women as captured in earlier findings of the study where only less than one fifth (6.3%) reported to have secondary education and
above. Lack of education denies these women opportunities to access information, including on health care and hence this impacts on uptake of health care services including maternal health care services.

4.2.14 Trimester Women Visited Health Facility During Latest Pregnancy

Trimester in this study was conceived, inter alia, to mean divisions of three months during pregnancy in which the respondents started using ANC services in their current pregnancy. This variable was considered important in this study first, because it sheds some light on how well women of child bearing ages utilize maternal health care services by focusing on the first month that they seek ANC services for their children at last birth. Second, it could provide comparative data with regard to which trimester, first or second, birth parity is associated with and third, whether there are dynamics in the process. Findings of the study on the trends for this variable are captured in Figure 4.7.

![Figure 4.7: Distribution of respondents by trimester when one started ANC visits during latest pregnancy](image_url)
Figure 4.7 depicts that slightly less than one quarter (24%) had their first ANC visit for current pregnancy during the first trimester, more than three fifths (67%) had their first visit during the second trimester and less than one tenth (9%) had their first visit during the third trimester. The low (24%) percentage of women having their first visit during the first trimester might probably be attributed to lack of maternal health care education or structural factors such as long distances to the health facility and maternal health care services being offered at the health facility on certain days of the week only hence inconveniencing users.

Comparatively, women seeking ANC services during their first pregnancy, Figure 4.7 and women seeking ANC services during their latest pregnancy, Figure 4.8 show over three fifths 65% and 67% respectively appearing in the second trimester. Only a slight increase of 2% of women seeking ANC services in the second trimester of their current pregnancy can be observed. This can probably be attributed to the low levels of education and high poverty rates in the study area as adduced and implied in earlier findings of the study respectively. Low levels of education and high poverty rates makes it difficult for women to either realise they are pregnant in the first trimester because they are ignorant on ANC matters and may not be in a position to access or afford pregnancy testing kits respectively.

4.2.15 Distance to Health Care Facility

Distance to the health facility was considered as an important variable in this study as it provided an insight into the structural barriers that may exist in society in relation to utilization of maternal health care services. Considering the remote location and poverty rate (over 68%) in the county, especially in the study area, the inclusion of the variable was
both timely and significant for the study. Results of the study on this variable are presented in Figure 4.8.

**Figure 4.8: Distribution of respondents on their views whether distance to health facility is a concern**

Findings in Figure 4.8 indicate that more than half (56.4%) of the studied women said that the distance to the health facility was a concern. Field observations show that they had to spend a lot of time on the way to and from hospital and this affected how they utilized maternal health care services. Thus, many stated that they only went to the hospital when they deemed it necessary. This study finding supports that of Cham et al (2005) who posits that delays in decision making process of visiting a health facility can be caused by structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport and inadequate means of transportation.

Figure 4.8 also shows that more than two fifths (43.6%) of the respondents observed that the distance to and from the health facility was not a hindrance to their utilization of maternal health care services. Findings from informal interviews with these women, health
professionals and community members reveal that most of these women were used to walking long distances. Indeed, they were so used to the long distances that whenever we asked some community members on our way to the health care facilities they would retort, “nihaha kare” (literary translated to mean it is just here). The “nihaha kare” could turn out to be kilometre(s) of walking as observed during field work. This can be interpreted to mean that they are used to the long distances such that their sense of distance or how far a place is may be blurred by their experiences and cultural perceptions of distance.

4.2.16 Means of Transport to Nearest Facility

Means of transport to the nearest health facility was considered an important variable of this study as it presented to us one of the challenges that the pregnant mothers may encounter as they seek maternal health care services in their respective health care facilities. The respondents were asked to report which was the most frequently used means of transport that they used to the nearest health facility during clinic visits for maternal health care services? Findings of the various means of transport utilized by the interviewed women are presented in Table 4.8.

Table 4. 8: Distribution of respondents by means of transport to health facility

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>141</td>
<td>76.2</td>
</tr>
<tr>
<td>Motorcycle boda boda</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td>Bicycle boda boda</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Own/family motorcycle</td>
<td>02</td>
<td>1.1</td>
</tr>
<tr>
<td>Own/family bicycle</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Public service vehicle</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 4*
Table 4.8 indicates that slightly more than three quarters (76.2%) of study respondents reported walking to the nearest health care facility while both motorcycle (*boda boda*) and public service vehicles accounted for (10.8%) respectively. The larger (76.2%) percentage of the respondents who were observed to be walking to the health care facility for ANC services despite the fact that they were expectant and whether or not they had complications was amazing in that the mean distance to the nearest health facility was observed to be 7.2 Kilometers, while the mean time taken walking to the health care facility was observed to be one hundred and eleven (111 minutes) minutes or approximately one hour and fifty one minutes (1H:51 M).

Notably, despite these long distances, women had probably no other option. The lack of alternative options was probably due to poverty and limited employment opportunities constraining their financial capabilities and thus a lack of means to pay for even public transportation or seek alternative health care facilities in the locality or in the neighbourhood. However, these findings are not a surprise to this study as they are consistent with those of Cham et al (2005) who reported that structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport, inadequate means of transportation can lead to delays in the decision making process of visiting a health care facility by patients.

4.2.17 Gender of Provider

The gender of the service provider was considered an important variable in this study because some cultures and religions only accept other women to be midwives and not men. This is regardless of the fact that it is until recently that the girl child has been given an
opportunity to go to school leading to differential education qualifications. Results on the gender of provider are presented in Figure 4.9.

Figure 4.9: Distribution of respondents by their preferred gender of provider

Results in Figure 4.9 clearly indicate that over half (53%) of the respondents had no particular preference for the gender of provider whilst over two fifths (42%) and less than one tenth (5%) said that they would want to be attended to by a female or male provider respectively.

The more than half (53%) of the respondents who said they had no particular preference for the gender of the provider may be explained first, by the recognition among respondents that providers are bound by a code of ethics and the fact that all staff undergo similar professional training and thus gender consideration does not compromise quality of care and competence among providers. Second, owing to the remote location of the district and the fact that there are limited choices of health care facilities, expectant women may not have opportunity to make choices of health care providers based on among other things gender and that they have to do with what is available.
As expected, Figure 4.9 shows that over two fifths (42%) of the respondents wanted to be attended to by female providers. Several factors can explain this. One respondent who preferred to be attended to by a female health care practitioner said that:

“kuna mambo mengine huwezi mueleza mwanamume…..mwanamke ni bora haswa amabaye amezaa yuajua kila kitu hata si lazima umwelezees”. (Translated this means that there are some issues that you cannot open up to a man….women are better especially those who have given birth because they have experienced child birth and so know everything so you don’t need to tell them everything).

Another respondent who would like to be attended to by a female practitioner retorted that:

“Muche dza mino” (Translated into english means that the female practitioner is a woman just like herself).

Further, it is noted in Figure 4.9 that only 5% of the women would like to be attended to by a male health care provider. This is interesting and unexpected given the private and confidential nature of ANC procedures. This probably is because of the ethical confidence patients have of health care providers to handle private and confidential details regardless of gender differentials of their patients. More interestingly, two respondents among the 5% who said they would like to be attended to by a male health care provider retorted that:

“mimi napenda sana huyo daktari awe mwanamume, hawa wa kike wana madharau sana.” (Translated into english means that she would like the midwife to be a male because the female ones are usually not so friendly). To the contrary, another respondents observed
that “daktari wa kiume wanantia aibu” (Translated into English means that male practitioners make her shy).

4.2.18 Type of Provider

The type of provider was considered as a vital variable in this study as this may affect utilization of maternal health care services if the preferred type of provider by the mothers cannot be easily found in the facility. Results of the study on the type of preferred provider are presented in Figure 4.10.

![Preferred type of provider](image)

*Figure 4. 10: Distribution of respondents by their preferred type of provider*

Findings in Figure 4.10 indicate that slightly more than four fifths (80.9%) of the interviewed respondents prefer to be attended to by trained medical professionals such as Medical Doctors (53.4%), Midwives (14.8%) or Nurses (12.7%). Others preferred T.B.A’s (3.2%) or a combination of all the practitioners (3.7%) whilsts more than one tenth (12.2%) had no preference. Despite more than half (53.4%) of women preferring to be attended to
by a doctor, not even a single doctor has been posted to serve in the sub-district hospital, health center and dispensaries that serve the expansive district.

However, the high number of respondents (80.9%) who preferred to be attended to by a trained medical professional might be a result of the awareness that health professionals are better trained in handling the birth process and emergency cases should any arise in the process of child birth which is always a risky affair. The finding supports MDG’s objectives especially goal five (5) that strives to make sure that women of reproductive age bracket are attended to in health care facilities and by professionals. The fact that over four fifths (80.9%) of interviewed women cited the need to be attended to by professional doctors shows goodwill in what the world is striving to achieve on the part of women.

4.3 Bivariate Analysis

Various statistical tools have been used in this work to provide an in-depth insight on the relationships that exist between the studies’ dependent and independent variables. Bivariate analysis using Chi-square ($\chi^2$) statistic for the test of significance (i.e. goodness of fit) and Cross-tabulation was used to examine the relationship between Socio-Demographic characteristics of the study respondents and utilization of Maternal Health care services.

Further, this thesis uses the Contingency Coefficient (C) to provide a measure of association between the study variables. The rationale behind this is that Contingency Coefficient is appropriate for tables of any size (Mangal, 1987). The value of (C) is given by the formula:

$$C = \sqrt{\frac{\chi^2}{m \times n}}$$

(Equation 4.1)
Where “n” is the sample size and “χ^2” is the Chi-square value. Like γ or phi and other coefficients of correlation, C has no limit (i.e. ±1). Its upper limit is dependent upon the number of categories (i.e. the size of the table). Like Chi-square (χ^2), it does not have negative values (Mangal, 1987). For a table made up of an equal number of columns and rows (K×K), the upper limit of the Contingency Coefficient is given by the formula:

\[ C(\text{upper limit}) = \sqrt{\frac{K-1}{K}} \quad \text{(Equation 4.2)} \]

Thus, for a 2×2 table, it is 0.7, for a 3×3 table \(\sqrt{2/3}= 0.82\) and for a 4×4 table \(\sqrt{3/4} = 0.87\), e.t.c. However, when the number of columns and rows differ in a table, to calculate the upper limit, the smaller number is taken as K.

Important to note in this thesis is that all the analysis in this work have been conducted using version 20.0 of the Statistical Package for Social Sciences (SPSS), with all the associations/relationships being tested at 95.0% confidence interval.

4.3.1 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Place of Delivery

In this series of bivariate analyses, using Chi-square and Contingency Coefficient, a number of socio-economic characteristics were tested for their influence on the utilization of MHCS. Results of analysis based on Chi-square statistics and Contingency Coefficient for each independent variable and dependent variable have been presented, interpreted and discussed.
Discussion of findings of analysis was done with a view to integrate the results within the existing framework of knowledge in research literature reviewed in Chapter Two of this thesis. In this regard, the discussion of results in this section will draw from the Chi-square and Contingency Coefficient analyses of various Socio-Demographic characteristics (independent variable(s) and place of delivery (dependent variable) in the order in which they are reflected in Table 4.9.

Findings in Table 4.9 shed some light, inter alia, on the relationship between Socio-Demographic Characteristics (SDC) of the respondents and Place of Delivery (PoD). The presentation of the results of analysis follows next.

From Table 4.9, an attempt is made to show whether there exists a relationship between age and use of health facilities for delivery. It is observed that women aged 28 years and above had the highest (54.5%) percentage of users who delivered in health care facilities. Further, women aged below 28 years accounted for over half (54.2%) of all home deliveries with women aged 28 years and above accounting for (4.5%) of all deliveries that took place either at the T.B.A’s clinic or on the way to hospital. Contrary to our expectations, women aged 28 years and above had more (54.5%) health facility deliveries than young women who accounted for only (40%) of health facility deliveries.
Table 4.9: Relationship between Socio-Demographic Characteristics of respondents and Place of Delivery

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Health Facility</th>
<th>Home</th>
<th>T.B.A’s clinic &amp; on the way to hospital</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>54.2</td>
<td>5.3</td>
<td>1.539</td>
<td>2</td>
<td>.463</td>
<td>.100</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>40.9</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td>5.043</td>
<td>2</td>
<td>.056</td>
<td>.191</td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>54.6</td>
<td>5.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td></td>
<td>21.384</td>
<td>4</td>
<td>.001**</td>
<td>.350</td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>36.2</td>
<td>5.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>45.0</td>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>57.5</td>
<td>12.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
<td>18.216</td>
<td>4</td>
<td>.001**</td>
<td>.326</td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>20.7</td>
<td>3.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>60.5</td>
<td>7.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>58.1</td>
<td>2.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td>13.612</td>
<td>4</td>
<td>.009**</td>
<td>.286</td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>64.2</td>
<td>4.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>41.2</td>
<td>5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td>1.860</td>
<td>4</td>
<td>.762</td>
<td>.114</td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>59.4</td>
<td>6.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>54.4</td>
<td>5.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>43.3</td>
<td>6.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents’ income (%)</td>
<td></td>
<td></td>
<td></td>
<td>4.129</td>
<td>2</td>
<td>.127</td>
<td>.267</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>55.9</td>
<td>8.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
<td>.539</td>
<td>2</td>
<td>.764</td>
<td>.097</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>52.6</td>
<td>10.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>55.3</td>
<td>5.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)
Overall, age was not significantly associated with place of delivery ($\chi^2=1.539; \text{df}=2; p=.463; C=.100$). Moreover, the relationship was found to be weak as indicated by the value of C (0.10). A review of literature shows that the findings of the study do not concur with the findings of studies carried out in Nigeria, Uganda and Ethiopia by (Adamu, 2011; Anyait et al., 2012; Teferra et al., 2012; Daniels et al., 2013; Wolelie et al., 2014; Abeje et al., 2014) who contended that age of women of reproductive age was significantly associated with institutional delivery service utilization.

Results in Table 4.9, also show that more than half (54.6%) of married women gave birth at home with three quarters (75.0%) of mothers who are either single, separated, divorced or widowed delivering in a health facility. Interestingly, women who are either single, divorced separated or widowed have a high likelihood (75.0%) of having a health facility delivery than married women. Nonetheless, the relationship between marital status and the place of delivery was not significant ($\chi^2=5.043$ df =2 P=.056 C=.191). This finding is in agreement with other studies from Ethiopia and Uganda (Assfaw & Sebastian, 2010; Anyait et al., 2012) who affirmed that marital union does not influence place of delivery.

Findings in Table 4.9 reveal further that more than half (58.0%) of Christians delivered in a health facility whereas more respondents with no religion and from non-Christian religions delivered at home and in a T.B.A’s clinic or on the way to a health facility. Indeed, religion was significantly associated with place of delivery ($\chi^2=21.384$ df = 4; p=0.001; C=0.350). Hence we conclude that religion has a significant influence on utilization of maternal health care services. The findings concur with that of Adamu (2011) in Nigeria who contended that religion had a significant association with institutional delivery with Christian women
more likely to deliver in health facilities. Hence we conclude that religion has a significant influence on utilization of maternal health care services.

Data in Table 4.9 reveals that slightly more than three quarters (75.9%) of the Primiparae women had health facility deliveries with less than a tenth (2.3%) of Grandmultiparae women delivering either at the T.B.A’s clinic or on the way to hospital. This suggests that lower parity women have a high (75.9%) likelihood of taking hospital deliveries. This finding confirms that parity has an influence on women’s place of delivery. These may be probably women in their first pregnancy and that they are being cautious of perceived risks that are associated with child birth. Indeed, parity was significantly associated with place of delivery ($\chi^2=18.216; \, \text{df}=4; \, p=0.001; \, C=0.326$). The study’s findings are consistent with those of (Assfaw & Sebastian, 2010). The findings also confirms those of (Tsegay et al., 2013) who contended that parity is an important determinant of place of delivery.

Table 4.9 also depicts that all (100%) women who had secondary and above level of education delivered in a health care facility. Further, more than three fifths (64.2%) of women with no level of education were observed to have had home deliveries. This finding could be explained by the fact that women with a high education level have the capability to uptake information about maternal health care services subsequently leading to utilization of such services. As reported by (Elo, 1992; Tura & G/Mariam, 2008; Gupta et al., 2010; Adamu, 2011; Anyait et al., 2012; Daniels et al., 2013; Abeje et al., 2014; Ayele et al., 2014; Odo & Shifti, 2014; Wolelie et al., 2015) maternal education level is a critical aspect in the utilization of maternal institutionalized delivery services.
Indeed, maternal education was significantly related to the place of delivery ($\chi^2=13.612; df=4; p=0.009; C=0.286$). These findings are in tandem with that of (Woldemicael, 2007) and also confirm those of (Teferra et al., 2012) who posited that there is a positive relationship between maternal education and place of delivery.

Findings in Table 4.9 depict that half (50.0%) of women whose husbands had secondary and above level of education had hospital deliveries with slightly less than three fifths (59.4%) of women who were married to men with no formal education having their deliveries at home alone or assisted by a relative. This finding may be explained by the fact that husbands education may act as an enabling factor in ensuring the mother receives quality care during child birth as the husband has knowledge on maternal health issues. This finding suggests that women married to men with a high educational level are more likely to deliver in a health facility than those women married to men with no formal education.

However, spousal education level was not significantly associated with place of delivery ($\chi^2=1.860; df=4; P=0.762; C=0.114$). Apparently, this finding is contrary to those of (Woldemicael, 2007); Gupta et al., 2010; Anyait et al., 2012; Teferra et al., 2012; Ayele et al., 2014; Wolelie et al., 2014; Prasad, 2014; Odo & Shifti, 2014; Abeje et al., 2014) who contended that spousal education level is significantly associated with maternal health care utilization in institutional setups.

Results in Table 4.9 depict that three fifths (60%) of women who earned 4,000 shillings and above had hospital deliveries with more than half (55.9%) of women earning less than 4,000 shillings having home deliveries. The high number of women earning 4,000 shillings
and above having health facility deliveries with only (35.3%) of women earning less than 4,000 shillings having health facility deliveries could be as a result of the costs involved. As reported by Tura & Mariam, (2008) and maternal income has an influence on utilization of institutional delivery services. However, maternal income was not significantly associated with place of delivery ($\chi^2=4.129$, df=2, p=0.127; C=0.267).

From Table 4.9, it is evident that less than one tenth (5.3%) and more than half (55.3%) of women whose spouses earned 4,000 shillings and above delivered either at the T.B.A’s clinic or on their way to hospital or at home respectively. Further, slightly more than one third (36.8%) of women whose spouses earned less than 4,000 shillings had health facility deliveries. As expected, women whose husbands earned 4,000 shillings and above were bound to have more health facility deliveries because this acts as an enabling factor than their counterparts married to husbands who earn less than 4,000 shillings. This could be explained by the fact that they have resources that they could use in the course of seeking institutional delivery services as opposed to their counterparts who may not be able to access institutional delivery services due to shortage or lack of needed resources.

However, spousal income level was not significantly associated with place of delivery ($\chi^2=0.539$; df=2; p=0.764; C=0.097). Hence we conclude that spousal income level has no relationship with place of delivery.

4.3.2 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Antenatal Care

Table 4.10 shows the relationship between Socio-Demographic Characteristics and Antenatal care. In this set of tests, the researcher first makes an attempt to determine
whether a relationship exists between age and number of ANC visits made to the clinic before delivery.

Findings in Table 4.10 show that women aged 28 years and above were found to be more likely (90.9%) to make 4 visits and above to the ANC clinic. More than one third (37.7%) of young women below 28 years were observed to make less than the required four visits to the ANC clinic prior to delivery of child born at last birth. A possible explanation for why less than two fifths (37.7%) of women below age 28 years made less than the required four visits could be as a result of lack of information on the required number and timing of visits to the ANC clinic. As reported by Anchang-Kimbi et al., (2014), young age (less than 20 years) is a significant risk factor associated with fewer clinic visits (less than 4).

Indeed, maternal age was significantly associated with the number of ANC visits ($\chi^2=7.063; \text{df}=1; p=0.008; \text{C}=0.190$). These findings are consistent with those of Banda, (2013), Tsegay et al., (2013) and Anchang-Kimbi et al., (2014), that maternal age has an influence on number of ANC visits hence we conclude that maternal age significantly influences number of ANC visits women make before delivery.
Table 4.10: Relationship between Socio-Demographic characteristics of respondents and number of ANC visits

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>&lt;4 visits</th>
<th>4 Visits and above</th>
<th>χ²</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>37.7</td>
<td>62.3</td>
<td>7.063</td>
<td>1</td>
<td>.008**</td>
<td>.190</td>
</tr>
<tr>
<td>28 years and above</td>
<td>9.1</td>
<td>90.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td>7.747</td>
<td>1</td>
<td>.005**</td>
<td>.198</td>
</tr>
<tr>
<td>Married</td>
<td>31.2</td>
<td>68.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>63.2</td>
<td>36.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td>7.674</td>
<td>2</td>
<td>.022*</td>
<td>.198</td>
</tr>
<tr>
<td>Christianity</td>
<td>38.3</td>
<td>61.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>8.7</td>
<td>91.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>37.5</td>
<td>62.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td>24.609</td>
<td>3</td>
<td>.001**</td>
<td>.339</td>
</tr>
<tr>
<td>Nulliparae</td>
<td>69.4</td>
<td>30.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae</td>
<td>24.1</td>
<td>75.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>28.4</td>
<td>71.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>23.3</td>
<td>76.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal Education Level (%)</strong></td>
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<td></td>
<td>4.237</td>
<td>2</td>
<td>.120</td>
<td>.148</td>
</tr>
<tr>
<td>No formal education</td>
<td>27.1</td>
<td>72.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>39.1</td>
<td>60.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>6.133</td>
<td>2</td>
<td>.047*</td>
<td>.186</td>
</tr>
<tr>
<td>No formal education</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>29.9</td>
<td>70.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>46.2</td>
<td>53.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td>1.242</td>
<td>1</td>
<td>.265</td>
<td>.136</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>26.8</td>
<td>73.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td>.255</td>
<td>1</td>
<td>.613</td>
<td>.059</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>19.0</td>
<td>81.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>24.5</td>
<td>75.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01

Findings in Table 4.10 show that more than three fifths (68.8%) of married women made four visits and above, while slightly more than three fifths (63.2%) of women who were single, separated, widowed or divorced made less than four visits before delivery of their
latest child. The above findings suggest that married women have a higher likelihood of having four visits and above than unmarried women. This could be attributed to the fact that they get maternal services support from their spouses either in form of maternal care information, social or financial support. The finding of this study that male spouses had higher level of education than their wives further strengthen the support that women receive for ANC services during pregnancy.

Indeed, marital status was significantly associated with ANC visits ($\chi^2=7.747; \text{df}=1; p=0.005; \text{C}=0.198$). This finding is consistent with that of a study carried out in India by Gupta et al., (2010) and also confirms that of Anchang-Kimbi et al., (2014) who stated that being single is a significant risk factor associated with fewer clinic visits (less than 4).

Table 4.10 further depicts that majority (91.3%) of women who profess Islam and African Traditional Religion (ATR) made four visits and above, while more than one third (38.3%) of Christian women had less than four visits to the clinic before birth of their latest child. These findings show that women who profess Islam and African Traditional Religion have a high likelihood (91.3%) of having made four visits and above. Indeed, religion was significantly associated with ANC visits ($\chi^2=7.674; \text{df}=2; P=0.022; \text{C}=0.198$). The study finding corroborates that of Adamu, (2011) who contends that religion has an influence on number of ANC visits.

Findings in Table 4.10 reveal that more than three fifths (69.4%) of Nulliparae women made less than four visits, while slightly more than three quarters (76.7%) of grand Multiparae women made four and above ANC visits. This finding can be possibly explained by the fact that women of a higher parity have had previous birth experiences
which might have been occasioned by a complication warranting them to make all the required visits to avert any complication that may arise. Indeed, parity was significantly associated with ANC visits ($\chi^2=24.609; \text{df}=3; \text{P}=0.001; \text{C}=0.339$). This finding is in agreement with that of Banda, (2013) who reported that parity is significantly associated with number of visits to the ANC clinic.

Table 4.10 further depicts that slightly less than three quarters (72.9%) of women with no formal education made four visits and above with one half (50.0%) of women with secondary education and above making 4 visits and above. The high (72.9%) number of women with no formal education having had more than four ANC visits and half (50%) of women with secondary education or more having less than four visits could be explained by the fact that most respondents knew about maternal health care services irrespective of their educational status. This suggests that existence of informal means such as radio and television among others could be significant sources of information in educating women of reproductive ages as opposed to formal education only. As argued by Banda, (2013), education level does not seem to influence number of ANC visits to the clinic but those with secondary education were more likely to make more visit to the ANC clinic. In essence, this finding contradicts that of Banda (2013) where more (72.9%) women with no formal education were observed to have had four visits and above.

Further, maternal education is associated with improved health, women empowerment and reduction of gender disparities. However, the relationship between maternal education level and ANC visits was not significant ($\chi^2=4.237; \text{df}=2; \text{P}=0.120; \text{C}=0.148$). This study finding contradict those of (Elo, 1992; Chakraborty et al., 2003; Woldemicael, 2007; Gupta et al.,
2010) who reported that maternal education has a significant bearing on the number of ANC visits.

Results in Table 4.10 also show that four fifths (80%) of women married to men with no formal education made four visits and above, while more than two fifths (46.2%) of women whose spouses had secondary and above level of education made less than four visits. Interestingly, respondents who utilized the services more had spouses with lower levels of education as compared to those who did not utilize them. This could be attributed to the fact that use of antenatal care is not limited to formal education only. Further, Maternity services are now free and there is massive awareness creation by the Ministry of Health (MoH) on utilization of MHCS in the rural areas, in addition to other initiatives such as the Beyond Zero Campaign by the First Lady Margaret Kenyatta.

Indeed, spousal education level was significantly associated with number of ANC visits ($\chi^2=6.133; \text{df}=2; p=0.047; C=0.186$). This study finding corroborate those of Woldemicael, (2007; and Daniels et al., (2013) when they contended that spousal educational level was associated with 4 and above antenatal visits.

Findings of the study in Table 4.10 also show that slightly less than three quarters (73.2%) of women who earned 4,000 shillings and above four visits and above with two fifths (40.0%) of women earning below 4,000 shillings making less than four visits. This finding could be explained on the basis of the Output Based Approach (OBA) program which aims to improve access, equity and uptake of quality reproductive health services to economically disadvantaged women. The women purchase the vouchers at a subsidized price of 100 shillings which entitles them to access reproductive health services such as
Safe Motherhood (SMH), Family Planning (FP) and Gender Based Violence (GBV) recovery services free of charge.

Maternal income was not significantly associated with number of ANC visits ($\chi^2=1.242;\ df=1;\ p=0.265;\ C=0.136$). Notably, this finding is not in tandem with that of Gupta et al., (2010) when they contended that maternal income had a significant influence on the number of ANC visits.

Finally, results in Table 4.10 depict that slightly more than four fifths (81.0%) of women whose spouses earned less than 4,000 shillings made four ANC visits or more compared with (75.5%) of women whose spouses earned 4,000 shillings and above. This finding could be explained by the fact that the Government of Kenya (GoK) abolished maternity fees in all public health facilities through a presidential decree on 1st June 2013 (“MaternalNewbornHealthCare_Kenya_Oct2013.pdf,” n.d.). However, spousal income level was not significantly associated with the number of ANC visits ($\chi^2=0.255;\ df=1;\ p=0.613;\ C=0.059$). Hence we conclude that spousal income level does not influence the number of ANC visits the woman makes during pregnancy.

### 4.3.3 Relationship between Socio-Demographic Characteristics and Utilization of Skilled Birth Attendance (SBA)

Table 4.11 shows the relationship between Socio-Demographic Characteristics and use of Skilled Birth Attendants services. In this study, an attempt was made to understand the relationship between age and Utilization of Skilled Birth Attendance.
Results of analysis in Table 4.11 indicate that slightly less than three fifths (59.5%) of women aged below 28 years did not have SBA service at birth of their latest child while more than half (54.5%) of the women aged 28 years and above had SBA service during their latest birth. This could be explained by the fact that marriage is seen as a sacred institution in the African set up and thus getting children before marriage was a sign of lack of morals. Accordingly, many young women who were not married ran away from their parent’s home and went to give birth elsewhere.

The relationship between age and SBA service was not significant ($\chi^2=1.530; df=1; p=0.216; C=0.099$). This finding contradicts those of Daniels et al., (2013) when they contended that use of SBA was more associated with the youth.

Table 4.11 shows that slightly more than three fifths (60.3%) of married women did not have SBA of child born at last birth, while three quarters (75.0%) of women who were unmarried had SBA services. Being married means one has a partner who could take care of them and that is why most respondents had no skilled attendance at birth, while being unmarried makes one to seek SBA services in case labour pains commence when they are all alone at home. Indeed, marital status was significantly associated with SBA services ($\chi^2=5.634; df=1; p=0.018; C=0.188$). This study’s finding is consistent with that of Daniels et al., (2013) that marital status has a significant association with SBA with single mothers more likely to seek SBA.
Table 4.11: Relationship between Socio-Demographic characteristics of respondents and use of a Skilled Birth Attendant (SBA)

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Skilled Attendance</th>
<th>Unskilled Attendance</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>59.5</td>
<td>1.530</td>
<td>1</td>
<td>.216</td>
<td>.099</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>45.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td>5.634</td>
<td>1</td>
<td>.018*</td>
<td>.188</td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>60.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td>13.463</td>
<td>2</td>
<td>.001**</td>
<td>.284</td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>42.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
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<td>60.0</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>73.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td>16.951</td>
<td>2</td>
<td>.001**</td>
<td>.316</td>
</tr>
<tr>
<td>Nulliparae</td>
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<td>0.0</td>
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<td></td>
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<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>24.1</td>
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<td>Multiparae</td>
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<td>Grandmultiparae</td>
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<td>60.5</td>
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<td></td>
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<td></td>
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<tr>
<td>Maternal Education Level (%)</td>
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<td>.279</td>
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<tr>
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<td>69.1</td>
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</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>47.1</td>
<td></td>
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<td>Secondary and above</td>
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<td>0.0</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
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<td></td>
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<td>1</td>
<td>.451</td>
<td>.106</td>
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<td>34.4</td>
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<td>Primary</td>
<td>40.5</td>
<td>59.5</td>
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<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
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<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td>3.113</td>
<td>1</td>
<td>.078</td>
<td>.233</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td>.037</td>
<td>1</td>
<td>.847</td>
<td>.025</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>63.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Results in Table 4.11 show that less than three fifths (58.0%) of Christians had skilled attendance at birth, while three fifths (60.0%) of women who belong to Islam and African Traditional Religion had no skilled attendance at birth of child born at last birth. Christian women tend to use SBA more (58.0%) than women who profess Islam and ATR who report (60.0%) utilization of unskilled attendance at birth. According to Stenlund, (2012) women belonging to religions other than Islam have higher odds of delivering with assistance of SBA’s. Indeed, religion was significantly associated with use of SBA services ($\chi^2=13.463; \text{df}=2; \text{p}=0.001; \text{C}=0.284$). This finding corroborates that of Stenlund, (2012) who contended that women belonging to other religions had higher odds of delivering with assistance of SBA’s than those of Islamic faith.

Further, findings in Table 4.11 indicate that slightly more than three quarters (75.9%) of Primiparae women had skilled attendance services at birth during latest birth, while more than three fifths (67.9%) of Multiparae women had no skilled attendance during latest birth. Lower parity women are more likely to use SBA than higher parity women because higher parity women have experience due to previous births. As reported by Worku et al., (2013), women who had births for the first time were more likely to use Skilled Birth Attendance services. Indeed, parity was significantly associated with Skilled Birth Attendance ($\chi^2=16.951; \text{df}=2; \text{p}=0.001; \text{C}=0.316$). The study’s finding is consistent with those of (Ochako et al., 2011; Kabakyenga et al., 2012; Worku et al., 2013) who contended that parity has a strong bearing on utilization of SBA.

Table 4.11 also depicts that slightly less than one third (30.9%) of women with no formal education had skilled attendance at birth with all women with secondary and higher
education level background having skilled attendance at birth. Education exposes women to information and knowledge on the importance of utilization of SBA and thus skilled birth attendance increases with secondary education and above. According to (Kabakyenga et al., 2012), women with secondary education and above are more likely to use SBA’s than those with lower levels of education. Indeed, maternal education was significantly associated with Skilled Birth Attendance ($\chi^2=12.934; \text{ df}=2; p=0.002; C=0.279$). This finding is in tandem with those of (Ochako et al., 2011; Worku et al., 2013) who reported that maternal education has a significant bearing on use of SBA.

Table 4.11 further indicates that half (50.0%) of women whose spouses had secondary and higher level of education had skilled attendance services at birth, while more women (65.6%) whose spouses had no formal education had no access to skilled services at delivery. Spousal education level acts as an enabling factor for utilization of SBA. However, spousal education level was not significantly associated with Skilled Birth Attendance ($\chi^2=1.590; \text{ df}=1; p=0.451; C=0.106$). The finding contradicts those of Daniels et al., (2013) when they reported that spousal educational level was significantly associated with assistance at delivery by a trained medical personnel.

Results in Table 4.11 also indicated that three fifths (60.0%) of women who earned more than 4,000 shillings had skilled attendance at birth, while more than three fifths (64.7%) of the women who earned less than 4,000 shillings did not have skilled attendance during the birth of their current child. Maternal income was not significantly associated with Skilled Birth Attendance ($\chi^2=3.113; \text{ df}=1; p=0.078; C=0.233$). The study finding is inconsistent with that of Stenlund (2012) who contended that women belonging to the poor and poorest
wealth groups are more likely to receive unskilled assistance than their counterparts in the richest and richer wealth groups.

Results in Table 4.11 show that more than three fifths (63.2%) of women whose spouses earned less than 4,000 shillings did not receive skilled attendance at birth while (60.5%) of those whose spouses earned more than 4,000 shillings received skilled attendance at birth. These proportions are about the same. Hence, spousal income level is not significantly associated with Skilled Birth Attendance ($\chi^2=0.037; df=1; p=0.847; C=0.025$). Hence we conclude that spousal income level does not have a significant association with use of SBA.

4.3.4 Relationship between Socio-Demographic Characteristics and utilization of maternal health care services as measured by Trimester women sought ANC care

Table 4.12 shows that none of the Socio-Demographic characteristics had a significant association with trimester in which women sought ANC care.

Age ($\chi^2=.001; df=1; p=.982; C=.002$) and marital status ($\chi^2=.224; df=1; p=.636; C=.042$) were not significantly associated with trimester the woman started ANC visits. These findings are inconsistent with those of (Daniels et al., 2013) who stated that age and marital status plays a significant role in use of ANC services within the first trimester. Religion was not significantly associated with trimester ($\chi^2=.941; df=2; p=.625; C=.086$). These findings are inconsistent with those of (Olayinka, Joel, & Bukola, 2012) who contended that there was a relationship between religion and trimester women started their ANC visits.
Table 4. 12: Relationship between Socio-Demographic Characteristics and Trimester women sought ANC care

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>1st Trimester</th>
<th>2nd &amp; 3rd Trimesters</th>
<th>$\chi^2$</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (%)</strong></td>
<td></td>
<td></td>
<td>.001</td>
<td>1</td>
<td>.982</td>
<td>.002</td>
</tr>
<tr>
<td>Below 28 years</td>
<td>24.0</td>
<td>76.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>23.8</td>
<td>76.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td>.224</td>
<td>1</td>
<td>.636</td>
<td>.042</td>
</tr>
<tr>
<td>Married</td>
<td>24.6</td>
<td>75.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>18.2</td>
<td>81.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td>.941</td>
<td>2</td>
<td>.625</td>
<td>.086</td>
</tr>
<tr>
<td>Christianity</td>
<td>21.1</td>
<td>78.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>28.3</td>
<td>71.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td>.302</td>
<td>2</td>
<td>.860</td>
<td>.049</td>
</tr>
<tr>
<td>Nullipara</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>28.6</td>
<td>71.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multipara</td>
<td>22.4</td>
<td>77.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultipara</td>
<td>26.2</td>
<td>73.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>.803</td>
<td>2</td>
<td>.669</td>
<td>.080</td>
</tr>
<tr>
<td>No formal education</td>
<td>26.3</td>
<td>73.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>20.8</td>
<td>79.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>0.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>.842</td>
<td>2</td>
<td>.656</td>
<td>.085</td>
</tr>
<tr>
<td>No formal education</td>
<td>31.0</td>
<td>69.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>24.2</td>
<td>75.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td>.899</td>
<td>1</td>
<td>.343</td>
<td>.136</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>22.6</td>
<td>77.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td>.089</td>
<td>1</td>
<td>.765</td>
<td>.042</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>17.6</td>
<td>82.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>21.2</td>
<td>78.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *; $p \leq 0.05$ **; $p \leq 0.01$

Additionally, Parity was not significantly associated with trimester women started their ANC visits ($\chi^2=.302$; df=2; p=.860; C=.049). These findings are inconsistent with those of
(Daniels et al., 2013) who contended that parity has a bearing on trimester that women start receiving antenatal care.

Maternal education was not significantly associated with trimester ($\chi^2 = .803; \text{df}=2; \text{p} = .669; \text{C} = .080$). The study findings are consistent with those of (Daniels et al., 2013) who stated that education level did not have a significant relationship with use of ANC during the first trimester. In addition, spousal education was not significantly associated with trimester ($\chi^2 = .842; \text{df}=2; \text{p} = .656; \text{C} = .085$). The study findings are contrary to those of (Daniels et al., 2013) who contended that spousal education level was associated with trimester women start receiving antenatal care.

Maternal income ($\chi^2 = .899; \text{df}=1; \text{p} = .343; \text{C} = .136$) and spousal income ($\chi^2 = .089; \text{df}=1; \text{p} = .765; \text{C} = .042$) were not significantly associated with the trimester they started ANC visits.

### 4.3.5 Women’s Preference and Perception of ANC Services Offered at the Healthcare Facilities

Results from Table 4.13 indicate that, more than four fifths (80%) of women visiting a dispensary, a health centre or a sub-district hospital reported being happy with the facility space, neatness and adequacy of privacy that was provided. Of women visiting both categories of facilities, less than a tenth (6.4%) of them preferred being attended to by a male provider with more than two fifths (45.6%) of those visiting the dispensary preferring a female health care provider and those attending health centres and sub-district hospital accounting for less than two fifths (35.9%) preference of female health care provider. This
could possibly be explained by either cultural issues surrounding child birth in the community.

Table 4.13: Women’s preference and perception of ANC services offered in the health facilities

<table>
<thead>
<tr>
<th></th>
<th>Dispensary (n= 125)</th>
<th>Health Centre + Sub district hospital (n= 64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waiting time (minutes) Mean</strong></td>
<td>39.08</td>
<td>54.61</td>
<td>.010**</td>
</tr>
<tr>
<td><strong>Happy with waiting time (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Yes</td>
<td>99.2</td>
<td>85.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with facility space (%)</strong></td>
<td></td>
<td></td>
<td>.301</td>
</tr>
<tr>
<td>Yes</td>
<td>83.2</td>
<td>88.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.8</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with neatness (%)</strong></td>
<td></td>
<td></td>
<td>.327</td>
</tr>
<tr>
<td>Yes</td>
<td>93.6</td>
<td>89.1</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6.4</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td><strong>Adequate privacy (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>92.0</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred gender of provider (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Male</td>
<td>6.4</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45.6</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>48.0</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred type of provider (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Doctor</td>
<td>53.6</td>
<td>53.1</td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>12.0</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td>20.8</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Traditional Birth Attendant</td>
<td>4.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>A combination</td>
<td>4.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>5.6</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td><strong>Would you come back to this facility (%)</strong></td>
<td></td>
<td></td>
<td>.129</td>
</tr>
<tr>
<td>Yes</td>
<td>91.2</td>
<td>93.8</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.6</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>7.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td><strong>Will you recommend this facility to others (%)</strong></td>
<td></td>
<td></td>
<td>.413</td>
</tr>
<tr>
<td>Yes</td>
<td>96.8</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.4</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Table 4.13 further presents women’s preferences and perceptions of ANC services that are offered at the dispensaries, health centres and sub-district hospital in Ganze District. More than 90% of women attending dispensaries or either health centre or sub-district hospital reported that they would return to the same health facility or would recommend it to others. The mean waiting time in the health centre and sub-district hospital per visit was significantly higher (54.61 minutes) than that in the dispensaries (39.08 minutes). Contrary to expectations, more (99.2%) women were happy with the waiting time at the dispensaries compared to health centres and sub-district hospitals (85.9%), with the latter being higher in the health care delivery system hierarchy in the country.

Results in Table 4.13 show that more than two fifths (48.0%) of women at the dispensaries had no preference on the preferred gender of provider with slightly more than three fifths (60.9%) at the health centres and sub-district hospitals having no preference for gender of health provider. This could be attributed to the fact that both are trained professionals as supported by field interviews and observations. Findings show that half (50%) of women visiting both set of facilities preferred being attended to by a doctor with only 1.6% of those visiting health centres and sub-district hospitals preferring TBA’s as opposed to 4% of those visiting the dispensary. There is a significant relationship between category of facility and waiting time (p=0.010) and the preferred type of provider (p=0.001).

4.3.6 Proportion of women who felt reassured about common pregnancy related concerns by health care providers

Study findings on reassurance patterns that women received from their providers about common pregnancy related issues are avidly presented in Table 4.14. Overall, among the
women who attended either a health facility or sub-district hospital, slightly more than four fifths (83%) felt reassured about the position of the baby and that of their own health. However, 87.8% of women who visited dispensaries did not receive information about the size of their unborn baby with more than three fifths (62.7%) receiving information about foetal abnormality. More than three fifths (68.3%) of our total sample who visited the dispensary had received information about the position of the baby, over three fifths (62.6%) on foetal abnormality and over four fifths (82.9%) on mothers own health and those who visited either a health centre or a sub-district hospital had received information about the position of the baby (83.9%), size of the baby (58.1%), foetal abnormality (67.7%) and mothers own health (87.1%) and felt reassured except that only (12.2%) of those who visited dispensaries received information on the size of their babies.

Significantly, those women visiting either a health centre or a sub-district hospital feel much more reassured about the four highlighted pregnancy related complications than those visiting the dispensaries. Women visiting a health centre or a sub-district hospital were significantly associated with receiving information about the position of the baby (p=0.23) and the size of the baby (p=0.001). These findings corroborate those of a study carried out in Gambia by Jallow et al., (2012) which observed that category or type of health facility had a bearing on receiving information about position and size of the unborn baby with women attending private health facilities likely to receive such information than those attending public health facilities.
### Table 4.14: Proportion of women who were reassured about common pregnancy related concerns by their service providers

<table>
<thead>
<tr>
<th></th>
<th>Women who felt reassured</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dispensary (n= 125)</td>
<td>Health Centre + Sub district hospital (n= 64)</td>
<td>$\chi^2$</td>
<td>df</td>
</tr>
<tr>
<td><strong>Position of the baby (%)</strong></td>
<td></td>
<td></td>
<td>5.138</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>68.3</td>
<td>83.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>31.7</td>
<td>16.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size of the baby (%)</strong></td>
<td></td>
<td></td>
<td>43.435</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>12.2</td>
<td>58.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>87.8</td>
<td>41.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foetal abnormality (%)</strong></td>
<td></td>
<td></td>
<td>.475</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>62.6</td>
<td>67.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>37.4</td>
<td>32.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mother’s own health (%)</strong></td>
<td></td>
<td></td>
<td>.542</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>82.9</td>
<td>87.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>17.1</td>
<td>12.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

However, no significant relationship exists between receiving information on foetal abnormality ($p=0.491$) and mothers own health ($p=0.461$) and the category of health facility one visits. This finding is inconsistent with that of Jallow et al., (2012) who contended that category of facility had a significant association with receiving information about foetal abnormality and the heath of the mother during the pregnancy term. Thus, findings in Table 4.14 clearly show that women of reproductive age (18-49) in Ganze District would prefer to visit either a health centre or a sub-district hospital owing to reassurance they get concerning complications to their unborn children and that of their own health.
4.4: Logistic Regression Analyses

Binomial logistic regression was undertaken because it examines the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). Binomial logistic regression was undertaken for the three dependent variables: Place of Delivery, Number of ANC visits to the clinic before birth of current child and Skilled Birth Attendance which is without doubt the single most critical intervention in reducing maternal mortalities and morbidities (Mpembeni et al., 2007).

In this part of the analysis, only five socio-demographic variables were included in the model: age, marital status, religion, education and parity. The rationale behind this is that preliminary analysis showed that only these five socio-demographic variables were significant either at the bivariate and multivariate level of analysis.

4.4.1 Binary Logistic Regression on Socio-Demographic Characteristics and Institutional Delivery Service Utilization

In Table 4.15 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization of Institutional Delivery services. Results from Table 4.15 indicate that except for mother’s age and level of education, all the selected socio-demographic characteristics are significant predictors of utilization of institutional delivery services in Ganze district.
Table 4.15: Binary Logistic Regression results with odds ratios and 95% confidence interval for Institutional Delivery service utilization

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Married</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td><strong>0.019</strong></td>
<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Christian</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td><strong>0.004</strong></td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Some formal education</td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td><strong>0.330</strong></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td>153</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Primiparae®</td>
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<td></td>
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</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.915</td>
<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td>(1.618-21.668)</td>
<td><strong>0.007</strong></td>
</tr>
</tbody>
</table>

Missing Cases =36 ® - Reference category; Note: p values *:p≤ 0.05 **: p≤ 0.01

From Table 4.15, it is evident that Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) likely to have institutional delivery service utilization than Primiparae women. Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) likely to have institutional delivery service utilization than Primiparae women. Institutional delivery service utilization was also more common among women belonging either to Islam, ATR and those women who professed no religion (AOR 3.091,
95% CI, 1.447-6.602, p=0.004). The probability was much less for women who were unmarried (AOR 0.170, 95% CI 0.039-0.749, p= 0.019).

4.4.2 Regression on Socio-Demographic Characteristics and Number of ANC Visits

In Table 4.16 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the number of ANC visits made to the clinic.

Table 4. 16: Binary Logistic Regression results with odds ratios and 95% confidence interval for Number of ANC visits

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td></td>
<td>1.766</td>
<td>0.844</td>
<td>4.384</td>
<td>1</td>
<td>5.849</td>
<td>(1.120-30.553)</td>
<td>0.036*</td>
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<tr>
<td>28 years and above</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td>-1.320</td>
<td>0.573</td>
<td>5.297</td>
<td>1</td>
<td>0.267</td>
<td>(0.087-0.822)</td>
<td>0.021*</td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Christian</td>
<td></td>
<td>0.080</td>
<td>0.362</td>
<td>0.048</td>
<td>1</td>
<td>1.083</td>
<td>(0.533-2.199)</td>
<td>0.826</td>
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<tr>
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<tr>
<td>Respondents Education status</td>
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<td></td>
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<tr>
<td>No formal education</td>
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<td>-0.153</td>
<td>0.407</td>
<td>0.141</td>
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<td>0.859</td>
<td>(0.387-1.906)</td>
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<td>Some formal education</td>
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<td></td>
</tr>
<tr>
<td>Parity</td>
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<td>.577</td>
<td>10.515</td>
<td>1</td>
<td>6.499</td>
<td>(2.097-20.145)</td>
<td>0.003**</td>
</tr>
<tr>
<td>Primiparae</td>
<td>29</td>
<td>1.508</td>
<td>0.481</td>
<td>9.841</td>
<td>1</td>
<td>4.516</td>
<td>(1.761-11.585)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
<td>0.031*</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
<td></td>
</tr>
</tbody>
</table>

® - Reference category; Note: p values *:p ≤ 0.05 **: p ≤ 0.01
Results from Table 4.16 indicate that mother’s age, marital status and parity are significant predictors of the number of ANC visits women will make before delivery in Ganze district.

From Table 4.16, it is evident that women aged above 28 years (AOR 5.849, 95% CI 1.120-30.553, p=0.036) and those who were single, separated, divorced and widowed (AOR 0.267, 95% CI 0.087-0.822, p=0.021) were more likely to make four or more antenatal visits to the clinic before delivery of their latest child. Further, parity was found to have a significant impact on the number of ANC visits with Primiparae women being six times (AOR 6.499, 95% CI 2.097-20.145, p=0.001) more likely to make four or more ANC visits than Nulliparae women; Multiparae women being five times (AOR 4.516, 95% CI 1.761-11.585, p=0.002) likely to make four or more visits than Nulliparae women and lastly Grandmultiparae women being four times (AOR 3.722, 95% CI 1.129-12.273, p=0.031) likely to make four or more visits to the ANC clinic than Nulliparae women.

4.4.3 Binary Logistic Regression on Socio-Demographic Characteristics and Skilled Assistance during Delivery

In Table 4.17 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization skilled attendance during delivery. Results from Table 4.17 indicate that apart from mother’s age educational status, all other selected socio-demographic characteristics are significant predictors of utilization of skilled assistance during delivery in Ganze district.
Table 4.17: Binary Logistic Regression results with odds ratios and 95% confidence interval for Skilled Assistance during Delivery

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B) CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430 (0.142-1.306)</td>
<td>0.137</td>
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<td>Marital status</td>
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</tr>
<tr>
<td>Married</td>
<td></td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170 (0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Other statuses</td>
<td>153</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091 (1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091 (1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091 (1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Respondents education status</td>
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<td>No formal education</td>
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<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
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<td>0.672 (0.302-1.495)</td>
<td>0.330</td>
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<tr>
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<tr>
<td>Primiparae®</td>
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<td>0.549</td>
<td>12.301</td>
<td>2</td>
<td>0.002**</td>
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</tr>
<tr>
<td>Multiparae</td>
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<td>1.915</td>
<td>0.549</td>
<td>12.301</td>
<td>2</td>
<td>0.002**</td>
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<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921 (1.618-21.668)</td>
<td>0.007**</td>
</tr>
</tbody>
</table>

Missing cases = 36 © - Reference category; Note:p values *: p ≤ 0.05 **: p ≤ 0.01

Table 4.17 depicts that Muslim women, those who believed in ATR and who professed no religion were three times (AOR 3.091, 95% CI 1.447-6.602, p=0.004) more likely to use the assistance of a Skilled Birth Attendant than Christian women. Further, women who were unmarried were (AOR 0.170, 95% CI 0.039-0.749, p=0.019) less likely to use the assistance of a Skilled Birth Attendant. Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) more likely to use a Skilled Birth Attendant than
Primiparae women and Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) more likely to use a Skilled Birth Attendant during birth than Primiparae women.

**4.4.4 Binary Logistic Regression on Socio-Demographic Characteristics and Trimester women started attending ANC clinic**

In Table 4.18 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the trimester that women started making ANC visits to the clinic. Results from Table 4.18 indicate that all selected socio-demographic characteristics are not significant predictors of the timing that women start making ANC visits to the clinic in Ganze district.

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
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<td><strong>Age at most recent birth</strong></td>
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</tr>
<tr>
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<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038</td>
<td>(0.306-3.515)</td>
<td>0.952</td>
</tr>
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<td>28 years and above</td>
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<td></td>
</tr>
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</tr>
<tr>
<td>Married</td>
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<td>0.388</td>
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<td>0.224</td>
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<td>1.474</td>
<td>(0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td>Other statuses</td>
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<td></td>
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</tr>
<tr>
<td><strong>Religious Affiliation</strong></td>
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</tr>
<tr>
<td>Christian</td>
<td></td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789</td>
<td>(0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td><strong>Respondents Education status</strong></td>
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<td></td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1</td>
<td>1.326</td>
<td>(0.516-0.558)</td>
<td></td>
</tr>
</tbody>
</table>
Results in Table 4.18 show that there exists no significant relationship between the socio-demographic characteristics of the respondents and the trimester that they first started attending ANC clinic. However, women aged above 28 years (AOR 1.038, 95% CI 0.306-3.515, p=0.952) and those who were unmarried (AOR 1.474, 95% CI 0.296-7.344, p=0.636) were one time more likely to make their first visit to the ANC clinic during the first trimester of their pregnancy. Multiparae women (AOR 1.708, 95% CI 0.284-10.295, p=0.559) were two times more likely to make their first ANC visit during the first trimester than Primiparae women with Grandmultiparae women (AOR 1.438, 95% CI 0.207-9.997, p=0.714) being one more time likely to make their first ANC visit during the first trimester than Primiparae women.
CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Summary
This section presents a summary of the comparison of results of the relationship between the socio-demographic characteristics of the study respondents and variables used to measure the utilization of MHCS at both the Bivariate and Multivariate Logistic Regression Analyses to try and find out what determines utilization of maternal healthcare services in Ganze district. The findings of this study as shown in Table 5.1, Table 5.2, Table 5.3 and Table 5.4 confirm that the four indicators of utilization of maternal health care services are affected differently by the various socio-demographic characteristics in the entire Ganze district at the bivariate and multivariate levels of analyses. Further, the differences in the utilization of the different maternal health care services as espoused by the two levels of analyses will enable us to clearly focus on what should be done in an effort to improve utilization levels.

5.1.1 Comparison of results of relationship between socio-demographic characteristics and institutional service delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses
Table 5.1 shows the relationship of all the socio-demographic characteristics of the respondents with institutional delivery service utilization both at the Bivariate and Multivariate levels of analyses to find out what predicts institutional delivery service utilization.
Table 5.1: Comparison of results of relationship between Socio-Demographic characteristics and Institutional Service Delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>$\chi^2$</td>
<td>$p$</td>
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<tr>
<td>Age</td>
<td>1.539</td>
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<td>Religious affiliation</td>
<td>21.384</td>
<td>0.001**</td>
</tr>
<tr>
<td>Respondents education</td>
<td>13.612</td>
<td>0.009**</td>
</tr>
<tr>
<td>Parity</td>
<td>18.216</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: $p$ values *:* $p \leq 0.05$ **:* $p \leq 0.01$

Findings in Table 5.1, interestingly show that while at the Bivariate level analysis, maternal education was significantly ($p=0.009$) related to institutional delivery services utilization, at the Multivariate level analysis it has no significant bearing on the utilization of the institutional delivery services ($p=0.330$). This is not to imply that education is not an important predictor of institutional delivery service utilization at all since it exposes women to access and knowledge on maternal health issues. This finding could be attributed in the way the variable education was coded and it could also be explained by the fact that there has been massive campaigns by the GoK and MoH in sensitizing the population about the importance of utilization of maternal health care services to avert the dangers that are associated with pregnancy and child birth through other media such as the radio, television and even the chiefs ‘barazas’. Marital status of the mothers is insignificant ($p=0.056$) at the bivariate level analysis but proves to be significant ($p=0.019$) at the multivariate level analysis. Religion and Parity of the mothers were found to be both significant at the bivariate and multivariate levels of analyses.
5.1.2 Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.2 shows the relationship of all the socio-demographic characteristics of the respondents and number of ANC visits that women make to the health facilities both at the Bivariate and Multivariate levels of analyses to find out what predicts the number of ANC visits that mothers make to the health facility.

Table 5.2: Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>$p$</td>
</tr>
<tr>
<td>Age</td>
<td>7.063</td>
<td><strong>0.008</strong></td>
</tr>
<tr>
<td>Marital Status</td>
<td>7.747</td>
<td><strong>0.005</strong></td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>7.674</td>
<td><strong>0.022</strong></td>
</tr>
<tr>
<td>Respondents’ education</td>
<td>4.237</td>
<td>0.120</td>
</tr>
<tr>
<td>Parity</td>
<td>24.609</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: $p$ values *:$p \leq 0.05$ **:$p \leq 0.01$

From Table 5.2, it is interesting to note that despite the fact we expected education to be a significant determinant of the number of ANC visits that mothers make to the clinic due to access and use of knowledge on maternal health issues acquired during formal education, maternal education is insignificant both at the Bivariate and Multivariate level analyses. Further, while religious affiliation is significant at the Bivariate level ($p=0.022$), it is insignificant ($p=0.826$) at the Multivariate level analysis after controlling for the effects of the other variables under study.

Age of the mothers, marital status and parity prove to be significant at the 95.0%
The study found out that mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the number of visits they make to the health facility at the Multivariate regression analysis level as indicated by these findings.

**5.1.3 Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendants at the Bivariate and Multivariate Logistic Regression Analyses**

Table 5.3 shows the relationship of all the socio-demographic characteristics of the respondents and the use of Skilled Birth Attendants (SBA) both at the Bivariate and Multivariate levels of analyses to find out what predicts utilization of Skilled Birth Attendants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>1.530</td>
<td>0.216</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.634</td>
<td>$0.018^*$</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>13.463</td>
<td>$0.001^{**}$</td>
</tr>
<tr>
<td>Respondents education</td>
<td>12.934</td>
<td>$0.002^{**}$</td>
</tr>
<tr>
<td>Parity</td>
<td>16.951</td>
<td>$0.001^{**}$</td>
</tr>
</tbody>
</table>

Note: p values $*: p \leq 0.05 \quad **: p \leq 0.01$

From Table 5.3, apart from the age of the mothers; marital status, religious affiliation, maternal education, and parity all prove to be significant at the 95.0% confidence interval at the Bivariate level of analysis. However, while marital status, religious affiliation and parity still prove to be significant at the Multivariate level of analysis and thus strongly
predicting the utilization of Skilled Birth Attendants, but maternal education does not.

5.1.4 Comparison of results of relationship between Socio-Demographic characteristics and trimester mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.4 shows the relationship of all the socio-demographic characteristics of the respondents and the trimester that mothers started attending ANC clinic both at the Bivariate and Multivariate levels of analysis to find out what predicts utilization of maternal health care services.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(\chi^2)</td>
<td>(p)</td>
</tr>
<tr>
<td>Age</td>
<td>0.001</td>
<td>0.982</td>
</tr>
<tr>
<td>Marital Status</td>
<td>0.224</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>0.941</td>
<td>0.625</td>
</tr>
<tr>
<td>Respondents education</td>
<td>0.803</td>
<td>0.669</td>
</tr>
<tr>
<td>Parity</td>
<td>0.302</td>
<td>0.860</td>
</tr>
</tbody>
</table>

Note: \(p\) values *: \(p \leq 0.05\) **: \(p \leq 0.01\)

From Table 5.4, it is evident that all the socio-demographic characteristics have no significant bearing on the trimester that women start attending antenatal clinic for their check-ups both at the Bivariate and Multivariate levels of analyses.

5.2 Conclusion

The findings of this study confirm that a woman’s marital status, religious affiliation and parity are strong predictors of institutional delivery service utilization. Further, mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the
number of visits that the mothers make to the health facility and lastly marital status, religious affiliation and parity strongly predict utilization of SBA’s. In addition, Parity proved to be a strong predictor of utilization of almost all the four maternal health care services apart from trimester that women started attending ANC clinic as it predicts their utilization both at the bivariate and multivariate level analysis at 95.5% confidence interval.

More women who are unmarried, those affiliated to non-Christian faiths, low parity women and those aged 28 years and above utilize maternal health care services more.

5.3 Recommendations

Evidence from this study enables making of suggestions and recommendations in three vital areas. First, the findings have some implications on the formulation of public health policies that will lower maternal morbidities and mortalities by improving utilization of MHCS. Second, it has practical implications on public health care practice and lastly it has implications for further research to uncover whatever has not been researched on in this study and others and thus update sociological knowledge on this important topic to help reduce maternal morbidities and mortality.

5.3.1 Recommendations for Policy

1. It is recommended from the findings of this study that stakeholders in maternal health care such as the National and County governments and the Civil Society Organizations make deliberate policies that will involve women aged 28 years and above as role models to sensitize other women on the importance of making the required number of ANC visits.
2. Policy provisions can also be developed by county governments and the civil society organizations to enhance women utilization of maternal health care services through an incentive and reward system to those women who make the required ANC visits and deliver in institutional care or under SBA supervision.

3. It is recommended that the national government come up with a policy that will ensure that maternal health care services are provided in most public health care facilities on a daily basis and not on specific days so that expectant women can access the services whenever they need them.

4. Further, deliberate policy should be formulated to encourage county governments to have ANC facilities at sub county levels. Alternatively, it can be a matter of policy, especially at the county government level that most health facilities should have at least a delivery room and trained personnel to provide an opportunity for expectant women to access professional ANC services and deliver under the care of professional staff. Such a policy will enhance women delivery under professional care reducing maternal morbidity and mortality and that of their new born babies.

5. It is recommended through the Ministry of Education, Science and Technology that the government strengthen affirmative action as a matter of policy to ensure that girl child education is prioritised in order to improve educational standards of women. This is envisioned as a long term policy strategy that will provide them with avenues and opportunities of acquiring information about use and importance of utilizing maternal health care services.
6. It is recommended that public health policy on awareness on the importance of utilization of institutional delivery service be initiated with a clear focus on high parity women, women with low education levels and women who professed Islam and ATR. Such a policy strategy can be a panacea for ensuring enhanced utilization of institutional delivery to this segment of the population especially in the study area.

5.3.2 Recommendations for Practice

1. With regards to the prevailing pattern of late and irregular antenatal clinic attendance, it is recommended that there be awareness creation by maternal health care stakeholders such as governments and NGOs on (ANC timing) when mothers should commence their ANC visits and the number of visits they should make until they give birth.

2. It is recommended that there be awareness creation by the National and County governments, NGOs and FBOs on the importance of using institutional delivery service or skilled midwifery assistance/skilled birth attendance at every child birth as it helps in reducing maternal and child deaths.

3. It is recommended to health and development workers that improving community awareness and perception on skilled providers and their care through community meetings by targeting women who prefer non skilled health care providers and those who lack awareness on the importance of utilization of maternal health care
services to themselves and their unborn children will help in reducing maternal and child deaths.

4. It is recommended that a doctor be posted to serve in the district as most mothers said they would like to be attended to by a trained medical doctor and only Clinical Officers and nurses were found at their work stations during the study period.

5. It is recommended that at least one ambulance should be supplied to the district and it be stationed at a central facility where it can easily coordinate in case maternal emergencies occur.

6. It is recommended that efforts be made by the health providers to ensure patients privacy during ANC and delivery care is kept to improve institutional delivery thus enhancing utilization of a major maternal health care service thus reducing maternal mortality.

5.3.3 Recommendations for Further Research

1. Given the high maternal morbidity and mortality not only in the study area but in Kenya and the region, it is prudent for researchers to understand the why with regard to the persistency of the problem and the how best can governments and the civil society mitigate the problem.

2. It is recommended that further research be carried out to establish why is it that women who profess Islam make the required (four and more) number of ANC visits but rarely have Institutional delivery service utilization.
3. More research is also needed to bring out the rural urban differential in not only maternal health care utilization but the differential factors with significance influence on ANC visits and institutional delivery.

4. Further research is also prudent to focus on other determinants of maternal health care utilization not considered in this study. Understanding the multiplicity of factors with an influence on maternal health care utilization is key in the development of interventions that will work in reducing maternal morbidity and mortality including that of their infants.
REFERENCES


Appendix 1: Consent Form

CONSENT FORM

PART 1: INFORMATION SHEET

I am Stanley Wechuli Wanjala a postgraduate student at Pwani University registration number C50/PUC/2098/11 and E-mail address: (stanleywanjala@gmail.com) supervised by Professor Halimu Suleiman Shauri- E-mail address hshauri@yahoo.com. I am carrying out a research titled “Determinants of Maternal Health care Utilization in Ganze District, Kilifi County of Kenya.” I am going to give you information about all what the research entails and invite you to be part of this research as a respondent. If you have any questions later, you can ask.

Purpose of research

Maternal and child health are key health issues in the world. The reason I am doing this research is to find out the factors that affect utilization of maternal health care services and to establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care utilization in Ganze district. By so doing, I will be able to advice the government and other health stakeholders on best practices in maternal health and help in policy formulation.

The reason why I am inviting you to be a respondent is because I am inviting all women between the ages of 18-49 years to participate in this research. Your participation in this research is entirely voluntary- It is your choice whether to participate or not.

The information that you give during this research will be kept confidential. Information about you that will be collected during the research will be put away and no one but the researcher (I) will be able to see it. Any information on you will have a number on it instead of your name for confidentiality purposes. You can ask any questions regarding the study or your participation in this study.

PART 2: CERTIFICATE OF CONSENT

I have read the foregoing information or it has been read to me. I have had the opportunity to ask questions about it and any questions that have been asked have been answered to my satisfaction.

I consent voluntarily to participate as a respondent in this research.

Name of participant: _______________________________________________________

Signature of participant: ____________________________________________________

Date: ____________________________________________________________________
Appendix 2: Interview Schedule

DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN GANZE DISTRICT, KILIFI COUNTY OF KENYA

INTERVIEW SCHEDULE

Dear respondent,
Please answer the questions to the best of your understanding. Your cooperation in this study is highly appreciated and all the information you provide will be treated with utmost confidentiality. Thank you for your cooperation.

Name of Health Facility: __________________________________________________________
Category of Facility: [ ] Dispensary [ ] Health Centre [ ] Sub-District Hospital [ ] District Hospital
Ownership: [ ] Government [ ] Private for Profit [ ] Faith Based [ ] NGO/CBO
Division: _________________________________________________________________
Location: _________________________________________________________________
Sub-Location: ____________________________________________________________

PART I: SOCIO-DEMOGRAPHIC CHARACTERISTICS

Q1. Could you please tell me your age?
   a) 18-22 years [ ]
   b) 23-27 years [ ]
   c) 28-32 years [ ]
   d) 33-37 years [ ]
   e) 38-42 years [ ]
   f) 43-47 years [ ]
   g) 48-52 years [ ]

Q2. What is your marital status?
   a) Single [ ]
   b) Married [ ]
   c) Divorced [ ]
   d) Widowed [ ]
   e) Separated [ ]
   f) Other (State) __________________________________________________________

Q3. What is your religious affiliation?
   a) Christian (Catholic) [ ]
   b) Christian (Protestant) [ ]
   c) Christian (SDA) [ ]
   d) Jewish [ ]
   e) Muslim [ ]
   f) Hindu [ ]
Q4. What is your level of education?
   a) Non Formal Education
   b) Some primary education
   c) Primary school Completed
   d) Some Secondary education
   e) Secondary school completed
   f) University (Bachelors)
   g) Other (State) ____________________________

Q5. If married, or in a stable relationship, could you kindly state your spouse’s level of education?
   a) Non Formal Education
   b) Some primary education
   c) Primary school Completed
   d) Some Secondary education
   e) Secondary school completed
   f) University (Bachelors)
   g) Other (State) ____________________________

Q6. (a) If have some level of education, have you undergone any formal professional training since completion/dropping out of school?
   a) Yes
   b) No
   (b) If Yes State which one(s)

Q7. What is your main source of income?
   a) Farming
   b) Government employee
   c) Employment private sector
   d) Employment NGO/CBO
   e) Employment FBO
   f) Small business person
   g) Casual Employee
   h) No source of income at the moment
   i) Other (State) ____________________________

Q8. What would you consider as the main source of income for your spouse/partner?
   a) Farming
   b) Government employee

---

1 Traditional Religion include nominal Christian religions such as Akorino, Legio Maria, Roho Msalabwa, Dini ya Msambwa etc
Q9. What is your average monthly earning from all your sources of income?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8001 to 10,000 [ ]
   f) 10,000 to 12,000 [ ]
   g) 12,001 to 14,000 [ ]
   h) 14,001 to 16,000 [ ]
   i) 16,000 to 18,000 [ ]
   j) 18,001 to 20,000 [ ]
   k) KShs. 20,001 or more (State amount)  
      ___________________________________

Q10. What is the approximate average monthly earnings of your spouse or partner from all the sources?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8001 to 10,000 [ ]
   f) 10,000 to 12,000 [ ]
   g) 12,001 to 14,000 [ ]
   h) 14,001 to 16,000 [ ]
   i) 16,000 to 18,000 [ ]
   j) 18,001 to 20,000 [ ]
   k) KShs. 20,001 or more (State amount)  
      ___________________________________

Q11. (a)How many children do you have in total? (Indicate number by Gender)
      Males: ________  Females: ________  Total: ________
      ___________________________________

(b) Could you kindly indicate their age beginning from the eldest to this one?
Q 12. Who makes the decision for you to seek maternal health care?
   - Self
   - Husband
   - Husband and me
   - If other explain___________________________

SECTION B: KNOWLEDGE OF ANC

Q1. How did you first know about ANC?
   - Through friends
   - School
   - Hospital
   - Others

Q2. Are you aware of the services rendered at ANC Clinic?
   - Yes
   - No

Q3. ANC helps detect complications during pregnancy
   - Yes
   - No

Q4. ANC helps reduce maternal mortality and morbidity
   - Yes
   - No

SECTION C: ACCESS TO REPRODUCTIVE HEALTHCARE

Q1. Have you ever delivered any of your children in the hospital?
   - Yes
   - No
Q2. Kindly indicate the place of birth of your children beginning from the first born to the last born. (1=Hospital with the help of a trained health professional; 2=Home with the help of Traditional Birth Attendant; 3= At home alone or with the help of a relative; 4=At the Traditional Birth Attendants special clinic/home; 5 = On the way to hospital with the help of a stranger/relative; 6=Other (State))

<table>
<thead>
<tr>
<th>Child number</th>
<th>Place of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
</tbody>
</table>

Q3. (a) Reflecting back on your first pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)______________________________ ______________________
(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

___________________________________________________ ______________________

___________________________________________________ ______________________

___________________________________________________ ______________________

(c) How many visits did you make to the ante natal clinic before the delivery of your first born child?

______________________________ ______________________

(d) How many visits did you make to the post natal clinic after the delivery of your first born child?

______________________________ ______________________

Q4. (a) Reflecting back on your last pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)______________________________ ______________________
(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

___________________________________________________ ______________________

___________________________________________________ ______________________

_______
(c) How many visits did you make to the ante natal clinic before your latest delivery?
___________________________________________________

(c) How many visits did you make to the post natal clinic after your latest delivery?
___________________________________________________

Q5. How far is the nearest clinic offering maternal health services? (How long does it take for an adult to walk to the facility?) NB: one Kilometre may require 15 minutes of walk.
___________________________________________________

Q6. In your view, is the distance to the facility a concern? (Explain your answer)
   Yes [ ]
   No [ ]
Reason:
___________________________________________________

Q7. In your view, is the attitude of the health care providers a concern? (Explain your answer)
   Yes [ ]
   No [ ]
Reason:
___________________________________________________

Q8. In your view, does your religion influence how you seek ANC services? (Explain your answer)
   Yes [ ]
   No [ ]
Reason:
___________________________________________________

Q9. When visiting the nearest health facility during your pregnancy clinic appointments, what was the predominant means of transport used? (Probe for cost and duration in minutes to facility)

<table>
<thead>
<tr>
<th>Means</th>
<th>Tick one used</th>
<th>Cost (KShs.)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Motorcycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bicycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10. In the facility you visited (for those who did not visit, the nearest healthcare facility), what maternal healthcare services does that facility offer? (Kindly indicate whether those attending received the services)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>Availability</td>
<td>Received service in last pregnancy</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasound services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q11. During your last visit to the maternal health care facility, did you receive information on the following services?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Position of the baby</td>
</tr>
<tr>
<td>Size of the baby</td>
</tr>
<tr>
<td>Foetal abnormality</td>
</tr>
<tr>
<td>Your health status</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q12.(i) are you aware of family planning methods?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Yes [ ]</td>
</tr>
</tbody>
</table>
b) No [ ]
(ii) Have you ever used any family planning method?
   a) Yes [ ]
   b) No [ ]
   (iii) If YES which method have you used? *(Probe whether he is currently using the method)*

<table>
<thead>
<tr>
<th>Methods</th>
<th>Ever Used</th>
<th>Currently Using</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pills (Postinor 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IUD (intrauterine device)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Norplant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Condoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sexual Abstinence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Tubal ligation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Calendar/safe days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13. (i) Have you ever stopped using any of the family planning methods at any one time?
   Yes [ ]
   No [ ]
   (ii) If you have ever stopped, kindly provide reason for your decision

Q14 Are you aware of any taboos related to child birth in your community?
   Yes [ ]
   No [ ]

If yes, list them

b) Do you believe in these taboos?
   Yes [ ]
   No [ ]

If yes, which taboos do you believe in?
Perceptions: Maternal and Child health practices

Q1. When visiting the nearest health facility during your pregnancy clinic appointments, how many minutes did you wait before the healthcare provider attended to you?

___________________________________________________

Q2. Are you happy with the time you spent with the health care provider during your appointments?
   Yes [ ]
   No [ ]

a) If yes, why?
   ________________________________
   ________________________________
   ________________________________

b) If No, would you prefer to have?
   A lot more time [ ]
   A little more time [ ]
   Time is about right [ ]

b) Are you happy with the facility space?
   Yes [ ]
   No [ ]

Explain___________________________________________________
   ________________________________
   ________________________________

C) Are you happy with the facility neatness?
   Yes [ ]
   No [ ]

Explain___________________________________________________
   ________________________________
   ________________________________

d) Who is your preferred gender of provider?
   Male [ ]
   Female [ ]
   No preference [ ]

Explain___________________________________________________
   ________________________________
   ________________________________

e) Who is your preferred type of provider?
   Doctor [ ]
   Nurse [ ]
Midwife [ ]
Traditional Birth Attendant [ ]
A combination [ ]
No preference [ ]

Explain ____________________________________________________________

____________________________________________________________________

f) Would you come back to this facility?
   Yes [ ]
   No [ ]
Don’t know [ ]
Give reasons for your answer

____________________________________________________________________

g) Will you recommend this facility to others?
   Yes [ ]
   No [ ]
Don’t know [ ]
Give reasons for your answer

____________________________________________________________________

Q3. Are you happy with the privacy that you were accorded during the consultation with the health care provider?
   Yes [ ]
   No [ ]

Q4. How would you rate the following services that you received at the health facility?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of food served</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reception upon arrival at the health facility</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Attitude of medical personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of equipments/facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q5. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your first visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Palpation of the abdomen
Tetanus vaccination
Weight measurement
Height taken
Blood pressure taken
Iron supplementation
Urine test
Stool test
Anti-malarial treatment
Health talk
Provision of PMTCT
Normal Delivery Services
C-Section Deliveries
Registration of births
Immunization of newborn
Provision of treated bed nets
Counselling on family planning options

Q6. If you were given another option (healthcare facility) in your first visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain______________________________________________________________

Q7. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your last visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
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<tr>
<td>Tetanus vaccination</td>
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<tr>
<td>Weight measurement</td>
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<tr>
<td>Height taken</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
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<tr>
<td>Urine test</td>
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<tr>
<td>Stool test</td>
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<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>Yes</td>
<td>No</td>
<td>Explain</td>
<td></td>
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</tr>
<tr>
<td>-----------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>Normal Delivery Services</td>
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</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
<td></td>
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<tr>
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</tr>
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<td>Provision of treated bed nets</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q8. If you were given another option (healthcare facility) in your last visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain________________________________________________________

Q9. Any additional comments
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Thank you for your cooperation.
Appendix 3: Certificate of Ethical Approval

CERTIFICATE OF ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:
Mr. Stanley Wechuli Wanjala

REFERENCE NO: ERC/MA/003/2014

ENTITLED: Determinants of Maternal Care Service Utilisation in Ganze District, Kitui County of Kenya

TO BE UNDERTAKEN AT: Ganze, Kitui, Kenya

FOR THE PROPOSED PERIOD OF RESEARCH HAS BEEN APPROVED BY THE ETHICS REVIEW COMMITTEE AT ITS SITTING HELD AT PWANI UNIVERSITY, KENYA ON THE 15TH DAY OF JANUARY 2014

CHAIRMAN

SECRETARY

LAY MEMBER

15 JAN 2014
Appendix 4: Graduate School Research Authorization

Pwani UNIVERSITY
SCHOOL OF GRADUATE STUDIES
P.O. Box 193 – 80100
KILIFI, KENYA

TEL: 254-41-7525102/3/4/6
FAX: 254-41-7522125
email: info@pwaniuniversity.ac.ke
website: www.pwaniuniversity.ac.ke

Ref: PU/SGS/PRAL/83/vol.1

16th January, 2014

Mr. Stanley W. Wanjala
School of Humanities and Social Sciences
PWANI UNIVERSITY

SUBJECT: RESEARCH AUTHORIZATION

Following approval of your Masters research proposal by the Ethics Review Committee on 15th January, 2014, we hereby write to formally grant authorization for you to conduct research for a Master’s thesis entitled “Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya.”

You are advised to collect your original Certificate of Ethical Approval from the Ethics Review Committee office.

We wish you all the best as you embark on this critical stage of your Masters programme.

Yours faithfully,

Prof. Mlewa C. Mwatete
DEAN, SCHOOL OF GRADUATE STUDIES

Cc
✓ Deputy Vice Chancellor (ASA)
✓ Dean, School of Humanities and Social Sciences
✓ Chairman, Social Sciences
Appendix 5: Research Authorization from Department of Health

COUNTY GOVERNMENT OF KILIFI
DEPARTMENT OF HEALTH
KILIFI COUNTY HOSPITAL

Telephone: (041) 7522777
Fax: (041) 7522025
Email: kdh@komri-welcome.org
When Replying/Telephoning quote Ref No.: ST.1/38/VOL.I/

OFFICE OF THE MEDICAL SUPERINTENDENT
KILIFI COUNTY HOSPITAL
P. O. Box 9 - 80108
KILIFI
DATE: 31st March, 2014

Stanley Wechuli Wanjala
Pwani University
PO Box 195-80108
Kilifi County,
KENYA

Dear Mr Stanley. W. Wanjala,

RE: AUTHORIZATION TO CARRY OUT STUDY IN GANZE

The research committee of health Kilifi has received your request to carry out a study on “Determinants of Maternal Care Service Utilization in Ganze District, Kilifi County of Kenya”.

After going through the proposal, we grant you approval to proceed with your research. This should not exceed a time period of 90 days. Please note you can always ask for an extension, should you need it.

Upon completion of the study, you will be required to share your results with the County Health Management Team.

Good luck!

Dr Barbara Mambo, Chairperson
Kilifi County Research Coordination Committee
KILIFI

Cc:
The Executive Secretary of Health- KILIFI COUNTY
The Director of Health Services-KILIFI COUNTY
Appendix 6: Map of Ganze District
DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN
GANZE DISTRICT, KILIFI COUNTY OF KENYA

STANLEY WECHULI WANJALA

C50/PUC/2098/11

A thesis submitted in partial fulfilment of the requirements for the Degree of Master
of Arts of Pwani University

© August, 2015
DECLARATION

Declaration by the Student

This thesis is my original work and has not been presented for a degree in any other University or any other award

Signature.........................................             Date........................................

Stanley Wechuli Wanjala
C50/PUC/2098/2011

Declaration by the Supervisors

We confirm that the work reported in this thesis was carried out by the candidate under our supervision. No part of this Thesis may be reproduced without the prior written permission of the author and/or Pwani University

Signature.........................................             Date........................................

Prof. Halimu Suleiman Shauri; PhD
Sociologist; Department of Social Sciences
(Pwani University)

Signature.........................................             Date........................................

Dr. Francis Wokabi; PhD
Philosopher; Department of Philosophy and Religious Studies
(Pwani University)
DEDICATION

This thesis is dedicated to the pillars of my life: God, my adoring parents who remain my source of inspiration, my siblings and fiancée.
ACKNOWLEDGEMENT

First, my heartfelt gratitude to my supervisors: Prof. Dr. Halimu Suleiman Shauri and Dr. Francis Gikonyo Wokabi. Thank you for your sage advice, guidance, encouragement and intellectual input from the initial to the final stage of this thesis development that enabled me to have an in-depth understanding of the subject under study. To my parents, thanks for the never ending love and unwavering support. My fiancée Yvonne Kuhnke, thanks for your unconditional love, encouragement and understanding even on days that you could not get my full attention. My colleague Bonventure Obeka, your constructive and insightful criticism, collaboration and willingness to assist when called upon have been tremendous assets. My colleagues and lecturers in the Department of Social Sciences, study respondents and medical staff from health facilities in Ganze District, thank you for making the study possible.
ABSTRACT

Maternal health care service utilization is an important health issue related to both maternal and child survival as it reduces maternal mortality and morbidity as well as improving the well being of mothers and their children before, during and after birth. Considering low utilization of maternal health care service especially in Sub-Saharan Africa, understanding what determines utilization becomes important. This study set out to examine determinants of maternal health care service utilization by women of reproductive ages (18-49 years) with a view to enhancing the achievement of Millennium Development Goal (MDG) number five (5). Four dependent variables: place of delivery, antenatal care, skilled attendance at birth and trimester women attended Antenatal Clinic (ANC) as well as six independent variables representing predisposing characteristics (mothers age at birth, marital status, religion, educational attainment, parity) and enabling factors (husbands educational attainment, income levels) were selected. Survey research design was used in data collection and the main data collection tool was an interview schedule. Multi-stage cluster sampling was used in sampling the health care facilities and convenient sampling was used to sample the respondents. Both descriptive and inferential statistics such as logistic regression analysis were applied to the analysis of the collected data. The key findings of the study show that religion, parity and maternal education were significant predictors of women’s place of delivery. Further, maternal age, marital status, and parity were found to be significantly associated with the number of ANC visits women make to the clinic. Marital status, religion and parity are all related to use of a skilled Birth Attendant at birth. Parity emerged to be the strongest predictor among all the other indicators of maternal health care service utilization considered in the study. In conclusion, the study was able to find out factors that affect utilization of maternal health care services in Ganze district thus achieving the study objective. Strategies to promote the utilization of Maternal Health Care Services should thus focus on the relevant predictors established in the models based on the binomial regression analyses. The findings of the study may help the Ministry of Health, policy makers and health related agencies and stakeholders to design appropriate and cost-effective intervention programmes targeting areas with most needs. This may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality while enhancing reproductive health and resource efficiency. Lastly, this study aims at stimulating further research in this area, thus bridging knowledge gaps and updating scientific knowledge on this important topic.
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List of Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

ATR – African Traditional Religion

ANC – Antenatal Care

CBS – Central Bureau of Statistics

ERC – Ethical Review Committee

FBO – Faith Based Organization

GDP – Gross Domestic Product

GoK- Government of Kenya

HBM - Health Belief Model

HIV – Human Immunodeficiency Virus

KDHS – Kenya Demographic and Health Survey

KHHEUS – Kenya Household Expenditure and Utilization Survey

KNBS – Kenya National Bureau of Statistics

KNHA- Kenya National Health Accounts

MDG’s – Millennium Development Goals

MHCS – Maternal Healthcare Services

MLR – Multivariate Logistic Regression
MoH – Ministry of Health

NACOSTI – National Commission for Science, Technology and Innovation

NCAPD- National Coordinating Agency for Population and Development

NGO – Non-Governmental Organization

OBA- Output Based Approach

PHC- Primary Health Care

PNC – Postnatal Care

POD – Place of Delivery

SBA – Skilled Birth Attendant

SDC – Social Demographic Characteristics

SMI – Safe Motherhood Initiative

SPSS – Statistical Package for Social Sciences

TBA – Traditional Birth Attendant

TI- Transparency International

UN – United Nations

UNFPA – United Nations Fund for Population Activities

UNICEF – United Nations International Children’s Emergency Fund
WB – World Bank

WHO – World Health Organization
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Three out of the eight Millennium Development Goals (MDG’s) relate to health. Goal number four is aimed at reducing child mortality rates, goal number six focuses on combating HIV/AIDS, malaria and other diseases and goal number five, which is the focus of this study, is aimed at improving maternal health by reducing maternal mortality by three quarters (75%) and achieving universal access to reproductive health between 1990 and 2015. This goal is monitored by two indices namely: maternal mortality ratio and proportion of births attended by skilled health personnel.

Globally, in the year 2008, there were an estimated 358,000 maternal deaths and of this, the developing world accounted for (355,000) or 99% (WHO, UNICEF, UNFPA, & The World Bank, 2010). These figures have financial implications for the health sector of affected countries. On the one hand, high income countries with high standards of living spend an average of 7.0% of Gross Domestic Product (GDP) on health and on the other hand, low income countries, with low standards of living, spend an average of only 4.2% on the health sector (Cieza & Holm, 2010). Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit, Dolea, & Braichet, 2010).

In the year 2000, 251,000 maternal deaths occurred in Africa and 40% of the deliveries were attended by a Skilled Birth Attendant (World Health Organization, 2005). Sub-
Saharan Africa accounted for slightly more than half (270,000) of the maternal deaths in 2005. An increase in maternal deaths over the years can be observed. Nearly three fifths (204,000) of the maternal deaths in 2008 occurred in the sub-Saharan Africa (WHO et al., 2010). Though there is a slight drop in maternal mortality rates from 2005-2008, the number is still high.

Kenya is one of the countries that suffered 65% of maternal deaths in 2008. It accounted for 7,900 (2.2%) of the global maternal deaths (WHO et al., 2010). According to the 2008-09 Kenya Demographic and Health Survey (KDHS) maternal mortality in Kenya remains high at 7.9% as only 44% of births are managed by health professionals and 43% are delivered in health facilities. These statistics clearly show that over half (56%) of deliveries are done by non-professionals and more than half (57%) of deliveries are done outside healthcare facilities. Between the periods 2003 – 2008/09, there was a rise in maternal mortality rates in Kenya from 0.6% to 0.8%, indicating an increase of 0.2% (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). This is not a good indication especially that MDG number five aims at improving maternal health care.

According to an official in the Ministry of Public Health, (Masha Joseph, 2011), quoted in the Standard Newspaper of Wednesday 11th May 2011, only 44% of deliveries in the Coastal Region are done in hospitals with many pregnant women relying on Traditional Birth Attendants (TBAs), while about 70% of 170,000 women still give birth at home. The Kilifi District Strategic Plan 2005-2010 points out that accessibility of health services was low and over half (57%) of the population lived over five kilometres to the nearest health facility (National Coordinating Agency for Population and Development, 2005). It is
against this background that a study of the determinants of maternal health care utilization in Ganze district in Kilifi County, Coastal Region of Kenya was mooted.

1.2 Statement of the Problem

The MDG’s are fresh in our minds and we have approached 2015. Millennium Development Goal number five, in particular, was aimed at reducing maternal mortality rate by 75.0% between 1990 and 2015 and to achieve universal access to reproductive health. The fact that the KDHS 2008-2009 reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities is a clear indication that there is underutilization of maternal health care professionals and facilities in the country, especially in the rural areas. What determines maternal health utilization therefore needs to be understood to improve this situation with a view of achieving MDG number five. In fact, it is very clear throughout the literature reviewed that there is a dearth of recent data on the determinants of maternal health care utilization. This is despite the fact that maternal healthcare services utilization is essential for the enhancement of maternal and child health. Accordingly, little was known about the current magnitude of use and factors influencing the use of maternal healthcare services, especially in Ganze district where the study was conducted. This study therefore examined the factors that determined the utilization of maternal health care service in Ganze district in Kilifi County, Coastal Region of Kenya.

1.3 Purpose of the Study

The purpose of the study was to examine factors that influence maternal health care service utilization by women of reproductive ages (18-49 years) with a view of enhancing the
achievement of MDG number five (5).

1.4 Specific Objectives

On the basis of the study’s purpose, the objective of the study was to:

1. Find out the influence of socio-economic and demographic factors on utilization of maternal health care services.

2. Establish the facility-specific factors that influence the utilization of maternal health care services in Ganze district.

3. Establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care service utilization in Ganze district.

1.5 Research Questions

1. What is the influence of socio-economic and demographic factors on utilization of maternal health care services?

2. Why are some healthcare facilities utilized more than others by women of reproductive ages (18-49 years) seeking maternal health care services?

3. What is the influence of the preferences and perceptions of women of reproductive ages (18-49) with regard to ANC services offered at the healthcare facilities in Ganze district on maternal health care utilization?

1.6 Significance of the Study

The results of this study could be beneficial as it was envisaged to add to the existing body
of scientific knowledge on the factors that influence maternal health care service utilization and the challenges that women face as they seek maternal health care services. This may act as a springboard for further research in this area and thus bridge knowledge gaps and update scientific knowledge on this important topic.

To the government, Ministry of Health as well as other health providers, findings of this research may help them work towards policy and practical improvements in provision of maternal health care services thus reducing the number of maternal deaths consequently contributing to the attainment of MDG number 5.

Third, this research may help the government and other key health care stakeholders avoid wastage of resources because they will be able to know the determinants of maternal health care service utilization. Accordingly, appropriate and cost-effective intervention programmes can be designed and targeted to the areas with most needs. Significantly, this may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality and enhancement of reproductive health with desirable consequences on the health status of women and the population.

1.7 Scope and Limitations of the Study

1.7.1 Scope of the Study

The study was carried out in Ganze District of Kilifi County in the Coastal Region of Kenya.
1.7.2 Limitations of the Study

This was a survey research and as such attempted to understand study variables at one point in time. Accordingly, the study was limited in explaining causality and trends over time than a longitudinal or control group design on the determinants of maternal health care services utilization.

Due to ethical and legal considerations, the study only focused on women aged (18–49 years). Thus, the study was limited in that the views of women below the age of 18 years and above 49 years were not included in the study and thus research results cannot be generalized outside of the sampled population of women aged (18–49) years old.

The study was limited in that the researcher had to employ the services of an interpreter because some of the study respondents did not understand English and so interviews were conducted in either Kiswahili or Kigiryama.

1.8 Definition of Key Concepts used in the Study

**Antenatal care:** Care given to a pregnant woman from the time of conception to the onset of labour

**Distance:** The location of the health care facility in relation to the patient’s place of residence

**Grandmultiparae:** A woman who has given birth to five or more children

**Maternal Morbidity:** Is defined as “chronic and persistent ill-health occurring as a consequence of complications of pregnancy and child birth” (Ogunjuyigbe & Liasu, n.d.)
Maternal Mortality or Maternal Death: Is “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes” (“WHO | Maternal mortality ratio (per 100 000 live births),” n.d.)

Multiparae: A woman who has given birth to two or more children

Nulliparae: A woman who has never given birth to a child

Parity: Birth order in a nuclear family

Postnatal care: Care provided following childbirth to both the mother and the infant

Primiparae: A woman who has given birth to only one child

Providers: Health staff at the selected Maternal and Child Health (MCH) facilities serving in ANC at the time of the study and those who were available for interview

Skilled Birth Attendant: Is “an accredited health professional- such as a mid-wife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborns)” (World Health Organization, 2004b).

Skilled Birth Attendance: Process by which a pregnant woman and her baby are provided with adequate care during pregnancy, labour, birth and postpartum and immediate newborn periods (Graham et al., 2001).
**Trimester:** “One of the three divisions of three months each during pregnancy, in which different phases of foetal development take place” (“Trimester definition - MedicineNet - Health and Medical Information Produced by Doctors,” n.d.)

**Utilization of maternal health care services:** Utilization of maternal health care services in this study was described in relation to the requirements by World Health Organization (1994; 2004) which only considers it medically satisfactory when:

- Women receive antenatal care during the first trimester of their pregnancy period
- Women undertake 4 or more antenatal visits before delivery of their children
- Women are attended to at delivery by trained medical personnel/practitioner
- Women deliver in a health facility

**Waiting time:** The duration of time (minutes) a mother has to wait before he/she is attended to by a medical professional
CHAPTER TWO: LITERATURE REVIEW

2.1 Utilization of Health Care Services

Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems, or achieving a positive body image (Cockerham, 2012). In this discourse, health care utilization refers to the use of health care services by people (Awoyemi, Obayelu, & Opaluwa, 2011). Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries (Mekonnen & Mekonnen, 2002). Thus, in order for an individual to utilize health services, they must have both physical access to a health facility and the health facility must also be able to provide the required services; the patient must also be able to pay for the health care services offered either through cash or by use of health insurance or any third party means (Shauri, 2010).

The 2005/2006 Kenya National Health Accounts (KNHA) report notes that the top two “key challenges to achieving better health status in Kenya” are “inequitable access to health services” and “shortage of qualified health workers, especially those with appropriate skills” (Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009). Access to care has most often been considered as an expression of the time or monetary costs associated with obtaining medical care, such as waiting time to get an appointment or to see a doctor or medical practitioners once in their offices, and distance one has to cover (Aday & Andersen, 1977).
Some researchers place emphasis on the idea that access as a concept is best considered in the context of whether the people actually in need of health care receive it or not (Taylor et al., 1975). People should try to distinguish between access and availability. The latter is the presence of health care resources in a given locality/area. Even though information on the number of physicians in an area may be available, we may still not know the accessibility of such health care providers in terms of the patients' ability to pay the fees they are charged, the lack of transportation or traffic congestion typical of the place, the barriers resulting from ethnic discrimination, or office hours that cannot accommodate the patient's own needs or schedules (Aday & Andersen, 1977).

Utilization of health services is a complex behavioural phenomenon, related to the availability, quality and cost of services, social structure, health beliefs and characteristics of the users (Chakraborty, Ataharasul, Chowdhury, Bari, & Akhter, 2003; Ebuehi et al., 2006). More critical for this study, women's utilization of maternal health care facilities is an important health issue with regard to the well being and survival of both the mother and the child during pregnancy, child birth and postpartum period and has implications on the maternal and child mortality rates in human society (Gazali et al., 2012; WHO, 2012).

In February 1987, three international organizations namely: United Nations Fund for Population Activities (UNFPA), the World Bank (WB), and World Health Organization (WHO) sponsored a global campaign in Nairobi in form of a conference to reduce maternal mortality. As a consequence, the Safe Motherhood Initiative (SMI) was adopted to reduce the high rate of women dying during pregnancy and childbirth. The event was
aimed at raising awareness about the numbers of women dying each year from complications of pregnancy and childbirth (Starrs, 2006).

The SMI recommended that all countries provide three types of maternity care services which are vital for all expectant women namely prenatal care, delivery care, and postnatal care (United Nations, 2000a). Prenatal care services include encouraging a woman with a normal pregnancy to make at least four visits to a skilled health attendant during her pregnancy (with more visits by women with pregnancy complications), and promoting information about maternal nutrition and iron supplements to reduce anaemia, underweight and under-nutrition among pregnant women and new mothers. To provide delivery care during childbirth, all member countries were recommended to promote deliveries in health facilities and to promote the attendance of skilled health personnel including a doctor and/or person(s) with midwifery skills who can diagnose and manage obstetrical complications as well as normal delivery (Pandey et al., 2011; Cohen, 1987).

More significantly to note in this thesis is that, while motherhood is often a positive and fulfilling experience, for many women it is associated with suffering, ill-health and sometimes even death (WHO, 2012). It is thus imperative that ways to mitigate factors responsible for low utilization of maternal services be developed. However, the development of effective strategies to curb maternal deaths hinges on the identification of factors responsible for low utilization of such services underscoring the need for the present research. Furthermore, even though such studies have been carried out in Kenya, no such study has been conducted so far in Ganze district.
2.2 Status of Health Care Utilization in the World

Although utilization is an important indicator of health seeking behaviour, health status, cost and quality of services, it is not necessarily guaranteed by the availability of health care facilities (Wamai, 2009). A report carried out by the World Health Organization (2010) in 39 countries reveals that in more than half of the 27 out of the 39 countries, utilization of health care facilities was only at public facilities and was skewed towards outpatient services. More so, in the Dominican Republic, Brazil, Nepal and the Philippines between 50-60% of hospitalizations were in public health care facilities (Saskena, Xu, Elovainio, & Perrot, 2010).

Health conditions are different for urban and rural areas. Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit et al., 2010). Indeed, a study carried out in Ethiopia shows that the coverage of maternity care services is very low and that utilization of maternal health care services is lowest in rural areas (Mekonnen & Mekonnen, 2002).

According to the findings of a study carried out in rural Zimbabwe on socio-economic status and health care utilization, all forms of health care tended to be utilized by those of high or medium-high socio-economic status rated (65%) of the study subjects. This clearly indicates that the socio-economic status of an individual affects his/her health care utilization behaviour. The report further shows that seventy-one (71%) percent of respondents utilizing health services were employed by the government, private sector (72%), the church (71%), Community Based Organizations (78%) and others (64%).
Health services tended to be utilized more by employed respondents. Only traditional health services were equally utilized by unemployed respondents accounting for 50% of the users (Kevany et al., 2012).

In Kenya, there is uneven distribution of health care facilities across the country’s eight regions. The central region has about double the number of facilities per population as compared to Nyanza and Western regions (Wamai, 2009). Health care utilization varies greatly across all the eight regions of the country. More precisely, North Eastern records the lowest health care utilization rate, with 63.4% of all those who reported being ill never seeking treatment in the health care facilities, which leaves only 36.6% seeking treatment whereas Nairobi region, which is the capital city of Kenya, having the highest rate (90.6%) of utilization.

According to the 2003 Kenya Household Expenditure and Utilization Survey (KHHEUS), of all those people reporting illness, 77.2% sought health care service thus leaving 22.8% not seeking health care service. It also shows an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people which translates to an annual utilization rate of 1.92 visits per person per year (Republic of Kenya, 2004).

It is important to mention that the urban population has a higher likelihood of visiting a health care facility (81.5%) when ill as compared to their rural counterparts (75.9%) despite the fact that the average cost for outpatient utilization in urban areas is twice that of rural areas (Republic of Kenya, 2004). Despite this scenario, people in the rural areas still don’t seek health care services very often. This indicates that cost still remains a barrier to utilization of health care facilities and services as health care costs (44%) and the long
distance to the health facility (18%) were cited as the main barriers to health care utilization by those who reported being ill (Republic of Kenya, 2004).

Females reportedly make 1.2 times as many outpatient visits per capita (2.1 visits per year) as did their male counterparts (1.7). Government facilities are utilized more for outpatient services accounting for 51% of the visits, private and mission facilities account for 27% and 8% of the visits respectively, while traditional healers account for a negligible proportion of services (1%). This disparity might be as a result of the distance one has to travel and the cost of seeking health care in the various facilities available (Republic of Kenya, 2004).

Some health facilities at the rural level lack essential resources and the basic assets available are either insufficient or dilapidated. Furthermore, most rural facilities do not even have wards to admit critically sick patients. Due to poor health infrastructure, patients walk for long distances to reach the available health care facilities. Despite the high demand from the community for health care services, most rural health facilities are still lagging behind in the delivery of services (Transparency International, 2011).

The lack of equipment and other core supplies has negative impacts on the performance of health facilities. Lack of adequate health facilities and poor infrastructure forces people to walk for long distances to seek health care services; leading to some patients resorting to alternative means of treatment. This has the potential of leading to underutilization of available health care facilities (Transparency International, 2011).
According to the Kilifi District Strategic Plan 2005-2010, there were 73 health facilities distributed throughout the district. The plan asserts that accessibility of health services was low and over one half (57%) of the population lived over five kilometres to the nearest health facility. The doctor - patient ratio was 1:100,000 population which is a manifestation of staff shortages in the area (The National Coordinating Agency for Population and Development, 2005).

Ganze district, like most rural areas in Kenya, has poor health service coverage and delivery (Transparency International, 2011). Most trained medical attendants including birth attendants prefer working in urban areas as opposed to rural areas and thus health facilities in rural areas are under-staffed (Epuu, 2010). This study was able to shed some light on the status of the health care system in Ganze District.

2.3 Global Trends in the Utilization of Maternal Health Care Services

Maternal and child health are both indicators to a society’s level of development as well as to the performance of the health care delivery system (Central Bureau of Statistics (CBS)[Kenya], Ministry of Health (MOH)[Kenya], & ORC Macro, 2004). A study carried out in Peru on the effects of education on utilization of maternal health care services shows that there is a strong positive relationship between education and the use of maternal health care services (Elo, 1992).

A woman’s autonomy or level of independence in decision making is important in explaining utilization of maternal and child health care services. Urban residence, and
husband’s education have all been found to have a positive relationship to antenatal care utilization (Woldemicael, 2007; Dairo & Owoyokun, 2010).

A cross sectional study in India by (T. R. Jat, Ng, & San Sebastian, 2011) on the factors affecting the use of maternal health services in Madhya Pradesh state found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services. Women in urban areas tended to use maternal health care services more than those living in the rural areas. The levels of skilled attendance at delivery and postnatal care decreased steadily with increased birth order (T. R. Jat et al., 2011). It was also found out that an increase in the education of the mother enhances the use of the three indicators of the use of maternal health services namely prenatal care, delivery care, and postnatal care. Finally, child parity seemed to affect the use of skilled attendance at delivery and postnatal care.

Another study by Mondal (2009) carried out in Bangladesh found out that the level of education (both of the wife and husband) increased the likelihood of seeking help from a qualified medical professional. Women who reside in urban areas had a higher odd of seeking medical assistance than those in rural areas (ibid). Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious taboos. Women from families with a high socio-economic status are more likely to receive treatment from a doctor or nurse.

From the above studies, we can be able to deduce that socio-economic status as indicated by, level of education (both of the wife and husband), place of residence and religion increase the probability that women of reproductive ages will utilize maternal health care
services. Interestingly though, no study has focused on whether the attitude of health care providers towards the patients affects maternal health care utilization. Additionally, no study has focused on the attitude of the health care practitioners towards their work and utilization of maternal healthcare services by pregnant women. It is within the confines of this study therefore to find out whether the attitude of health care providers towards their work and patients determines utilization of maternal health care services.

2.4 Maternal Health Care Utilization in Africa

A study carried out in Ethiopia on the utilization of maternal health care services found out that there was low coverage of maternity service in the country. The place of residence, woman’s education, marital status, religion, parity and number of children under five years were found to have an important influence on utilization of maternal health services by women of reproductive ages. There was high level of utilization of maternal health services among urban women compared with their rural counterparts (Mekonnen & Mekonnen, 2002).

Additionally, married women were observed to be more likely to use antenatal care than their unmarried counterparts. Religion was also found to be an important predictor of antenatal care utilization. Among urban women, utilization of antenatal care is higher for those with two or more children than for those with one child. On the other hand, utilization of delivery care services is lower for those with two or more children than those with one child (Mekonnen & Mekonnen, 2002).
In another study carried out in Ethiopia on factors influencing the use of maternal health care services, it was found out that education of women determines use of antenatal care in that utilization increased with education level. Religion also affects use of antenatal care in that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs. Marital status and religion also had an impact in determining the use of antenatal care (Mekonnen & Mekonnen, 2003; Mekonnen & Mekonnen 2002).

A qualitative study carried out in rural Gambia on access to emergency obstetric care found out that structural factors in maternal health care provision discourage women from seeking care. For instance, where pre-natal care was provided on specific days in each community during week days, it hinders other people from attending. There may exist difficulties in transportation, such as poor condition of the road, lack of readily available transport, inadequate means of transportation, poor provider attitude towards patients, fear of punishment by health care providers based on previous experiences or just gossip can lead to delays in the decision making process of visiting a health facility by patients (Cham et al., 2005).

A study carried out on the utilization of antenatal care services in a Nigerian teaching hospital found out that over two fifths (47%) of the women started attending antenatal clinic only in the third trimester of the pregnancy period despite the fact that antenatal care services in the state hospital that the study was carried out was offered free of charge (Peltzer & Ajegbomogun, 2005).
In another study conducted in Nigeria, the use of maternal health services was significantly related to the level of maternal education, maternal age and marital status. Higher use was positively related to knowledge of where the Primary Health Care (PHC) service was located. Respondents with more than 4 children underutilized available maternal health services and utilization of maternal health services by respondents was significantly related to satisfaction with quality of services received (Ebuehi et al., 2006). Women’s and husband’s education and place of residence have strong positive associations with health care utilization (Woldemicael, 2007).

In Africa, all the reviewed studies have focused on determinants of maternal health care utilization such as maternal education, religion, parity, marital status and residence. However, limited literature none has focused on whether distance from health care facility has an effect on the utilization of maternal health care services. Few studies have also been carried out to find out the effects of waiting time at the reception by the patients before being attended to and the utilization of the health facility. Thus, this underscores the need for the present study in trying to find out the influence of how far one resides from a health facility and utilization of the health facility and the effect of how long a mother waits before being attended to on the utilization of maternal health care. The study thus sought to know how socio-economic and demographic as well as facility specific factors influence utilization of Maternal Health Care Services (MHCS).

2.5 Utilization of Maternal Health Care Services in Kenya

The 2003 Kenya Demographic and Health Survey indicated that almost 90% of Kenyan women received antenatal care from a medical professional with 18% being attended to by
a doctor, 70% by a nurse or midwife while 10% received no antenatal care at all (Central Bureau of Statistics (CBS)[Kenya] et al., 2004).

In a study carried out in Kenya by Fotso et al., (2009), it was found out that women’s overall autonomy is insignificant in health seeking behaviour. Further, women with at least secondary education were more likely to deliver in a health facility in general or in an appropriate health facility compared to those with no education. The likelihood of delivering at a health facility in general and in the well equipped facilities in particular significantly decreases as parity increases.

Another study carried out using data from the 2003 KDHS found out that young women mostly used skilled professional assistance during delivery. Rural women were less likely to deliver with the assistance of either a Traditional Birth Attendant (TBA) or skilled professional. Women from rich households were more likely to deliver with a TBA or skilled professional. Educated women were more likely to deliver with assistance of skilled professionals as opposed to non-educated. Women with more than 2 children were less likely to deliver with the assistance of TBA or skilled professionals compared to those with 1 child (Ochako et al., 2011).

According to a study carried out in Nyanza region of Kenya, it was found out that the higher the parity, the greater the chances of a mother delivering at home. Conversely, health facility deliveries were greatest among births to lower parity women. A person’s level of education affects how a person utilizes the health facility. Rural residence is associated with higher likelihood of home deliveries where 63% of births occur at home. However, those residing in urban areas had a higher chance of health institution delivery
with 78% births delivered in health care facilities. Lower economic status at home, medium and high economic status health institution, older mothers’ and young health institution also affects place of delivery with high chance of mothers delivering at home. In a nut shell, the study found out that the place of delivery is affected by parity, level of education, place or residence, economic status and age of the mother (Owino, n.d.).

From the reviewed literature, most studies globally, in Africa and Kenya have focused on the determinants of maternal health care utilization such as education, religion, parity and age but a limited number of studies have been carried out in Ganze district which is the study area. This therefore underscores the need for the present research which seeks to establish the determinants of maternal health care utilization in Ganze district in the Coastal Region of Kenya.

2.6 Summary of Research Literature on Maternal Health Care Utilization

In as much as most reviewed studies have focused on the determinants of maternal health care utilization and inform us of the effects of maternal education, religion, parity, marital status and place of residence on maternal health care service utilization, no such focus is evident in the literature on the rural district of Ganze. This underscores the need for the present research in trying to establish the factors associated with maternal health care utilization in Ganze.

Furthermore, all studies that have been reviewed in this work only concentrate on socio-demographic factors such as maternal education, religion, parity, marital status and place of residence on maternal health care service utilization but there is less focus on the effects of
the attitude of health care practitioners on the utilization of maternal health care services. Accordingly, the study attempted to find out the effects of the attitude of health care practitioners and utilization of maternal health care services. More so, limited attention was paid to whether the distance of a health care facility from a patient’s residence affects their utilization of maternal health care services. This study sought to fill this important gap in knowledge.

It is proper to note that limited focus was also given to the effect of waiting time before one was attended to by a medical practitioner in hospital and the utilization of maternal health care facility. The present study went a step further in trying to find out whether the amount of time one has to wait before being attended to by medical personnel has an impact on the utilization of maternal health care services.

At another level, some studies have dealt with challenges faced by expectant mothers as they seek maternal health care services but none enumerates the coping strategies these women use to respond to the challenges. For instance, a qualitative study carried out in rural Gambia found out that structural factors in maternal health care provision discourage women from seeking care (Cham et al., 2005). Despite these challenges that have been enumerated, we are not told what coping strategies these women use to address such challenges.

Finally, it is proper to also note that almost all the literature reviewed has focused on the socio-economic factors that affect maternal health care utilization overlooking facility specific factors, perceptions and preferences of women of child bearing ages that may also affect maternal health care utilization. The study sought to establish facility specific factors,
perceptions and preferences of women that affect maternal health care utilization with an aim of making recommendations to improve the state of maternal and child health in the study area.

2.7 Theoretical Framework

This study was understood and conducted within the framework of Symbolic Interactionism. Symbolic Interactionism is a micro level theoretical approach that focuses on social interactions in specific situations. It has roots in the thinking of Max Weber (1864-1920), a German Sociologist and George Herbert Mead who emphasized understanding a particular setting from the point of view of the people in it (Giddens & Sutton, 2009).

The core principles of social interaction theory include meaning, language and thought. Meaning arises in the process of interaction between people and are handled in and modified through an interpretive process used by the person in dealing with things he/she encounters. Language is the vehicle through which meanings that arise out of our thoughts are transported in social interactions.

This theory was helpful in trying to understand the meanings that people attach to certain symbols so that they seek maternal health care services. The interpretation that people derive from the symbols and maternal health care utilization enabled the researcher to come up with strategies to improve maternal health care utilization and thus reduce maternal and child mortality. In looking at the factors that influence maternal health care utilization, the
researcher adopted the Health Belief Model (HBM) embedded within the larger purview of Symbolic Interactionism perspective.

2.7.1 Symbolic Interactionism and Illness Behaviour

Illness is social and exploring the meanings that patients give to symptoms and illness becomes important. Patients are the first to recognise their illness and to decide to visit a medical practitioner, who then takes a medical history. Patients describe illness on what society teaches them and this affects the diagnosis (Laurence & Barbara G, 2007).

For this study, it was assumed that women of reproductive ages (18-49 years) must be able to draw meanings from the symptoms and attach meanings to those symptoms in order for them to be able to utilize the available maternal health care services. Borrowing from the symbolic interactionist perspective and because illness is social, the study tried to explain maternal health care utilization using the HBM.

2.7.2 The Health Belief Model

The model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions; these include susceptibility, seriousness, benefits and barriers to behaviour and cues to action (Glanz et al., 2008). The HBM suggests that preventive action taken by an individual to avoid a disease is due to the perception that they are susceptible and the occurrence of the disease would have some severe personal implications (Cockerham, 2012). Thus, women may only seek maternal health care services if they deem that the pregnancy they are carrying may have a likelihood of affecting them.
HBM makes an assumption that by taking a particular action, susceptibility (likelihood) would be reduced. However, the perception of the threat posed by disease is affected by modifying factors which are demographic, socio-psychological and structural variables that can influence both perception and the corresponding cues necessary to instigate action (Cockerham, 2012).

Action cues are required because while an individual may perceive that a given action will be effective in reducing the threat of disease, the action may not be taken if it is further defined as too expensive, too unpleasant or painful, too inconvenient, or perhaps too traumatic (Cockerham, 2012). The women may seek for health care because by so doing they feel that they have reduced the likelihood of them experiencing difficulties during the entire period of pregnancy.

The likelihood of action involves a weighing of the perceived benefits to action contrasted to the perceived barriers. Therefore it is believed that a stimulus in the form of an action cue is required to “trigger” the appropriate behaviour. Such a stimulus could either be internal (perception of bodily states) or external (interpersonal interaction, mass media communication, or personal knowledge of someone affected by the health problem) (Cockerham, 2012). Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.

The model assumes that if a person regards himself/herself susceptible to a condition, believes that the condition would have potentially serious consequences, believes that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believes the anticipated benefits of taking action
outweigh the barriers to (or costs of) action, one is likely to take action he or she believes will reduce their risks (Glanz et al., 2008).

Additionally, it is important to note that health seeking behaviour has been observed to be based upon the value of the perceived outcome (avoidance of personal vulnerability) and the expectation that preventive action would result in that outcome (Cockerham, 2012).

Finally, the theoretical framework informs this particular study on the basis of the five constructs that make up the HBM. Thus, women may only utilize maternal health care services if they feel that the pregnancy they are carrying may have a likelihood of affecting their wellbeing and that by so doing they feel that they will reduce the likelihood of them experiencing difficulties during the entire period of pregnancy. Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.
2.8 Conceptual Framework

A conceptual framework is a concise description of the phenomena under study accompanied by a graphic or visual depiction of the major variables of the study (Mugenda, 2008).

![Conceptual Framework of the correlates of maternal Health Care utilization](image)

**Figure 2.1: Conceptual Framework of the correlates of maternal Health Care utilization**
2.8.1 Behavioural Model of Health Services Utilization

The study utilized the behavioural model of health services utilization developed by Andersen and Newman (1973) to explain maternal health care utilization. It asserts that the utilization of health service is dependent on three sets of individual factors; predisposing factors, enabling resources and the illness levels of an individual (need for health service) (Andersen & Newman, 1973; Aday & Andersen, 1977; Andersen, 1995)

2.8.1.1 Predisposing factors

Predisposing factors reflect the fact that different people have a different likelihood/propensity to use health care services. They include demographic characteristics e.g. age and gender, the social structure which determines the social status of a person and his/her ability to cope with presenting problems in society. Social structure can be measured using indicators such as education, occupation, household size, number of previous pregnancies and health-related attitude. Health beliefs include attitudes, values and knowledge about the health and health services that might have an effect on the subsequent need and use of health services available (Andersen, 1995).

Looking at the study variables, the model helps in the analysis of the effects of the demographic variables which include; age, sex, marital status and parity on maternal health care utilization in the study area. This helps to understand why there are disparities in the utilization of maternal health care services. Socio-economic factors such as education level, income, occupation and family size help in knowing the social status of an individual and help in understanding how better the individual is equipped to deal with the health problem at hand. The cultural beliefs enable us to have a better understanding of the outlook towards
health and health services which might have an effect on the need and use for health care and health services among the study subjects.

2.8.1.2 Enabling Resources

Enabling resources deal with the means that make it necessary for individuals to utilize health care services even if they are predisposed to them e.g. income, access, and availability of health services. They may either be personal or community based and make health service resources available to individuals. Enabling conditions can be measured by indicators such as a person’s income, level of family insurance coverage or other source of third party payment for health care, whether or not the person has a regular source of health care, the nature of the regular source of care and the accessibility of the source of health care.

Community enabling characteristics include the amount of health facilities and personnel in a community. Thus, if resources are reasonably plentiful and can be used without queuing up they might be used more frequently. Analysing it from the economic viewpoint, one might expect people experiencing low prices for medical care to use more services. Other measures of community resources include region of the country and the rural urban nature of the community in which the family lives. These variables might be linked to utilization because of local norms concerning how medicine should be practiced or overriding community values which influence the behaviour of the individual living in the community (Andersen & Newman, 1973).
Focusing on service provider factors such as the availability of drugs, attitude of service providers, waiting time, availability of equipments and bed space all have an effect on how health care facilities will be used. All these service provider factors enable people utilize available health care facilities because if the services provided measure up to what the clients expect then they will utilize them. People’s occupation and income are also enabling factors for utilization of health care services because with a good income one is able to pay for the expenses incurred while seeking for care and one can also be able to buy health insurance policies which cover them whenever they fall ill and thus they can be able to seek for health care services. The quality of service offered and the effectiveness of the service provider also determine whether a patient will or will not utilize health care services. Where the services are effective patients will tend to utilize such services more.

2.8.1.3 Need

According to Andersen and Newman, the need factor is the most immediate cause of health service use (Andersen & Newman, 1973). An individual must perceive illness or the probability of it occurring for him/her to seek for health care. The levels of illness represent the most immediate cause for health service utilization. Perceived severity or number of episodes of diseases have a positive association with health care utilization. The model also makes the assumption of a clinical evaluation system because individuals seek care from formal medical systems.

Indicators of perceived illness includes the days that the individual is unable to function normally because the disease interferes with how he/she conducts his daily activities like going to work, going to school, playing with their peers or even taking the children to
school. Other measures of perceived illness include symptoms the individual experiences in a given time period and a self report of the general state of health, e.g. excellent, good, fair or poor. Evaluated illness measures are attempts to get at the actual illness problem that the individual is experiencing and the clinically judged severity of that illness. Under ideal circumstances included here would be a physical examination of the individual by a medical practitioner (R Andersen & Newman, 1973).

The need for utilization of health care services will be examined on the basis of how the disease interferes with the patients daily activities.
CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter provides details of the research methodology used during the study. It offers information on the study site, research design, sampling procedures, the target population, the data collection methods and tools, and finally analysis of data. Consideration is also given to logistical as well as ethical issues.

3.2 Site of the Study

This study was conducted in Ganze district which is one of the six districts in the larger Kilifi County. Ganze district lies on Latitude 3°32'0" North and Longitude 39°41'0" East. It borders Kaloleni district to the South and Bahari district to the East. Ganze district has three divisions namely Ganze, Bamba and Vitengeni; it has a total of 16 locations and 48 sub-locations.

According to the 2009 census report, Ganze district had an estimated total population of 117,074 people with the males accounting for 53,403 (45.6%) and females accounting for 63,671 (54.4%) of the total population. The district covers a total area of 2,779 Km². Ganze district is a semi arid area where horticultural crops are produced using drip irrigation system while food crops and livestock feeds are produced using water conservation structures (Ketiem et al., 2007).

3.3 Research Design

This is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The
researcher employed a cross-sectional survey research design in the collection of data for the proposed study because it can be used to collect data from many people at relatively low cost and relatively quickly. Survey research design is always used to collect information from the field at one point in time. A survey design entails data collection on more than one case and at a single point in time in order to collect both quantitative and qualitative information in connection with two or more variables which are often examined to detect patterns of association (Alan Bryman, 2012).

3.4 Target Population
The study focused on women of reproductive ages (18-49 years) in Ganze district which is made up of three divisions namely Ganze, Bamba and Vitengeni.

3.5 Study Population
The study population consisted of women (18-49 years) who had come for antenatal care and those bringing their babies born at last delivery to the primary health care centres for immunization and other maternal and child health related services.

3.6 Sample Size Determination and Sampling of Study Subjects

3.6.1 Sample Size Determination
According to Bailey (1982), 30 elements are considered by many as the minimum size of a sample. Other researchers opt for a minimum sample of 100 units while others opt for 200 (Chadwick et al., 1984). Thirty (30) respondents were picked from each of the six health care facilities providing maternal health care services in the study area.
3.6.2 Sampling Procedure

This study used triangulation of various sampling techniques with a view of ensuring a representative sample of study subjects was selected and studied. To ensure sample representation and to avoid biasness within the framework of triangulation, multi-stage sampling strategy was adopted.

In the first stage, purposive sampling technique was used to select Ganze district among the six districts that constitute Kilifi County. Ganze was selected because it is a rural area and only one sub-district hospital in the whole district, namely Bamba sub-district hospital. The nearest referral hospitals are in Kilifi and Malindi districts and women with complications have to be referred to either of the two facilities.

In stage two, the researcher considered to stratify Ganze district into three divisions namely Ganze, Bamba and Vitengeni. This was to ensure that there is sample representation from the whole district.

In the third stage, a list of all the health facilities that offer maternal health care services in the district was drawn. Two health care facilities that provide maternal health care services were selected using simple random sampling technique from each of the divisions making a total of six health care facilities.

Lastly, study subjects were selected using convenient sampling. The interviewer was at the health care facility and interviewed 30 subjects from each health care facility giving a total sample size of 180. There was oversampling of study respondents by 9 subjects giving a total sample size of 189.
3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion Criteria

- Subjects included in the study only comprised of women of reproductive ages (18-49 years).

- Only those women who: (i) brought their babies born at last delivery and (ii) those coming for delivery to the primary health care centres for ante natal care services and (iii) those coming for immunization services were eligible for the study.

- Only those respondents who gave an informed consent of participating in the study were interviewed after they had signed the consent form.

3.7.2 Exclusion Criteria

- Women seeking other health services other than maternal health care services from the primary health care centre were not interviewed.

- Women under the age of 18 years were not interviewed because of legal and ethical issues.

- Those women who did not consent to voluntarily participate in the study were not interviewed.

3.8 Data Collection Procedures and Tools

The study employed the use of the interview schedule as the primary tool of data collection because literacy levels in Ganze district were relatively low. Interviews were carried out on
a face to face basis with the respondents who did not know how to read and write and the responses generated from the interviewees were accurately recorded.

3.9 Data Analysis

The collected data from the field was edited, coded and classified into response categories; this was done with the help of the Statistical Package for Social Sciences (SPSS, version 20.0). Descriptive statistics were used to display the Socio-Demographic characteristics of study respondents and utilization of maternal health care services in Ganze District. Frequency tables were used to present the Socio-Demographic distribution of study respondents and pie charts and bar graphs were applied to aid in the visual appreciation of the Socio-Demographic characteristics.

The chi-square test was used to examine whether or not there exists a relationship between the categorical variables; and Binomial Logistic Regression was used to carry out inferential analysis on the determinants of maternal health care utilization due to their binary nature. Logistic regression was used to examine the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). In order to identify the factors that predict utilization of maternal health care services, Multivariate Logistic Regression (MLR) was therefore applied. All the independent variables that were identified as having an association at the bivariate level were included in the model and the significance level for all the statistical analysis was set at 95% (P≤.05) confidence level.
3.10 Ethical Considerations

Ethical clearance for the study was applied to and granted by the Ethical Review Committee (ERC), an agency of the National Commission for Science, Technology and Innovation (NACOSTI). Further, research clearance was also obtained from the Deputy County Commissioner Ganze Sub-County and the Kilifi County Research Coordination Committee to visit health care facilities in Ganze and conduct the study.

During the survey, the researcher explained the purpose of the study to the respondents. This was done to ensure that the respondents gave an informed consent for taking part in the study. Furthermore, this ensured cooperation from the respondents and it helped to avoid any suspicion on the part of the study subjects.

The researcher insisted on and adhered to voluntary participation of respondents in giving information relevant for the study to avoid any coercion in the data collection process. The researcher maintained confidentiality by ensuring that respondents’ information was used only for the purpose of the study and no names of respondents were displayed and that interview schedules were to be kept securely under lock and key.
CHAPTER FOUR: STUDY RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides results of data analysis from the 189 interviewed respondents in Ganze District guided by the research objectives as elucidated in Chapter One. The study over sampled by nine (9) respondents. From the study it is evident that more women were sampled from Bamba division (36.0%) than the other divisions in the district.

This analysis and discussion focuses on the following themes: socio-economic and demographic dimensions of the local community, facility specific factors and women’s preferences and perceptions of ANC services offered at the health care facilities in Ganze district with regard to their use of maternal health care services. The findings are presented in tabular format and figures that clearly show the variations in responses among study variables.

4.2 Socio-Demographic Dimension of Respondents

This section focuses on the different or diverse characteristics with a bearing on the utilization of maternal health services. For the purpose of this research, our key interest was to conduct an assessment of the following parameters towards utilization of maternal health care services; age of respondents, education levels, education levels of their spouses, marital status, income levels, parity and religion. These parameters were investigated and results are presented next.
4.2.1 Age of Respondents

Age of respondents is critical as a variable in this study as it sheds some light on not only the maturity of the study subjects but also ensuring that the selection of study participants remained ethical. Further, age was included because of the assumption that the older the respondents the more mature and experienced on maternal issues and decision making. Indeed, differential age among expectant mothers cannot be gainsaid when it comes to making important maternal decisions that may have value in enhancing maternal and child health. The distribution of respondents by age is aptly presented in Table 4.1.

Table 4.1: Distribution of Respondents by Age

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>70</td>
<td>37.0</td>
</tr>
<tr>
<td>23-27</td>
<td>55</td>
<td>29.1</td>
</tr>
<tr>
<td>28-32</td>
<td>42</td>
<td>22.2</td>
</tr>
<tr>
<td>33-37</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>38-42</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>48-52</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Findings in Table 4.1 indicate that out of the sampled (189), respondents over one third (37%) were between ages 18-22 years old. This clearly indicates that most women start giving birth at an early age. Of the sample, over one quarter (29%) were between the ages of 23-27 years and only 5% of the respondents were aged 38 years and above.

Early marriages and giving birth at early age exposes the women to high chances of not gaining higher education thus leading to over reliance on their spouses for all their needs consequently leading to financial dependence. Dependancy has implications for maternal
health care utilization probably because women will always have to ask for money whenever they want to visit the health facility during their clinic appointments. Subsequently, it may also lead to women not attending maternal health care clinic as expected especially if the clinics are in far off places because of lack of finances to pay for their bus fare. Consequently, this may result to low or poor maternal health care service utilization. Additionally, young single women may not attend maternal health care clinic because they may be trying to hide the pregnancy from their parents and relatives.

The low percentage (5%) of women aged 28 years and above attending antenatal clinic might probably be a result of them having gone through subsequent births and thus don’t find it necessary because they feel they have had more successful birth experiences without any complications. This might also be attributed to them having stopped giving birth. This finding corroborates those of Jat et al., (2011) who found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services compared to their older counterparts.

4.2.2 Marital Status

The Marital status of a person in this study was conceived to mean the civil state of an individual in relation to marriage laws of the country. This variable was deemed important in this study because it helps in determining how maternal and child health decisions are made in a largely patriarchal African society where it is assumed that all decisions in the homestead are to be made solely by male members of the family because they are the heads of their families. The distribution of respondents by their marital status is presented in Table 4.2.
Table 4.2: Percentage distribution by respondents marital status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>Married</td>
<td>170</td>
<td>89.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Results in Table 4.2 depict that majority (90%) of the sampled respondents were married, only 7% were single, while 2% and 1% were widowed and separated respectively. Field observations showed that most of the respondents who were single were between ages 18-22 years old and either lived with their parents or relatives. The high (90%) number of respondents in marital union was expected because the study focused on women in their reproductive ages, many of whom were expected to be married due to societal expectations. Indeed, this finding corroborates those of Ebuehi et al (2006) and Mekonnen & Mekonnen (2002, 2003) who stated that marital status is related to utilization of maternal health services because married women were more likely to use antenatal care than their unmarried counterparts.

4.2.3 Religious Affiliation

Religion is herein conceived as a complete and acceptable system of set beliefs and practices that members of society adhere to. It is an institution that exercises social control among its members. Accordingly, affiliation to religious institution is one of the primary activities in society. Of importance in this study, is that religious affiliation may influence decisions on adoption of contraception, marriage, maternal and child health issues among
respondents. The distribution of respondents according to their religious affiliation is presented in Figure 4.1.

![Religious Affiliation Chart](image)

**Figure 4.1: Distribution of respondents by Religious affiliation**

Figure 4.1 reveals that a half (50%) of the respondents were Christians, slightly over one tenth (12%) were Muslims, 1% subscribed to African Traditional Religions and slightly over one thirds (37%) reported that they were Atheists. This indicates that Ganze district is majorly a Christian community. Interestingly, 37% of the respondents don’t belong to any religion. This may be explained by the remote nature of the area which is compounded by lack of infrastructure and high levels of poverty. The poor state of infrastructure and poverty have probably delinked the community from accessing or being accessed by mainstream religious evangelists.

The higher (50%) number of respondents being Christians is a mirror of Kenya, which is predominantly Christian owing to aggressive penetration of Christian evangelists and size of the Christian faith which puts it at an advantage with regard to resources and numbers over other faiths in the country. The strength in resources and numbers might have enabled
Christian denominations to penetrate this remote area more than other faiths which had limited resources and small numbers of adherants. This finding may have an influence on maternal health care utilization in the study area in line with observations by (Mekonnen & Mekonnen, 2002, 2003; Mondal, 2009) have linked religion to the fact that it affects utilization of antenatal care. They demonstrated that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs and that Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious believes.

4.2.4 Education Level of Respondents

Education is one of the powerful drivers of social change in society in that those with higher levels of education seem to adopt new ideas and innovations faster than their counterparts with low levels of education. Thus, the education level of respondents is a critical variable in this study as it is indicative of a person’s level of understanding, access and uptake of information related to maternal and child health issues. Findings of the study on the level of education of respondents are presented in Table 4.3.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non formal education</td>
<td>85</td>
<td>45.0</td>
</tr>
<tr>
<td>Some primary education</td>
<td>57</td>
<td>30.2</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>35</td>
<td>18.5</td>
</tr>
<tr>
<td>Some secondary education</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Secondary school completed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results in Table 4.3 indicate that out of the sampled (189) respondents, over two fifths (45.0%) had never gone to school, over one quarter (30.2%) had some primary education, with slightly less than a fifth (18.5%) reporting to have completed primary level of education. Those who reported to have either some secondary, completed secondary and others were only less than one tenth (6.3%).

From Table 4.3, it is apparent that the majority (93.7%) of the interviewed women of Ganze district were lowly educated. This finding may have an implication on the level of uptake of information on maternal and child health, adoption of maternal health care services and family planning. The levels of low education coupled with the culture and traditions of the community may compound the uptake of maternal health care services in an area. Further, the low levels of education in the area may have serious implications on other socio-economic opportunities such as securing lucrative employment and access to knowledge, especially on maternal health care services.

In fact, it has been shown that women of higher levels of education have a higher likelihood of fulfilling the requirements of the description of use of maternal health services as described by the WHO (1994; 2004). Such women have more capability to uptake new information on maternal health care practices than those with a low education background. Indeed, Elo (1992) reported that there is a strong positive relationship between education and the use of maternal health care services.
4.2.5 Education Level of Respondent’s Spouse

Owing to the aforementioned importance of the level of respondent education on the uptake of maternal health care services, it was prudent to investigate the combined effect of education on maternal health care utilization by including spousal education level in the matrix. More precisely, the education level of the respondent’s spouse was envisioned to be an important variable in this study because it may act as an enabling factor in the utilization of information concerning maternal and child health practices, access and uptake of such services. Findings on the education level of the respondent’s spouse are presented in Figure 4.2.

![Level of education of spouse](image)

**Figure 4.2: Distribution of respondents spouse by level of education**

Figure 4.2 depicts that slightly over one fifth (20.5%) of the sampled respondents’ spouse had never gone to school, over half (56.5%) had either attained some form of or completed primary education, while over one quarter (28.8%) had either some form of or completed secondary school level of education and above. The level of education of the respondent’s
spouses indicates that there are educational differentials between male and female members of society in Ganze district. Level of education among the males is higher than that among the females. This finding is not a surprise to this study as it is a mirror of the situation in the country owing to the patriarchal nature of the society where boys have higher access to schooling opportunities than their female counterparts.

However, significant to mention is that spousal educational level may facilitate the utilization of maternal health care services because it enhances the capacity to access information that can be shared with the marital partner. Such sharing of useful information and knowledge, especially on maternal health may make the spouses see the importance of visiting maternal health care clinics for their ANC. Accordingly, such visits have the potential of bettering their health status and that of their unborn children. This finding is in tandem with those of Woldemicael (2007) and Dairo & Owoyokun (2010) when they reported that high maternal and husband’s education have a positive relationship to antenatal care utilization.

4.2.6 Respondents Source of Income

Respondents source of income in this study was conceived to mean the main livelihood strategy that respondents eke out a living by receiving money on a regular basis for work done at the end of every month. This variable was considered important as it helps to highlight the ability of respondents to pay for the cost of health care services offered. Findings on respondents’ source of income are presented in Table 4.4.
Table 4.4: Distribution of respondents by main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>Casual employee</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>107</td>
<td>59.4</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 9*

Table 4.4 depicts that almost three fifths (59.4%) of the respondents had no source of income clearly alluding to the fact that most of these women were financially dependent on their spouses. The high (59.4%) number of women having no source of income may probably be explained by the fact that women, as shown in Table 4.3, have very low levels of formal education. This means that their access to formal employment is low.

Indeed, the absence of prerequisites (education and skill training) to formal labour pushes women in Ganze out of formal means of livelihood where they can earn a regular income and attain financial independence that may enhance their access to maternal care. The foregoing may be explained by the patriarchal nature of the african society which favors boys over girls in education. In fact, women are seen as homemakers and as such have to stay at home and take care of their husbands and children whereas the husbands are expected to provide for the family.
4.2.7 Source of Income of Spouse

Respondents’ spouse’s source of income was considered as an important variable in this study as it acts as an enabling factor to utilization of maternal health care services. This is because the earned income can be used to cater for the necessary financial obligations that might be accrued in the process of seeking maternal health care services. Results on the respondents’ spouse’s source of income are presented in Table 4.5.

Table 4.5: Distribution of respondents by spousal main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>04</td>
<td>2.4</td>
</tr>
<tr>
<td>Government employee</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>18</td>
<td>11.0</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Casual employee</td>
<td>62</td>
<td>37.8</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>06</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>52</td>
<td>31.7</td>
</tr>
<tr>
<td>Not aware</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 25

Table 4.5 presents findings of respondents’ spouses’ source of income. Of the total respondents sampled (189), over one third (37.8%) of the respondents’ spouses were engaged in casual employment, meaning they do not earn a regular income. More than one quarter (31.7%) observed that their spouses have other sources of income other than the ones elucidated in the interview schedule. Simple observations during field work showed that most men in the area are engaged in charcoal burning. The high (37.8%) number of spouses being in casual employment means that there are times that they are out of a job and thus might not be able to always provide financially in case the wife wants to make an
ANC visit. This situation is compounded by observations made during field work that most women interviewees lived far away from the available maternal health care facilities. Accordingly, most of them reported walking as their main means of reaching the nearest health care facility. This finding confirms that of Simkhada et al., (2008) who posits that women’s employment affects antenatal care uptake.

4.2.8 Parity

Parity in this study was conceptualized to mean the birth order in a nuclear family. Parity was considered an important variable in this study because it aids in explaining the differentials in utilization rates of maternal health care services by the number of children one has. Findings of the study on parity are aptly presented in Figure 4.3.

![Parity Diagram](image)

Figure 4.3: Distribution of respondents by parity

Figure 4.3 indicates that slightly more than two fifths (43%) of the respondents were multiparous, more than one fifth (23%) were grandmultiparous, more than one tenth (15%) were primiparous and slightly less than one fifth (19%) were nulliparous families.
Parity has an important influence on utilization of maternal health services by women of reproductive ages (Mekonnen & Mekonnen, 2002). The relationship between parity and utilization of maternal health care services in Ganze will be tested using Chi-square and regression analysis in the later sections of this thesis.

4.2.9 Decision to Seek Maternal Health Care

The variable on who makes the decision to seek maternal health care was conceived to be important for this study as it sheds some light on the decision making process between male and females in society. The level of autonomy in decision making among the women and its effects on utilization of certain services is also critical in the analysis of maternal health care services utilization. However, Given the patriarchal nature of Kenyan communities where men are considered the heads of the households and thus responsible for decision making and the fact that health care in the household is a role of the female gender, it was critical to include the variable to see the decision maker on matters of uptake of maternal health care services in Ganze.

Further, maternal health care does not only fall within the purview of gender roles where the women are expected to perform but it actually affects women only making its decision to uptake or not very critical for women despite the patriarchal nature of society. Data on who makes decision with regard to uptake of maternal health care services in Ganze will also help in understanding whether the autonomy of women in decision making affects their utilization of such services. Results of who makes decision to seek maternal health care services are presented in Figure 4.4.
Figure 4.4: Distribution of respondents by who makes decision to attend ANC clinic

Figure 4.4 depicts that slightly more than three fifths (61%) of the respondents, were found to make joint decisions on MCH, while only one quarter (25%) of women were observed make the decisions on their own. Less than one tenth (9%) of MCH decisions were observed to be made by the respondents spouse and (5%) of the times decisions are made by other people, either parents or relatives living with the respondent.

On one hand, the higher (61%) percentage citing joint decision making is a clear testimony of the growing gender empowerment and dynamic nature of society where women are gaining, albeit gradual, their social space as key players in decision making with regard to matters touching on their lives. This seems to happen regardless of the strong patriarchal nature of the Kenyan society. On the other hand, the one quarter (25%) who said they make the decision themselves was expected in that health care and indeed, maternal health care decision making and uptake of its services are a preserve of women owing to the genderized roles in society, where health is classified as a domestic role to be undertaken by women. In fact, women’s autonomy in decision making has been reported by
Woldemicael (2007) as an important factor in explaining utilization of maternal and child health care services.

4.2.10 Hospital Deliveries

The number of hospital deliveries was considered to be a critical aspect in this study since it gives further insight into the utilization rates of institutional delivery services among the rural women of Ganze district. Findings with regard to this variable are presented in Figure 4.5.

![Hospital Deliveries](image)

*Figure 4.5: Distribution of respondents by hospital deliveries*

Study findings presented in Figure 4.5 clearly indicate that of all (189) the respondents interviewed, only over two fifths (44%) had ever had hospital deliveries, while over half (56%) had never had any hospital deliveries. This finding corroborates those of the KDHS 2008-2009 which reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). Interestingly, this is happening regardless of the
understanding that increasing the proportions of delivery taking place in health facilities is important in reducing health risks to both the mother and her unborn child and consequently preventing both maternal and child mortality.

However, Ganze district being a rural area, 44% of the interviewed mothers having ever delivered in health facilities is quite high and somehow slightly contradicts the KDHS 2008-09 which indicate that only 35.4% of deliveries take place in health facilities in rural areas (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). The reason for the difference could be attributable to differences in the characteristics of the samples used in the two studies. Further, whereas the KDHS 2008-09 was a country wide study encompassing women from both urban and rural areas, this study focused only on Ganze which is a rural and poor district in Kilifi County.

4.2.11 Place of Delivery of Child at First Birth

The place of delivery of the first born child was considered an important variable in this study as it highlights the differentials in place of delivery due to the fear of child birth associated with prior birth experience of women in their second parity. This variable was included in the study because experiences of first birth may have a bearing on uptake or non-uptake of maternal health care services. Results of the place of delivery of child at first birth are presented in Table 4.6.
Table 4.6: Distribution of respondents by place of delivery of child born at first birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>53</td>
<td>34.9</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>81</td>
<td>53.3</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>02</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 37*

Findings in Table 4.6 show that over half (53.3%) of the respondents had their first births at home (alone or with the help of a relative), while slightly more than one third (34.9%) had their first delivery in a health care facility with the help of a trained health professional. The over half (53.3%) of women of reproductive ages giving birth at home (alone or with the help of a relative) may probably be due to structural factors such as long distance to the hospital, poor road network and lack of transportation. This finding is consistent with that of Ochako et al (2011) and (Owino, n.d.) who reported that delivery with the aid of a TBA or skilled professional is less likely to happen among rural women. Accordingly, rural residence is largely associated with higher likelihood of home deliveries. The remote nature and poor infrastrutural development in Ganze may aptly explain these disparities reported in the study.

### 4.2.12 Place of Delivery of Latest Child

Place of delivery of latest child was envisioned as an important variable in this study as it highlights the differentials in place of delivery between the first born child and subsequent deliveries. The assumption is that if the first child was born in a health care facility and the
experience was satisfactory to the mother, there are high chances that subsequent births would take place in health care facilities and vice versa. Results of the study with regard to this variable are presented in Table 4.7.

Table 4.7: Distribution of respondents by place of delivery of child born at latest birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>65</td>
<td>42.5</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>70</td>
<td>45.8</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>07</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 36*

Findings of the study in Table 4.7 depict that prior to the study, over two fifths (45.8%) of the women had delivered their latest child at home or with the help of a relative, while another over two fifths (42.5%) had been observed to have delivered in a hospital with the help of a trained health professional. In comparison with place of delivery of first birth as captured in Table 4.6, over half (53.3%) had their first births at home alone or with the help of a relative while slightly more than one third (34.9%) had their first delivery in a hospital with the help of a trained health professional.

The two sets of findings, Table 4.6 and Table 4.7, show interesting trends that, on one hand, there is a decline (from 53.3% to 45.8%) of women giving birth at home or with the help of a relative and, on the other hand, there is a subsequent increase (from 34.9% to 42.5%) of women who had their subsequent deliveries in a health care facility compared to their first birth. These findings are not a surprise to this study in that they show the gains
that are being made in enhancing deliveries in health care facilities and in the hands of professionals as envisioned by government policy and the MDGs, especially goal number five (5). In fact, the findings are inconsistent with those of Fotso et al (2009) and Mekonnen & Mekonnen (2002) who reported that health facility delivery decreases as parity increases. More specifically, they reported that those with two or more children have lower utilization of health care delivery care services, a fact refuted by the findings of this study.

### 4.2.13 Trimester Women Visited Health Facility During First Pregnancy

The concept trimester is used in this study to refer to divisions of three months during pregnancy that an expectant mother had started ANC visits. It is expected that women will start vising ANC services immediately they realise that they are expectant. The variable trimester in first pregnancy signify which month the interviewed women started ANC visits during their first pregnancy. This variable was considered important in this study as it sheds some light on how well women of child bearing ages utilize maternal health care services. The assumption being that they will start uptaking ANC services on the first month that they realise they are expectant. Findings of the study on trimester in first pregnancy are presented in Figure 4.6.
Figure 4.6: Distribution of respondents by trimester one started ANC visits during first pregnancy

Figure 4.6 presents findings of the trimester that women started their antenatal visits during their first pregnancy. It is shown in Figure 4.7 that more than three fifths (65%) of the respondents had their first visit during the second trimester, one fifth (20%) had their first visit during the first trimester, less than one tenth (9%) had their first visit during the third trimester and only 6% never went for ANC visits during their first pregnancy. Findings are consistent with those of a study carried out in Ethiopia (Afework et al., 2014) which found out that majority (68.3%) of the women were observed to have started attending ANC during the second trimester.

This finding can further be explained by field observations where most women attributed having not had their first ANC visit due to the fact that they did not and still do not know when exactly they are supposed to make their first visit once they discover that they are expectant. The lack of knowledge on when to begin their ANC visits can probably be as a result of low levels of education among the women as captured in earlier findings of the study where only less than one fifth (6.3%) reported to have secondary education and
above. Lack of education denies these women opportunities to access information, including on health care and hence this impacts on uptake of health care services including maternal health care services.

4.2.14 Trimester Women Visited Health Facility During Latest Pregnancy

Trimester in this study was conceived, inter alia, to mean divisions of three months during pregnancy in which the respondents started using ANC services in their current pregnancy. This variable was considered important in this study first, because it sheds some light on how well women of child bearing ages utilize maternal health care services by focusing on the first month that they seek ANC services for their children at last birth. Second, it could provide comparative data with regard to which trimester, first or second, birth parity is associated with and third, whether there are dynamics in the process. Findings of the study on the trends for this variable are captured in Figure 4.7.

![Trimester latest pregnancy](image)

*Figure 4. 7: Distribution of respondents by trimester when one started ANC visits during latest pregnancy*
Figure 4.7 depicts that slightly less than one quarter (24%) had their first ANC visit for current pregnancy during the first trimester, more than three fifths (67%) had their first visit during the second trimester and less than one tenth (9%) had their first visit during the third trimester. The low (24%) percentage of women having their first visit during the first trimester might probably be attributed to lack of maternal health care education or structural factors such as long distances to the health facility and maternal health care services being offered at the health facility on certain days of the week only hence inconveniencing users.

Comparatively, women seeking ANC services during their first pregnancy, Figure 4.7 and women seeking ANC services during their latest pregnancy, Figure 4.8 show over three fifths 65% and 67% respectively appearing in the second trimester. Only a slight increase of 2% of women seeking ANC services in the second trimester of their current pregnancy can be observed. This can probably be attributed to the low levels of education and high poverty rates in the study area as adduced and implied in earlier findings of the study respectively. Low levels of education and high poverty rates makes it difficult for women to either realise they are pregnant in the first trimester because they are ignorant on ANC matters and may not be in a position to access or afford pregnancy testing kits respectively.

4.2.15 Distance to Health Care Facility

Distance to the health facility was considered as an important variable in this study as it provided an insight into the structural barriers that may exist in society in relation to utilization of maternal health care services. Considering the remote location and poverty rate (over 68%) in the county, especially in the study area, the inclusion of the variable was
both timely and significant for the study. Results of the study on this variable are presented in Figure 4.8.

![Distance to health facility a concern](image)

**Figure 4. 8: Distribution of respondents on their views whether distance to health facility is a concern**

Findings in Figure 4.8 indicate that more than half (56.4%) of the studied women said that the distance to the health facility was a concern. Field observations show that they had to spend a lot of time on the way to and from hospital and this affected how they utilized maternal health care services. Thus, many stated that they only went to the hospital when they deemed it necessary. This study finding supports that of Cham et al (2005) who posits that delays in decision making process of visiting a health facility can be caused by structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport and inadequate means of transportation.

Figure 4.8 also shows that more than two fifths (43.6%) of the respondents observed that the distance to and from the health facility was not a hindrance to their utilization of maternal health care services. Findings from informal interviews with these women, health
professionals and community members reveal that most of these women were used to walking long distances. Indeed, they were so used to the long distances that whenever we asked some community members on our way to the health care facilities they would retort, “nihaha kare” (literary translated to mean it is just here). The “nihaha kare” could turn out to be kilometre(s) of walking as observed during field work. This can be interpreted to mean that they are used to the long distances such that their sense of distance or how far a place is may be blurred by their experiences and cultural perceptions of distance.

4.2.16 Means of Transport to Nearest Facility

Means of transport to the nearest health facility was considered an important variable of this study as it presented to us one of the challenges that the pregnant mothers may encounter as they seek maternal health care services in their respective health care facilities. The respondents were asked to report which was the most frequently used means of transport that they used to the nearest health facility during clinic visits for maternal health care services? Findings of the various means of transport utilized by the interviewed women are presented in Table 4.8.

Table 4.8: Distribution of respondents by means of transport to health facility

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>141</td>
<td>76.2</td>
</tr>
<tr>
<td>Motorcycle boda boda</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td>Bicycle boda boda</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Own/family motorcycle</td>
<td>02</td>
<td>1.1</td>
</tr>
<tr>
<td>Own/family bicycle</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Public service vehicle</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 4*
Table 4.8 indicates that slightly more than three quarters (76.2%) of study respondents reported walking to the nearest health care facility while both motorcycle (*boda boda*) and public service vehicles accounted for (10.8%) respectively. The larger (76.2%) percentage of the respondents who were observed to be walking to the health care facility for ANC services despite the fact that they were expectant and whether or not they had complications was amazing in that the mean distance to the nearest health facility was observed to be 7.2 Kilometers, while the mean time taken walking to the health care facility was observed to be one hundred and eleven (111 minutes) minutes or approximately one hour and fifty one minutes (1H:51 M).

Notably, despite these long distances, women had probably no other option. The lack of alternative options was probably due to poverty and limited employment opportunities constraining their financial capabilities and thus a lack of means to pay for even public transportation or seek alternative health care facilities in the locality or in the neighbourhood. However, these findings are not a surprise to this study as they are consistent with those of Cham et al (2005) who reported that structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport, inadequate means of transportation can lead to delays in the decision making process of visiting a health care facility by patients.

**4.2.17 Gender of Provider**

The gender of the service provider was considered an important variable in this study because some cultures and religions only accept other women to be midwives and not men. This is regardless of the fact that it is until recently that the girl child has been given an
opportunity to go to school leading to differential education qualifications. Results on the gender of provider are presented in Figure 4.9.

![Gender of provider](image)

*Figure 4. 9: Distribution of respondents by their preferred gender of provider*

Results in Figure 4.9 clearly indicate that over half (53%) of the respondents had no particular preference for the gender of provider whilst over two fifths (42%) and less than one tenth (5%) said that they would want to be attended to by a female or male provider respectively.

The more than half (53%) of the respondents who said they had no particular preference for the gender of the provider may be explained first, by the recognition among respondents that providers are bound by a code of ethics and the fact that all staff undergo similar professional training and thus gender consideration does not compromise quality of care and competence among providers. Second, owing to the remote location of the district and the fact that there are limited choices of health care facilities, expectant women may not have opportunity to make choices of health care providers based on among other things gender and that they have to do with what is available.
As expected, Figure 4.9 shows that over two fifths (42%) of the respondents wanted to be attended to by female providers. Several factors can explain this. One respondent who preferred to be attended to by a female health care practitioner said that:

“kuna mambo mengine huwezi mueleza mwanamume.....mwanamke ni bora haswa amabaye amezaa yuajua kila kitu hata si lazima umwe lezee”. (Translated this means that there are some issues that you cannot open up to a man....women are better especially those who have given birth because they have experienced child birth and so know everything so you don’t need to tell them everything).

Another respondent who would like to be attended to by a female practitioner retorted that:

“Muche dza mino” (Translated into english means that the female practitioner is a woman just like herself).

Further, it is noted in Figure 4.9 that only 5% of the women would like to be attended to by a male health care provider. This is interesting and unexpected given the private and confidential nature of ANC procedures. This probably is because of the ethical confidence patients have of health care providers to handle private and confidential details regardless of gender differentials of their patients. More interestingly, two respondents among the 5% who said they would like to be attended to by a male health care provider retorted that:

“mimi napenda sana huyo daktari awe mwanamume, hawa wa kike wana madharau sana.” (Translated into english means that she would like the midwife to be a male because the female ones are usually not so friendly). To the contrary, another respondents observed
that “daktari wa kiume wanantia aibu” (Translated into english means that male practitioners make her shy).

4.2.18 Type of Provider

The type of provider was considered as a vital variable in this study as this may affect utilization of maternal health care services if the preferred type of provider by the mothers cannot be easily found in the facility. Results of the study on the type of preferred provider are presented in Figure 4.10.

Figure 4.10: Distribution of respondents by their preferred type of provider

Findings in Figure 4.10 indicate that slightly more than four fifths (80.9%) of the interviewed respondents prefer to be attended to by trained medical professionals such as Medical Doctors (53.4%), Midwives (14.8%) or Nurses (12.7%). Others preferred T.B.A’s (3.2%) or a combination of all the practitioners (3.7%) whilsts more than one tenth (12.2%) had no preference. Despite more than half (53.4%) of women preferring to be attended to
by a doctor, not even a single doctor has been posted to serve in the sub-district hospital, health center and dispensaries that serve the expansive district.

However, the high number of respondents (80.9%) who preferred to be attended to by a trained medical professional might be a result of the awareness that health professionals are better trained in handling the birth process and emergency cases should any arise in the process of child birth which is always a risky affair. The finding supports MDG’s objectives especially goal five (5) that strives to make sure that women of reproductive age bracket are attended to in health care facilities and by professionals. The fact that over four fifths (80.9%) of interviewed women cited the need to be attended to by professional doctors shows goodwill in what the world is striving to achieve on the part of women.

4.3 Bivariate Analysis

Various statistical tools have been used in this work to provide an in-depth insight on the relationships that exist between the studies’ dependent and independent variables. Bivariate analysis using Chi-square ($\chi^2$) statistic for the test of significance (i.e. goodness of fit) and Cross-tabulation was used to examine the relationship between Socio-Demographic characteristics of the study respondents and utilization of Maternal Health care services.

Further, this thesis uses the Contingency Coefficient ($C$) to provide a measure of association between the study variables. The rationale behind this is that Contingency Coefficient is appropriate for tables of any size (Mangal, 1987). The value of ($C$) is given by the formula:

$$C = \sqrt{\frac{\chi^2}{n + \chi^2}}$$  
(Equation 4.1)
Where “n” is the sample size and “$\chi^2$” is the Chi-square value. Like $\gamma$ or phi and other coefficients of correlation, C has no limit (i.e. ±1). Its upper limit is dependent upon the number of categories (i.e. the size of the table). Like Chi-square ($\chi^2$), it does not have negative values (Mangal, 1987). For a table made up of an equal number of columns and rows (K×K), the upper limit of the Contingency Coefficient is given by the formula:

$$C(\text{upper limit}) = \sqrt{\frac{k-1}{k}}$$  \hspace{1cm} (Equation 4.2)

Thus, for a 2×2 table, it is 0.7, for a 3×3 table $\sqrt{2/3}$ = 0.82 and for a 4×4 table $\sqrt{3/4}$ = 0.87, e.t.c. However, when the number of columns and rows differ in a table, to calculate the upper limit, the smaller number is taken as K.

Important to note in this thesis is that all the analysis in this work have been conducted using version 20.0 of the Statistical Package for Social Sciences (SPSS), with all the associations/relationships being tested at 95.0% confidence interval.

4.3.1 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Place of Delivery

In this series of bivariate analyses, using Chi-square and Contingency Coefficient, a number of socio-economic characteristics were tested for their influence on the utilization of MHCS. Results of analysis based on Chi-square statistics and Contingency Coefficient for each independent variable and dependent variable have been presented, interpreted and discussed.
Discussion of findings of analysis was done with a view to integrate the results within the existing framework of knowledge in research literature reviewed in Chapter Two of this thesis. In this regard, the discussion of results in this section will draw from the Chi-square and Contingency Coefficient analyses of various Socio-Demographic characteristics (independent variable(s) and place of delivery (dependent variable) in the order in which they are reflected in Table 4.9.

Findings in Table 4.9 shed some light, inter alia, on the relationship between Socio-Demographic Characteristics (SDC) of the respondents and Place of Delivery (PoD). The presentation of the results of analysis follows next.

From Table 4.9, an attempt is made to show whether there exists a relationship between age and use of health facilities for delivery. It is observed that women aged 28 years and above had the highest (54.5%) percentage of users who delivered in health care facilities. Further, women aged below 28 years accounted for over half (54.2%) of all home deliveries with women aged 28 years and above accounting for (4.5%) of all deliveries that took place either at the T.B.A’s clinic or on the way to hospital. Contrary to our expectations, women aged 28 years and above had more (54.5%) health facility deliveries than young women who accounted for only (40%) of health facility deliveries.
Table 4. 9: Relationship between Socio-Demographic Characteristics of respondents and Place of Delivery

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Health Facility</th>
<th>Home</th>
<th>T.B.A’s clinic &amp; on the way to hospital</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>54.2</td>
<td>5.3</td>
<td>1.539</td>
<td>2</td>
<td>.463</td>
<td>.100</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>40.9</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td>5.043</td>
<td>2</td>
<td>.056</td>
<td>.191</td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>54.6</td>
<td>5.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td></td>
<td>21.384</td>
<td>4</td>
<td>.001**</td>
<td>.350</td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>36.2</td>
<td>5.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>45.0</td>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>57.5</td>
<td>12.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
<td>18.216</td>
<td>4</td>
<td>.001**</td>
<td>.326</td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>20.7</td>
<td>3.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>60.5</td>
<td>7.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>58.1</td>
<td>2.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td>13.612</td>
<td>4</td>
<td>.009**</td>
<td>.286</td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>64.2</td>
<td>4.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>41.2</td>
<td>5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td>1.860</td>
<td>4</td>
<td>.762</td>
<td>.114</td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>59.4</td>
<td>6.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Primary</td>
<td>40.5</td>
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<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>43.3</td>
<td>6.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents’ income (%)</td>
<td></td>
<td></td>
<td></td>
<td>4.129</td>
<td>2</td>
<td>.127</td>
<td>.267</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>55.9</td>
<td>8.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td>0.0</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
<td>.539</td>
<td>2</td>
<td>.764</td>
<td>.097</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>52.6</td>
<td>10.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>55.3</td>
<td>5.3</td>
<td></td>
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</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$
Overall, age was not significantly associated with place of delivery ($\chi^2=1.539; \text{df}=2; \ p=.463; \ C=0.10$). Moreover, the relationship was found to be weak as indicated by the value of C (0.10). A review of literature shows that the findings of the study do not concur with the findings of studies carried out in Nigeria, Uganda and Ethiopia by (Adamu, 2011; Anyait et al., 2012; Teferra et al., 2012; Daniels et al., 2013; Wolelie et al., 2014; Abeje et al., 2014) who contended that age of women of reproductive age was significantly associated with institutional delivery service utilization.

Results in Table 4.9, also show that more than half (54.6%) of married women gave birth at home with three quarters (75.0%) of mothers who are either single, separated, divorced or widowed delivering in a health facility. Interestingly, women who are either single, divorced separated or widowed have a high likelihood (75.0%) of having a health facility delivery than married women. Nonetheless, the relationship between marital status and the place of delivery was not significant ($\chi^2=5.043 \text{ df}=2 \ P=.056 \ C=0.191$). This finding is in agreement with other studies from Ethiopia and Uganda (Assfaw & Sebastian, 2010; Anyait et al., 2012) who affirmed that marital union does not influence place of delivery.

Findings in Table 4.9 reveal further that more than half (58.0%) of Christians delivered in a health facility whereas more respondents with no religion and from non-Christian religions delivered at home and in a T.B.A’s clinic or on the way to a health facility. Indeed, religion was significantly associated with place of delivery ($\chi^2=21.384; \text{df}=4; \ p=0.001; \ C=0.350$). Hence we conclude that religion has a significant influence on utilization of maternal health care services. The findings concur with that of Adamu (2011) in Nigeria who contended that religion had a significant association with institutional delivery with Christian women
more likely to deliver in health facilities. Hence we conclude that religion has a significant influence on utilization of maternal health care services.

Data in Table 4.9 reveals that slightly more than three quarters (75.9%) of the Primiparae women had health facility deliveries with less than a tenth (2.3%) of Grandmultiparae women delivering either at the T.B.A’s clinic or on the way to hospital. This suggests that lower parity women have a high (75.9%) likelihood of taking hospital deliveries. This finding confirms that parity has an influence on women’s place of delivery. These may be probably women in their first pregnancy and that they are being cautious of perceived risks that are associated with child birth. Indeed, parity was significantly associated with place of delivery ($\chi^2=18.216; \text{df}=4; p=0.001; \text{C}=0.326$). The study’s findings are consistent with those of (Assfaw & Sebastian, 2010). The findings also confirms those of (Tsegay et al., 2013) who contended that parity is an important determinant of place of delivery.

Table 4.9 also depicts that all (100%) women who had secondary and above level of education delivered in a health care facility. Further, more than three fifths (64.2%) of women with no level of education were observed to have had home deliveries. This finding could be explained by the fact that women with a high education level have the capability to uptake information about maternal health care services subsequently leading to utilization of such services. As reported by (Elo, 1992; Tura & G/Mariam, 2008; Gupta et al., 2010; Adamu, 2011; Anyait et al., 2012; Daniels et al., 2013; Abeje et al., 2014; Ayele et al., 2014; Odo & Shifti, 2014; Wolelie et al., 2015) maternal education level is a critical aspect in the utilization of maternal institutionalized delivery services.
Indeed, maternal education was significantly related to the place of delivery ($\chi^2=13.612; \text{df}=4; p=0.009; C=0.286$). These findings are in tandem with that of (Woldemicael, 2007) and also confirms those of (Teferra et al., 2012) who posited that there is a positive relationship between maternal education and place of delivery.

Findings in Table 4.9 depict that half (50.0%) of women whose husbands had secondary and above level of education had hospital deliveries with slightly less than three fifths (59.4%) of women who were married to men with no formal education having their deliveries at home alone or assisted by a relative. This finding may be explained by the fact that husbands education may act as an enabling factor in ensuring the mother receives quality care during child birth as the husband has knowledge on maternal health issues. This finding suggests that women married to men with a high educational level are more likely to deliver in a health facility than those women married to men with no formal education.

However, spousal education level was not significantly associated with place of delivery ($\chi^2=1.860; \text{df}=4; P_p=0.762; C=0.114$). Apparently, this finding is contrary to those of (Woldemicael, 2007); Gupta et al., 2010; Anyait et al., 2012; Teferra et al., 2012; Ayele et al., 2014; Wolelie et al., 2014; Prasad, 2014; Odo & Shifti, 2014; Abeje et al., 2014) who contended that spousal education level is significantly associated with maternal health care utilization in institutional setups.

Results in Table 4.9 depict that three fifths (60%) of women who earned 4,000 shillings and above had hospital deliveries with more than half (55.9%) of women earning less than 4,000 shillings having home deliveries. The high number of women earning 4,000 shillings
and above having health facility deliveries with only (35.3%) of women earning less than 4,000 shillings having health facility deliveries could be as a result of the costs involved. As reported by Tura & Mariam, (2008) and maternal income has an influence on utilization of institutional delivery services. However, maternal income was not significantly associated with place of delivery ($\chi^2=4.129$, df=2, p=0.127; C=0.267).

From Table 4.9, it is evident that less than one tenth (5.3%) and more than half (55.3%) of women whose spouses earned 4,000 shillings and above delivered either at the T.B.A’s clinic or on their way to hospital or at home respectively. Further, slightly more than one third (36.8%) of women whose spouses earned less than 4,000 shillings had health facility deliveries. As expected, women whose husbands earned 4,000 shillings and above were bound to have more health facility deliveries because this acts as an enabling factor than their counterparts married to husbands who earn less than 4,000 shillings. This could be explained by the fact that they have resources that they could use in the course of seeking institutional delivery services as opposed to their counterparts who may not be able to access institutional delivery services due to shortage or lack of needed resources. However, spousal income level was not significantly associated with place of delivery ($\chi^2=0.539$; df=2; p=0.764; C=0.097). Hence we conclude that spousal income level has no relationship with place of delivery.

4.3.2 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Antenatal Care

Table 4.10 shows the relationship between Socio-Demographic Characteristics and Antenatal care. In this set of tests, the researcher first makes an attempt to determine
whether a relationship exists between age and number of ANC visits made to the clinic before delivery.

Findings in Table 4.10 show that women aged 28 years and above were found to be more likely (90.9%) to make 4 visits and above to the ANC clinic. More than one third (37.7%) of young women below 28 years were observed to make less than the required four visits to the ANC clinic prior to delivery of child born at last birth. A possible explanation for why less than two fifths (37.7%) of women below age 28 years made less than the required four visits could be as a result of lack of information on the required number and timing of visits to the ANC clinic. As reported by Anchang-Kimbi et al., (2014), young age (less than 20 years) is a significant risk factor associated with fewer clinic visits (less than 4).

Indeed, maternal age was significantly associated with the number of ANC visits ($\chi^2=7.063; \ df=1; \ p=0.008; \ C=0.190$). These findings are consistent with those of Banda, (2013), Tsegay et al., (2013) and Anchang-Kimbi et al., (2014), that maternal age has an influence on number of ANC visits hence we conclude that maternal age significantly influences number of ANC visits women make before delivery.
Table 4.10: Relationship between Socio-Demographic characteristics of respondents and number of ANC visits

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>&lt;4 visits</th>
<th>4 Visits and above</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>37.7</td>
<td>62.3</td>
<td>7.063</td>
<td>1</td>
<td>.008**</td>
<td>.190</td>
</tr>
<tr>
<td>28 years and above</td>
<td>9.1</td>
<td>90.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>31.2</td>
<td>68.8</td>
<td>7.747</td>
<td>1</td>
<td>.005**</td>
<td>.198</td>
</tr>
<tr>
<td>Other statuses</td>
<td>63.2</td>
<td>36.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>38.3</td>
<td>61.7</td>
<td>7.674</td>
<td>2</td>
<td>.022*</td>
<td>.198</td>
</tr>
<tr>
<td>Other religions</td>
<td>8.7</td>
<td>91.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>37.5</td>
<td>62.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
<td>69.4</td>
<td>30.6</td>
<td>24.609</td>
<td>3</td>
<td>.001**</td>
<td>.339</td>
</tr>
<tr>
<td>Primiparae</td>
<td>24.1</td>
<td>75.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>28.4</td>
<td>71.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>23.3</td>
<td>76.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>27.1</td>
<td>72.9</td>
<td>4.237</td>
<td>2</td>
<td>.120</td>
<td>.148</td>
</tr>
<tr>
<td>Primary</td>
<td>39.1</td>
<td>60.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>20.0</td>
<td>80.0</td>
<td>6.133</td>
<td>2</td>
<td>.047*</td>
<td>.186</td>
</tr>
<tr>
<td>Primary</td>
<td>29.9</td>
<td>70.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>46.2</td>
<td>53.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>26.8</td>
<td>73.2</td>
<td>1.242</td>
<td>1</td>
<td>.265</td>
<td>.136</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>19.0</td>
<td>81.0</td>
<td>.255</td>
<td>1</td>
<td>.613</td>
<td>.059</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>24.5</td>
<td>75.5</td>
<td></td>
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</tr>
</tbody>
</table>

Note: p values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)

Findings in Table 4.10 show that more than three fifths (68.8%) of married women made four visits and above, while slightly more than three fifths (63.2%) of women who were single, separated, widowed or divorced made less than four visits before delivery of their
latest child. The above findings suggest that married women have a higher likelihood of having four visits and above than unmarried women. This could be attributed to the fact that they get maternal services support from their spouses either in form of maternal care information, social or financial support. The finding of this study that male spouses had higher level of education than their wives further strengthen the support that women receive for ANC services during pregnancy.

Indeed, marital status was significantly associated with ANC visits ($\chi^2=7.747; \text{df}=1; p=0.005; C=0.198$). This finding is consistent with that of a study carried out in India by Gupta et al., (2010) and also confirms that of Anchang-Kimbi et al., (2014) who stated that being single is a significant risk factor associated with fewer clinic visits (less than 4).

Table 4.10 further depicts that majority (91.3%) of women who profess Islam and African Traditional Religion (ATR) made four visits and above, while more than one third (38.3%) of Christian women had less than four visits to the clinic before birth of their latest child. These findings show that women who profess Islam and African Traditional Religion have a high likelihood (91.3%) of having made four visits and above. Indeed, religion was significantly associated with ANC visits ($\chi^2=7.674; \text{df}=2; P=0.022; C=0.198$). The study finding corroborates that of Adamu, (2011) who contends that religion has an influence on number of ANC visits.

Findings in Table 4.10 reveal that more than three fifths (69.4%) of Nulliparae women made less than four visits, while slightly more than three quarters (76.7%) of grand Multiparae women made four and above ANC visits. This finding can be possibly explained by the fact that women of a higher parity have had previous birth experiences
which might have been occasioned by a complication warranting them to make all the required visits to avert any complication that may arise. Indeed, parity was significantly associated with ANC visits ($\chi^2=24.609; \text{df}=3; \text{P}=0.001; \text{C}=0.339$). This finding is in agreement with that of Banda, (2013) who reported that parity is significantly associated with number of visits to the ANC clinic.

Table 4.10 further depicts that slightly less than three quarters (72.9%) of women with no formal education made four visits and above with one half (50.0%) of women with secondary education and above making 4 visits and above. The high (72.9%) number of women with no formal education having had more than four ANC visits and half (50%) of women with secondary education or more having less than four visits could be explained by the fact that most respondents knew about maternal health care services irrespective of their educational status. This suggests that existence of informal means such as radio and television among others could be significant sources of information in educating women of reproductive ages as opposed to formal education only. As argued by Banda, (2013), education level does not seem to influence number of ANC visits to the clinic but those with secondary education were more likely to make more visit to the ANC clinic. In essence, this finding contradicts that of Banda (2013) where more (72.9%) women with no formal education were observed to have had four visits and above.

Further, maternal education is associated with improved health, women empowerment and reduction of gender disparities. However, the relationship between maternal education level and ANC visits was not significant ($\chi^2=4.237; \text{df}=2; \text{P}=0.120; \text{C}=0.148$). This study finding contradict those of (Elo, 1992; Chakraborty et al., 2003; Woldemicael, 2007; Gupta et al.,
2010) who reported that maternal education has a significant bearing on the number of ANC visits.

Results in Table 4.10 also show that four fifths (80%) of women married to men with no formal education made four visits and above, while more than two fifths (46.2%) of women whose spouses had secondary and above level of education made less than four visits. Interestingly, respondents who utilized the services more had spouses with lower levels of education as compared to those who did not utilize them. This could be attributed to the fact that use of antenatal care is not limited to formal education only. Further, Maternity services are now free and there is massive awareness creation by the Ministry of Health (MoH) on utilization of MHCS in the rural areas, in addition to other initiatives such as the Beyond Zero Campaign by the First Lady Margaret Kenyatta.

Indeed, spousal education level was significantly associated with number of ANC visits ($\chi^2=6.133; \text{df}=2; p=0.047; C=0.186$). This study finding corroborate those of Woldemicael, (2007; and Daniels et al., (2013) when they contended that spousal educational level was associated with 4 and above antenatal visits.

Findings of the study in Table 4.10 also show that slightly less than three quarters (73.2%) of women who earned 4,000 shillings and above four visits and above with two fifths (40.0%) of women earning below 4,000 shillings making less than four visits. This finding could be explained on the basis of the Output Based Approach (OBA) program which aims to improve access, equity and uptake of quality reproductive health services to economically disadvantaged women. The women purchase the vouchers at a subsidized price of 100 shillings which entitles them to access reproductive health services such as
Safe Motherhood (SMH), Family Planning (FP) and Gender Based Violence (GBV) recovery services free of charge.

Maternal income was not significantly associated with number of ANC visits ($\chi^2=1.242; df=1; p=0.265; C=0.136$). Notably, this finding is not in tandem with that of Gupta et al., (2010) when they contended that maternal income had a significant influence on the number of ANC visits.

Finally, results in Table 4.10 depict that slightly more than four fifths (81.0%) of women whose spouses earned less than 4,000 shillings made four ANC visits or more compared with (75.5%) of women whose spouses earned 4,000 shillings and above. This finding could be explained by the fact that the Government of Kenya (GoK) abolished maternity fees in all public health facilities through a presidential decree on 1st June 2013 (“MaternalNewbornHealthCare_Kenya_Oct2013.pdf,” n.d.). However, spousal income level was not significantly associated with the number of ANC visits ($\chi^2=0.255; df=1; p=0.613; C=0.059$). Hence we conclude that spousal income level does not influence the number of ANC visits the woman makes during pregnancy.

4.3.3 Relationship between Socio-Demographic Characteristics and Utilization of Skilled Birth Attendance (SBA)

Table 4.11 shows the relationship between Socio-Demographic Characteristics and use of Skilled Birth Attendants services. In this study, an attempt was made to understand the relationship between age and Utilization of Skilled Birth Attendance.
Results of analysis in Table 4.11 indicate that slightly less than three fifths (59.5%) of women aged below 28 years did not have SBA service at birth of their latest child while more than half (54.5%) of the women aged 28 years and above had SBA service during their latest birth. This could be explained by the fact that marriage is seen as a sacred institution in the African setup and thus getting children before marriage was a sign of lack of morals. Accordingly, many young women who were not married ran away from their parent’s home and went to give birth elsewhere.

The relationship between age and SBA service was not significant ($\chi^2 = 1.530; \text{df}=1; p = 0.216; C = 0.099$). This finding contradicts those of Daniels et al., (2013) when they contended that use of SBA was more associated with the youth.

Table 4.11 shows that slightly more than three fifths (60.3%) of married women did not have SBA of child born at last birth, while three quarters (75.0%) of women who were unmarried had SBA services. Being married means one has a partner who could take care of them and that is why most respondents had no skilled attendance at birth, while being unmarried makes one to seek SBA services in case labour pains commence when they are all alone at home. Indeed, marital status was significantly associated with SBA services ($\chi^2 = 5.634; \text{df}=1; p=0.018; C=0.188$). This study’s finding is consistent with that of Daniels et al., (2013) that marital status has a significant association with SBA with single mothers more likely to seek SBA.
Table 4. 11: Relationship between Socio-Demographic characteristics of respondents and use of a Skilled Birth Attendant (SBA)

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Skilled Attendance</th>
<th>Unskilled Attendance</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>59.5</td>
<td>1.530</td>
<td>1</td>
<td>.216</td>
<td>.099</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>45.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td>5.634</td>
<td>1</td>
<td>.018*</td>
<td>.188</td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>60.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td>13.463</td>
<td>2</td>
<td>.001**</td>
<td>.284</td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>42.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>73.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td>16.951</td>
<td>2</td>
<td>.001**</td>
<td>.316</td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>24.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>67.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>12.934</td>
<td>2</td>
<td>.002**</td>
<td>.279</td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>69.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>47.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>1.590</td>
<td>1</td>
<td>.451</td>
<td>.106</td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>65.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>59.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td>3.113</td>
<td>1</td>
<td>.078</td>
<td>.233</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td>.037</td>
<td>1</td>
<td>.847</td>
<td>.025</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>63.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Results in Table 4.11 show that less than three fifths (58.0%) of Christians had skilled attendance at birth, while three fifths (60.0%) of women who belong to Islam and African Traditional Religion had no skilled attendance at birth of child born at last birth. Christian women tend to use SBA more (58.0%) than women who profess Islam and ATR who report (60.0%) utilization of unskilled attendance at birth. According to Stenlund, (2012) women belonging to religions other than Islam have higher odds of delivering with assistance of SBA’s. Indeed, religion was significantly associated with use of SBA services ($\chi^2=13.463; df=2; p=0.001; C=0.284$). This finding corroborates that of Stenlund, (2012) who contended that women belonging to other religions had higher odds of delivering with assistance of SBA’s than those of Islamic faith.

Further, findings in Table 4.11 indicate that slightly more than three quarters (75.9%) of Primiparae women had skilled attendance services at birth during latest birth, while more than three fifths (67.9%) of Multiparae women had no skilled attendance during latest birth. Lower parity women are more likely to use SBA than higher parity women because higher parity women have experience due to previous births. As reported by Worku et al., (2013), women who had births for the first time were more likely to use Skilled Birth Attendance services. Indeed, parity was significantly associated with Skilled Birth Attendance ($\chi^2=16.951; df=2; p=0.001; C=0.316$). The study’s finding is consistent with those of (Ochako et al., 2011; Kabakyenga et al., 2012; Worku et al., 2013) who contended that parity has a strong bearing on utilization of SBA.

Table 4.11 also depicts that slightly less than one third (30.9%) of women with no formal education had skilled attendance at birth with all women with secondary and higher
education level background having skilled attendance at birth. Education exposes women to information and knowledge on the importance of utilization of SBA and thus skilled birth attendance increases with secondary education and above. According to (Kabakyenga et al., 2012), women with secondary education and above are more likely to use SBA’s than those with lower levels of education. Indeed, maternal education was significantly associated with Skilled Birth Attendance ($\chi^2=12.934$; df=2; $p=0.002$; C=0.279). This finding is in tandem with those of (Ochako et al., 2011; Worku et al., 2013) who reported that maternal education has a significant bearing on use of SBA.

Table 4.11 further indicates that half (50.0%) of women whose spouses had secondary and higher level of education had skilled attendance services at birth, while more women (65.6%) whose spouses had no formal education had no access to skilled services at delivery. Spousal education level acts as an enabling factor for utilization of SBA. However, spousal education level was not significantly associated with Skilled Birth Attendance ($\chi^2=1.590$; df=1; $p=0.451$; C=0.106). The finding contradicts those of Daniels et al., (2013) when they reported that spousal educational level was significantly associated with assistance at delivery by a trained medical personnel.

Results in Table 4.11 also indicated that three fifths (60.0%) of women who earned more than 4,000 shillings had skilled attendance at birth, while more than three fifths (64.7%) of the women who earned less than 4,000 shillings did not have skilled attendance during the birth of their current child. Maternal income was not significantly associated with Skilled Birth Attendance ($\chi^2=3.113$; df=1; $p=0.078$; C=0.233). The study finding is inconsistent with that of Stenlund (2012) who contended that women belonging to the poor and poorest
wealth groups are more likely to receive unskilled assistance than their counterparts in the richest and richer wealth groups.

Results in Table 4.11 show that more than three fifths (63.2%) of women whose spouses earned less than 4,000 shillings did not receive skilled attendance at birth while (60.5%) of those whose spouses earned more than 4,000 shillings received skilled attendance at birth. These proportions are about the same. Hence, spousal income level is not significantly associated with Skilled Birth Attendance ($\chi^2=0.037; df=1; p=0.847; C=0.025$). Hence we conclude that spousal income level does not have a significant association with use of SBA.

### 4.3.4 Relationship between Socio-Demographic Characteristics and utilization of maternal health care services as measured by Trimester women sought ANC care

Table 4.12 shows that none of the Socio-Demographic characteristics had a significant association with trimester in which women sought ANC care.

Age ($\chi^2=.001; df=1; p=.982; C=.002$) and marital status ($\chi^2=.224; df=1; p=.636; C=.042$) were not significantly associated with trimester the woman started ANC visits. These findings are inconsistent with those of (Daniels et al., 2013) who stated that age and marital status plays a significant role in use of ANC services within the first trimester. Religion was not significantly associated with trimester ($\chi^2=.941; df=2; p=.625; C=.086$). These findings are inconsistent with those of (Olayinka, Joel, & Bukola, 2012) who contended that there was a relationship between religion and trimester women started their ANC visits.
Table 4.12: Relationship between Socio-Demographic Characteristics and Trimester women sought ANC care

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Trimester</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; &amp; 3&lt;sup&gt;rd&lt;/sup&gt; Trimesters</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td>.001</td>
<td>1</td>
<td>.982</td>
<td>.002</td>
</tr>
<tr>
<td>Below 28 years</td>
<td>24.0</td>
<td>76.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>23.8</td>
<td>76.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td>.224</td>
<td>1</td>
<td>.636</td>
<td>.042</td>
</tr>
<tr>
<td>Married</td>
<td>24.6</td>
<td>75.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>18.2</td>
<td>81.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td>.941</td>
<td>2</td>
<td>.625</td>
<td>.086</td>
</tr>
<tr>
<td>Christianity</td>
<td>21.1</td>
<td>78.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>28.3</td>
<td>71.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td>.302</td>
<td>2</td>
<td>.860</td>
<td>.049</td>
</tr>
<tr>
<td>Nullipara</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>28.6</td>
<td>71.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multipara</td>
<td>22.4</td>
<td>77.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultipara</td>
<td>26.2</td>
<td>73.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education Level (%)</td>
<td></td>
<td></td>
<td>.803</td>
<td>2</td>
<td>.669</td>
<td>.080</td>
</tr>
<tr>
<td>No formal education</td>
<td>26.3</td>
<td>73.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>20.8</td>
<td>79.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>0.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td>.842</td>
<td>2</td>
<td>.656</td>
<td>.085</td>
</tr>
<tr>
<td>No formal education</td>
<td>31.0</td>
<td>69.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>24.2</td>
<td>75.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td>.899</td>
<td>1</td>
<td>.343</td>
<td>.136</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>22.6</td>
<td>77.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td>.089</td>
<td>1</td>
<td>.765</td>
<td>.042</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>17.7</td>
<td>82.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>21.2</td>
<td>78.8</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01

Additionally, Parity was not significantly associated with trimester women started their ANC visits (\( \chi^2 = .302; \) df=2; p=.860; C=.049). These findings are inconsistent with those of
(Daniels et al., 2013) who contended that parity has a bearing on trimester that women start receiving antenatal care.

Maternal education was not significantly associated with trimester ($\chi^2=0.803; df=2; p=0.669; C=0.080$). The study findings are consistent with those of (Daniels et al., 2013) who stated that education level did not have a significant relationship with use of ANC during the first trimester. In addition, spousal education was not significantly associated with trimester ($\chi^2=0.842; df=2; p=0.656; C=0.085$). The study findings are contrary to those of (Daniels et al., 2013) who contended that spousal education level was associated with trimester women start receiving antenatal care.

Maternal income ($\chi^2=0.899; df=1; p=0.343; C=0.136$) and spousal income ($\chi^2=0.089; df=1; p=0.765; C=0.042$) were not significantly associated with the trimester they started ANC visits.

### 4.3.5 Women’s Preference and Perception of ANC Services Offered at the Healthcare Facilities

Results from Table 4.13 indicate that, more than four fifths (80%) of women visiting a dispensary, a health centre or a sub-district hospital reported being happy with the facility space, neatness and adequacy of privacy that was provided. Of women visiting both categories of facilities, less than a tenth (6.4%) of them preferred being attended to by a male provider with more than two fifths (45.6%) of those visiting the dispensary preferring a female health care provider and those attending health centres and sub-district hospital accounting for less than two fifths (35.9%) preference of female health care provider. This
could possibly be explained by either cultural issues surrounding child birth in the community.

Table 4.13: Women’s preference and perception of ANC services offered in the health facilities

<table>
<thead>
<tr>
<th></th>
<th>Dispensary (n= 125)</th>
<th>Health Centre + Sub district hospital (n= 64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waiting time (minutes) Mean</strong></td>
<td>39.08</td>
<td>54.61</td>
<td>.010**</td>
</tr>
<tr>
<td><strong>Happy with waiting time (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Yes</td>
<td>99.2</td>
<td>85.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with facility space (%)</strong></td>
<td></td>
<td></td>
<td>.301</td>
</tr>
<tr>
<td>Yes</td>
<td>83.2</td>
<td>88.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.8</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with neatness (%)</strong></td>
<td></td>
<td></td>
<td>.327</td>
</tr>
<tr>
<td>Yes</td>
<td>93.6</td>
<td>89.1</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6.4</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td><strong>Adequate privacy (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Yes</td>
<td>92.0</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred gender of provider (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Male</td>
<td>6.4</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45.6</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>48.0</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred type of provider (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Doctor</td>
<td>53.6</td>
<td>53.1</td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>12.0</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td>20.8</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Traditional Birth Attendant</td>
<td>4.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>A combination</td>
<td>4.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>5.6</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td><strong>Would you come back to this facility (%)</strong></td>
<td></td>
<td></td>
<td>.129</td>
</tr>
<tr>
<td>Yes</td>
<td>91.2</td>
<td>93.8</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.6</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>7.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td><strong>Will you recommend this facility to others (%)</strong></td>
<td></td>
<td></td>
<td>.413</td>
</tr>
<tr>
<td>Yes</td>
<td>96.8</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.4</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Table 4.13 further presents women’s preferences and perceptions of ANC services that are offered at the dispensaries, health centres and sub-district hospital in Ganze District. More than 90% of women attending dispensaries or either health centre or sub-district hospital reported that they would return to the same health facility or would recommend it to others. The mean waiting time in the health centre and sub-district hospital per visit was significantly higher (54.61 minutes) than that in the dispensaries (39.08 minutes). Contrary to expectations, more (99.2%) women were happy with the waiting time at the dispensaries compared to health centres and sub-district hospitals (85.9%), with the latter being higher in the health care delivery system hierarchy in the country.

Results in Table 4.13 show that more than two fifths (48.0%) of women at the dispensaries had no preference on the preferred gender of provider with slightly more than three fifths (60.9%) at the health centres and sub-district hospitals having no preference for gender of health provider. This could be attributed to the fact that both are trained professionals as supported by field interviews and observations. Findings show that half (50%) of women visiting both set of facilities preferred being attended to by a doctor with only 1.6% of those visiting health centres and sub-district hospitals preferring TBA’s as opposed to 4% of those visiting the dispensary. There is a significant relationship between category of facility and waiting time (p=0.010) and the preferred type of provider (p=0.001).

4.3.6 Proportion of women who felt reassured about common pregnancy related concerns by health care providers

Study findings on reassurance patterns that women received from their providers about common pregnancy related issues are avidly presented in Table 4.14. Overall, among the
women who attended either a health facility or sub-district hospital, slightly more than four fifths (83%) felt reassured about the position of the baby and that of their own health. However, 87.8% of women who visited dispensaries did not receive information about the size of their unborn baby with more than three fifths (62.7%) receiving information about foetal abnormality. More than three fifths (68.3%) of our total sample who visited the dispensary had received information about the position of the baby, over three fifths (62.6%) on foetal abnormality and over four fifths (82.9%) on mothers own health and those who visited either a health centre or a sub-district hospital had received information about the position of the baby (83.9%), size of the baby (58.1%), foetal abnormality (67.7%) and mothers own health (87.1%) and felt reassured except that only (12.2%) of those who visited dispensaries received information on the size of their babies.

Significantly, those women visiting either a health centre or a sub-district hospital feel much more reassured about the four highlighted pregnancy related complications than those visiting the dispensaries. Women visiting a health centre or a sub-district hospital were significantly associated with receiving information about the position of the baby (p=0.23) and the size of the baby (p=0.001). These findings corroborate those of a study carried out in Gambia by Jallow et al., (2012) which observed that category or type of health facility had a bearing on receiving information about position and size of the unborn baby with women attending private health facilities likely to receive such information than those attending public health facilities.
Table 4.14: Proportion of women who were reassured about common pregnancy related concerns by their service providers

<table>
<thead>
<tr>
<th></th>
<th>Women who felt reassured</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dispensary (n=125)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position of the baby (%)</td>
<td></td>
<td>5.138</td>
<td>1</td>
<td>.023*</td>
<td>.164</td>
</tr>
<tr>
<td>Yes</td>
<td>68.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>31.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the baby (%)</td>
<td></td>
<td>43.435</td>
<td>1</td>
<td>.001**</td>
<td>.436</td>
</tr>
<tr>
<td>Yes</td>
<td>12.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>87.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foetal abnormality (%)</td>
<td></td>
<td>.475</td>
<td>1</td>
<td>.491</td>
<td>.051</td>
</tr>
<tr>
<td>Yes</td>
<td>62.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>37.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s own health (%)</td>
<td></td>
<td>.542</td>
<td>1</td>
<td>.461</td>
<td>.054</td>
</tr>
<tr>
<td>Yes</td>
<td>82.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>17.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values*: \( p \leq 0.05 \) **: \( p \leq 0.01 \)

However, no significant relationship exists between receiving information on foetal abnormality (p=0.491) and mothers own health (p=0.461) and the category of health facility one visits. This finding is inconsistent with that of Jallow et al., (2012) who contended that category of facility had a significant association with receiving information about foetal abnormality and the heath of the mother during the pregnancy term. Thus, findings in Table 4.14 clearly show that women of reproductive age (18-49) in Ganze District would prefer to visit either a health centre or a sub-district hospital owing to reassurance they get concerning complications to their unborn children and that of their own health.
4.4: Logistic Regression Analyses

Binomial logistic regression was undertaken because it examines the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). Binomial logistic regression was undertaken for the three dependent variables: Place of Delivery, Number of ANC visits to the clinic before birth of current child and Skilled Birth Attendance which is without doubt the single most critical intervention in reducing maternal mortalities and morbidities (Mpembeni et al., 2007).

In this part of the analysis, only five socio-demographic variables were included in the model: age, marital status, religion, education and parity. The rationale behind this is that preliminary analysis showed that only these five socio-demographic variables were significant either at the bivariate and multivariate level of analysis.

4.4.1 Binary Logistic Regression on Socio-Demographic Characteristics and Institutional Delivery Service Utilization

In Table 4.15 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization of Institutional Delivery services. Results from Table 4.15 indicate that except for mother’s age and level of education, all the selected socio-demographic characteristics are significant predictors of utilization of institutional delivery services in Ganze district.
Table 4.15: Binary Logistic Regression results with odds ratios and 95% confidence interval for Institutional Delivery service utilization

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B) (95%)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>153</td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religious Affiliation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>153</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Respondents Education status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>153</td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td>0.330</td>
</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae®</td>
<td>29</td>
<td>12.301</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td></td>
<td></td>
<td>(2.315-19.897)</td>
<td>0.001**</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td></td>
<td></td>
<td>(1.618-21.668)</td>
<td>0.007**</td>
</tr>
</tbody>
</table>

Missing Cases =36 ® - Reference category; Note: p values *:p ≤ 0.05 **: p ≤ 0.01

From Table 4.15, it is evident that Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) likely to have institutional delivery service utilization than Primiparae women. Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) likely to have institutional delivery service utilization than Primiparae women. Institutional delivery service utilization was also more common among women belonging either to Islam, ATR and those women who professed no religion (AOR 3.091,
95% CI, 1.447-6.602, p=0.004). The probability was much less for women who were unmarried (AOR 0.170, 95% CI 0.039-0.749, p= 0.019).

4.4.2 Regression on Socio-Demographic Characteristics and Number of ANC Visits

In Table 4.16 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the number of ANC visits made to the clinic.

Table 4.16: Binary Logistic Regression results with odds ratios and 95% confidence interval for Number of ANC visits

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>189</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>1.766</td>
<td>0.844</td>
<td>4.384</td>
<td>1</td>
<td>5.849</td>
<td>(1.120-30.553)</td>
<td>0.036*</td>
</tr>
<tr>
<td>Marital status</td>
<td>189</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>-1.320</td>
<td>0.573</td>
<td>5.297</td>
<td>1</td>
<td>0.267</td>
<td>(0.087-0.822)</td>
<td>0.021*</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>189</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td>0.080</td>
<td>0.362</td>
<td>0.048</td>
<td>1</td>
<td>1.083</td>
<td>(0.533-2.199)</td>
<td>0.826</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>189</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some formal education</td>
<td>-0.153</td>
<td>0.407</td>
<td>0.141</td>
<td>1</td>
<td>0.859</td>
<td>(0.387-1.906)</td>
<td>0.708</td>
</tr>
<tr>
<td>Parity</td>
<td>189</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae®</td>
<td>36</td>
<td>1.872</td>
<td>0.577</td>
<td>10.515</td>
<td>1</td>
<td>6.499</td>
<td>(2.097-20.145)</td>
</tr>
<tr>
<td>Primiparae</td>
<td>29</td>
<td>1.508</td>
<td>0.481</td>
<td>9.841</td>
<td>1</td>
<td>4.516</td>
<td>(1.761-11.585)</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
</tr>
</tbody>
</table>

® - Reference category; Note: p values *:p≤ 0.05 **: p≤ 0.01
Results from Table 4.16 indicate that mother’s age, marital status and parity are significant predictors of the number of ANC visits women will make before delivery in Ganze district.

From Table 4.16, it is evident that women aged above 28 years (AOR 5.849, 95% CI 1.120-30.553, p=0.036) and those who were single, separated, divorced and widowed (AOR 0.267, 95% CI 0.087-0.822, p=0.021) were more likely to make four or more antenatal visits to the clinic before delivery of their latest child. Further, parity was found to have a significant impact on the number of ANC visits with Primiparae women being six times (AOR 6.499, 95% CI 2.097-20.145, p=0.001) more likely to make four or more ANC visits than Nulliparae women; Multiparae women being five times (AOR 4.516, 95% CI 1.761-11.585, p=0.002) likely to make four or more visits than Nulliparae women and lastly Grandmultiparae women being four times (AOR 3.722, 95% CI 1.129-12.273, p=0.031) likely to make four or more visits to the ANC clinic than Nulliparae women.

4.4.3 Binary Logistic Regression on Socio-Demographic Characteristics and Skilled Assistance during Delivery

In Table 4.17 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization skilled attendance during delivery. Results from Table 4.17 indicate that apart from mother’s age educational status, all other selected socio-demographic characteristics are significant predictors of utilization of skilled assistance during delivery in Ganze district.
Table 4.17: Binary Logistic Regression results with odds ratios and 95% confidence interval for Skilled Assistance during Delivery

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
</tr>
<tr>
<td>Marital status</td>
<td>153</td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td></td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td>0.330</td>
</tr>
<tr>
<td>Parity</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae®</td>
<td>29</td>
<td>1.915</td>
<td>0.549</td>
<td>12.301</td>
<td>2</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td>(1.618-21.668)</td>
<td>0.007**</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Missing cases= 36 ® - Reference category; Note:p values *: p ≤ 0.05 **: p ≤ 0.01

Table 4.17 depicts that Muslim women, those who believed in ATR and who professed no religion were three times (AOR 3.091, 95% CI 1.447-6.602, p=0.004) more likely to use the assistance of a Skilled Birth Attendant than Christian women. Further, women who were unmarried were (AOR 0.170, 95% CI 0.039-0.749, p=0.019) less likely to use the assistance of a Skilled Birth Attendant. Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) more likely to use a Skilled Birth Attendant than...
Primiparae women and Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) more likely to use a Skilled Birth Attendant during birth than Primiparae women.

4.4.4 Binary Logistic Regression on Socio-Demographic Characteristics and Trimester women started attending ANC clinic

In Table 4.18 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the trimester that women started making ANC visits to the clinic. Results from Table 4.18 indicate that all selected socio-demographic characteristics are not significant predictors of the timing that women start making ANC visits to the clinic in Ganze district.

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at most recent birth</td>
<td>125</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038</td>
<td>(0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Below28 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>125</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474</td>
<td>(0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>125</td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789</td>
<td>(0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>125</td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1</td>
<td>1.326</td>
<td>(0.516-2.450)</td>
<td>0.558</td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some formal</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results in Table 4.18 show that there exists no significant relationship between the socio-demographic characteristics of the respondents and the trimester that they first started attending ANC clinic. However, women aged above 28 years (AOR 1.038, 95% CI 0.306-3.515, p=0.952) and those who were unmarried (AOR 1.474, 95% CI 0.296-7.344, p=0.636) were one time more likely to make their first visit to the ANC clinic during the first trimester of their pregnancy. Multiparae women (AOR 1.708, 95% CI 0.284-10.295, p=0.559) were two times more likely to make their first ANC visit during the first trimester than Primiparae women with Grandmultiparae women (AOR 1.438, 95% CI 0.207-9.997, p=0.714) being one more time likely to make their first ANC visit during the first trimester than Primiparae women.
CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary
This section presents a summary of the comparison of results of the relationship between the socio-demographic characteristics of the study respondents and variables used to measure the utilization of MHCS at both the Bivariate and Multivariate Logistic Regression Analyses to try and find out what determines utilization of maternal healthcare services in Ganze district. The findings of this study as shown in Table 5.1, Table 5.2, Table 5.3 and Table 5.4 confirm that the four indicators of utilization of maternal health care services are affected differently by the various socio-demographic characteristics in the entire Ganze district at the bivariate and multivariate levels of analyses. Further, the differences in the utilization of the different maternal health care services as espoused by the two levels of analyses will enable us to clearly focus on what should be done in an effort to improve utilization levels.

5.1.1 Comparison of results of relationship between socio-demographic characteristics and institutional service delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses
Table 5.1 shows the relationship of all the socio-demographic characteristics of the respondents with institutional delivery service utilization both at the Bivariate and Multivariate levels of analyses to find out what predicts institutional delivery service utilization.
**Table 5.1: Comparison of results of relationship between Socio-Demographic characteristics and Institutional Service Delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>χ²</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>1.539</td>
<td>0.463</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.043</td>
<td>0.056</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>21.384</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Respondents education</td>
<td>13.612</td>
<td><strong>0.009</strong></td>
</tr>
<tr>
<td>Parity</td>
<td>18.216</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01

Findings in Table 5.1, interestingly show that while at the Bivariate level analysis, maternal education was significantly (p=0.009) related to institutional delivery services utilization, at the Multivariate level analysis it has no significant bearing on the utilization of the institutional delivery services (p=0.330). This is not to imply that education is not an important predictor of institutional delivery service utilization at all since it exposes women to access and knowledge on maternal health issues. This finding could be attributed in the way the variable education was coded and it could also be explained by the fact that there has been massive campaigns by the GoK and MoH in sensitizing the population about the importance of utilization of maternal health care services to avert the dangers that are associated with pregnancy and child birth through other media such as the radio, television and even the chiefs ‘barazas’. Marital status of the mothers is insignificant (p=0.056) at the bivariate level analysis but proves to be significant (p=0.019) at the multivariate level analysis. Religion and Parity of the mothers were found to be both significant at the bivariate and multivariate levels of analyses.
5.1.2 Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.2 shows the relationship of all the socio-demographic characteristics of the respondents and number of ANC visits that women make to the health facilities both at the Bivariate and Multivariate levels of analyses to find out what predicts the number of ANC visits that mothers make to the health facility.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>( p )</td>
</tr>
<tr>
<td>Age</td>
<td>7.063</td>
<td>0.008**</td>
</tr>
<tr>
<td>Marital Status</td>
<td>7.747</td>
<td>0.005**</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>7.674</td>
<td>0.022*</td>
</tr>
<tr>
<td>Respondents’ education</td>
<td>4.237</td>
<td>0.120</td>
</tr>
<tr>
<td>Parity</td>
<td>24.609</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: \( p \) values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)

From Table 5.2, it is interesting to note that despite the fact we expected education to be a significant determinant of the number of ANC visits that mothers make to the clinic due to access and use of knowledge on maternal health issues acquired during formal education, maternal education is insignificant both at the Bivariate and Multivariate level analyses. Further, while religious affiliation is significant at the Bivariate level (\( p=0.022 \)), it is insignificant (\( p=0.826 \)) at the Multivariate level analysis after controlling for the effects of the other variables under study.

Age of the mothers, marital status and parity prove to be significant at the 95.0%
confidence interval both at the Bivariate and Multivariate level analyses as shown in Table 5.2. The study found out that mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the number of visits they make to the health facility at the Multivariate regression analysis level as indicated by these findings.

5.1.3 Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendants at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.3 shows the relationship of all the socio-demographic characteristics of the respondents and the use of Skilled Birth Attendants (SBA) both at the Bivariate and Multivariate levels of analyses to find out what predicts utilization of Skilled Birth Attendants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>( p )</td>
</tr>
<tr>
<td>Age</td>
<td>1.530</td>
<td>0.216</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.634</td>
<td>0.018*</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>13.463</td>
<td>0.001**</td>
</tr>
<tr>
<td>Respondents education</td>
<td>12.934</td>
<td>0.002**</td>
</tr>
<tr>
<td>Parity</td>
<td>16.951</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: \( p \) values : \( *: p \leq 0.05 \) **: \( p \leq 0.01 \)

From Table 5.3, apart from the age of the mothers; marital status, religious affiliation, maternal education, and parity all prove to be significant at the 95.0% confidence interval at the Bivariate level of analysis. However, while marital status, religious affiliation and parity still prove to be significant at the Multivariate level of analysis and thus strongly...
5.1.4 Comparison of results of relationship between Socio-Demographic characteristics and trimester mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.4 shows the relationship of all the socio-demographic characteristics of the respondents and the trimester that mothers started attending ANC clinic both at the Bivariate and Multivariate levels of analysis to find out what predicts utilization of maternal health care services.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>P</td>
</tr>
<tr>
<td>Age</td>
<td>0.001</td>
<td>0.982</td>
</tr>
<tr>
<td>Marital Status</td>
<td>0.224</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>0.941</td>
<td>0.625</td>
</tr>
<tr>
<td>Respondents education</td>
<td>0.803</td>
<td>0.669</td>
</tr>
<tr>
<td>Parity</td>
<td>0.302</td>
<td>0.860</td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

From Table 5.4, it is evident that all the socio-demographic characteristics have no significant bearing on the trimester that women start attending antenatal clinic for their check-ups both at the Bivariate and Multivariate levels of analyses.

5.2 Conclusion
The findings of this study confirm that a woman’s marital status, religious affiliation and parity are strong predictors of institutional delivery service utilization. Further, mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the
number of visits that the mothers make to the health facility and lastly marital status, religious affiliation and parity strongly predict utilization of SBA’s. In addition, Parity proved to be a strong predictor of utilization of almost all the four maternal health care services apart from trimester that women started attending ANC clinic as it predicts their utilization both at the bivariate and multivariate level analysis at 95.5% confidence interval.

More women who are unmarried, those affiliated to non-Christian faiths, low parity women and those aged 28 years and above utilize maternal health care services more.

5.3 Recommendations

Evidence from this study enables making of suggestions and recommendations in three vital areas. First, the findings have some implications on the formulation of public health policies that will lower maternal morbidities and mortalities by improving utilization of MHCS. Second, it has practical implications on public health care practice and lastly it has implications for further research to uncover whatever has not been researched on in this study and others and thus update sociological knowledge on this important topic to help reduce maternal morbidities and mortality.

5.3.1 Recommendations for Policy

1. It is recommended from the findings of this study that stakeholders in maternal health care such as the National and County governments and the Civil Society Organizations make deliberate policies that will involve women aged 28 years and above as role models to sensitize other women on the importance of making the required number of ANC visits.
2. Policy provisions can also be developed by county governments and the civil society organizations to enhance women utilization of maternal health care services through an incentive and reward system to those women who make the required ANC visits and deliver in institutional care or under SBA supervision.

3. It is recommended that the national government come up with a policy that will ensure that maternal health care services are provided in most public health care facilities on a daily basis and not on specific days so that expectant women can access the services whenever they need them.

4. Further, deliberate policy should be formulated to encourage county governments to have ANC facilities at sub county levels. Alternatively, it can be a matter of policy, especially at the county government level that most health facilities should have at least a delivery room and trained personnel to provide an opportunity for expectant women to access professional ANC services and deliver under the care of professional staff. Such a policy will enhance women delivery under professional care reducing maternal morbidity and mortality and that of their new born babies.

5. It is recommended through the Ministry of Education, Science and Technology that the government strengthen affirmative action as a matter of policy to ensure that girl child education is prioritised in order to improve educational standards of women. This is envisioned as a long term policy strategy that will provide them with avenues and opportunities of acquiring information about use and importance of utilizing maternal health care services.
6. It is recommended that public health policy on awareness on the importance of utilization of institutional delivery service be initiated with a clear focus on high parity women, women with low education levels and women who professed Islam and ATR. Such a policy strategy can be a panacea for ensuring enhanced utilization of institutional delivery to this segment of the population especially in the study area.

5.3.2 Recommendations for Practice

1. With regards to the prevailing pattern of late and irregular antenatal clinic attendance, it is recommended that there be awareness creation by maternal health care stakeholders such as governments and NGOs on (ANC timing) when mothers should commence their ANC visits and the number of visits they should make until they give birth.

2. It is recommended that there be awareness creation by the National and County governments, NGOs and FBOs on the importance of using institutional delivery service or skilled midwifery assistance/skilled birth attendance at every child birth as it helps in reducing maternal and child deaths.

3. It is recommended to health and development workers that improving community awareness and perception on skilled providers and their care through community meetings by targeting women who prefer non skilled health care providers and those who lack awareness on the importance of utilization of maternal health care
services to themselves and their unborn children will help in reducing maternal and child deaths.

4. It is recommended that a doctor be posted to serve in the district as most mothers said they would like to be attended to by a trained medical doctor and only Clinical Officers and nurses were found at their work stations during the study period.

5. It is recommended that at least one ambulance should be supplied to the district and it be stationed at a central facility where it can easily coordinate in case maternal emergencies occur.

6. It is recommended that efforts be made by the health providers to ensure patients privacy during ANC and delivery care is kept to improve institutional delivery thus enhancing utilization of a major maternal health care service thus reducing maternal mortality.

5.3.3 Recommendations for Further Research

1. Given the high maternal morbidity and mortality not only in the study area but in Kenya and the region, it is prudent for researchers to understand the why with regard to the persistency of the problem and the how best can governments and the civil society mitigate the problem.

2. It is recommended that further research be carried out to establish why is it that women who profess Islam make the required (four and more) number of ANC visits but rarely have Institutional delivery service utilization.
3. More research is also needed to bring out the rural urban differential in not only maternal health care utilization but the differential factors with significance influence on ANC visits and institutional delivery.

4. Further research is also prudent to focus on other determinants of maternal health care utilization not considered in this study. Understanding the multiplicity of factors with an influence on maternal health care utilization is key in the development of interventions that will work in reducing maternal morbidity and mortality including that of their infants.
REFERENCES


Appendix 1: Consent Form

CONSENT FORM

PART 1: INFORMATION SHEET

I am Stanley Wechuli Wanjala a postgraduate student at Pwani University registration number C50/PUC/2098/11 and E-mail address: (stanleywanjala@gmail.com) supervised by Professor Halimu Suleiman Shauri- E-mail address hshauri@yahoo.com. I am carrying out a research titled “Determinants of Maternal Health care Utilization in Ganze District, Kilifi County of Kenya.” I am going to give you information about all what the research entails and invite you to be part of this research as a respondent. If you have any questions later, you can ask.

Purpose of research

Maternal and child health are key health issues in the world. The reason I am doing this research is to find out the factors that affect utilization of maternal health care services and to establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care utilization in Ganze district. By so doing, I will be able to advice the government and other health stakeholders on best practices in maternal health and help in policy formulation.

The reason why I am inviting you to be a respondent is because I am inviting all women between the ages of 18-49 years to participate in this research. Your participation in this research is entirely voluntary- It is your choice whether to participate or not.

The information that you give during this research will be kept confidential. Information about you that will be collected during the research will be put away and no one but the researcher (I) will be able to see it. Any information on you will have a number on it instead of your name for confidentiality purposes. You can ask any questions regarding the study or your participation in this study.

PART 2: CERTIFICATE OF CONSENT

I have read the foregoing information or it has been read to me. I have had the opportunity to ask questions about it and any questions that have been asked have been answered to my satisfaction.

I consent voluntarily to participate as a respondent in this research.

Name of participant: __________________________________________________________

Signature of participant: ______________________________________________________

Date: ______________________________________________________________________
Appendix 2: Interview Schedule

DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN GANZE DISTRICT, KILIFI COUNTY OF KENYA

INTERVIEW SCHEDULE

Dear respondent,
Please answer the questions to the best of your understanding. Your cooperation in this study is highly appreciated and all the information you provide will be treated with utmost confidentiality. Thank you for your cooperation.

Name of Health Facility: ____________________________________________________________
Category of Facility: [ ] Dispensary [ ] Health Centre [ ] Sub-District Hospital [ ] District Hospital
Ownership: [ ] Government [ ] Private for Profit [ ] Faith Based [ ] NGO/CBO
Division: __________________________________________________________
Location: _________________________________________________________________
Sub-Location: ____________________________________________________________

PART I: SOCIO - DEMOGRAPHIC CHARACTERISTICS
Q1. Could you please tell me your age?
   a) 18-22 years [ ]
   b) 23-27 years [ ]
   c) 28-32 years [ ]
   d) 33-37 years [ ]
   e) 38-42 years [ ]
   f) 43-47 years [ ]
   g) 48-52 years [ ]

Q2. What is your marital status?
   a) Single [ ]
   b) Married [ ]
   c) Divorced [ ]
   d) Widowed [ ]
   e) Separated [ ]
   f) Other (State) __________________________

Q3. What is your religious affiliation?
   a) Christian (Catholic) [ ]
   b) Christian (Protestant) [ ]
   c) Christian (SDA) [ ]
   d) Jewish [ ]
   e) Muslim [ ]
   f) Hindu [ ]
Q4. What is your level of education?
   a) Non Formal Education [ ]
   b) Some primary education [ ]
   c) Primary school Completed [ ]
   d) Some Secondary education [ ]
   e) Secondary school completed [ ]
   f) University (Bachelors) [ ]
   g) Other (State) ____________________________

Q5. If married, or in a stable relationship, could you kindly state your spouse’s level of education?
   a) Non Formal Education [ ]
   b) Some primary education [ ]
   c) Primary school Completed [ ]
   d) Some Secondary education [ ]
   e) Secondary school completed [ ]
   f) University (Bachelors) [ ]
   g) Other (State) ____________________________

Q6. (a) If have some level of education, have you undergone any formal professional training since completion/dropping out of school?
   a) Yes [ ]
   b) No [ ]
   (b) If Yes State which one(s)__________________________

Q7. What is your main source of income?
   a) Farming [ ]
   b) Government employee [ ]
   c) Employment private sector [ ]
   d) Employment NGO/CBO [ ]
   e) Employment FBO [ ]
   f) Small business person [ ]
   g) Casual Employee [ ]
   h) No source of income at the moment [ ]
   i) Other (State) ____________________________

Q8. What would you consider as the main source of income for your spouse/partner?
   a) Farming [ ]
   b) Government employee [ ]

---

1 Traditional Religion include nominal Christian religions such as Akorino, Legio Maria, Roho Msalabwa, Dini ya Msambwa etc
c) Employment private sector [ ]
d) Employment NGO/CBO [ ]
e) Employment FBO [ ]
f) Small business person [ ]
g) Casual Employee [ ]
h) No source of income at the moment [ ]
i) Other (State) ___________________________________________

Q9. What is your average monthly earning from all your sources of income?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8000 to 10,000 [ ]
   f) 10,000 to 12,000 [ ]
   g) 12001 to 14000 [ ]
   h) 14001 to 16000 [ ]
   i) 16000 to 18000 [ ]
   j) 18001 to 20000 [ ]
k) KShs. 20001 or more (State amount) ___________________________________________

Q10. What is the approximate average monthly earnings of your spouse or partner from all the sources?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8000 to 10,000 [ ]
   f) 10,000 to 12,000 [ ]
   g) 12001 to 14000 [ ]
   h) 14001 to 16000 [ ]
   i) 16000 to 18000 [ ]
   j) 18001 to 20000 [ ]
k) KShs. 20001 or more (State amount) ___________________________________________

Q11. (a) How many children do you have in total? (Indicate number by Gender)
     Males: ___________ Females: ___________ Total: ___________

     (b) Could you kindly indicate their age beginning from the eldest to this one?
<table>
<thead>
<tr>
<th>Child number</th>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q 12. Who makes the decision for you to seek maternal health care?

- Self
- Husband
- Husband and me
- If other explain___________________________

SECTION B: KNOWLEDGE OF ANC

Q1. How did you first know about ANC?

- Through friends
- School
- Hospital
- Others

Q2. Are you aware of the services rendered at ANC Clinic?

- Yes
- No

Q3. ANC helps detect complications during pregnancy

- Yes
- No

Q4. ANC helps reduce maternal mortality and morbidity

- Yes
- No

SECTION C: ACCESS TO REPRODUCTIVE HEALTHCARE

Q1. Have you ever delivered any of your children in the hospital?

- Yes
- No
Q2. Kindly indicate the place of birth of your children beginning from the first born to the last born. (1=Hospital with the help of a trained health professional; 2=Home with the help of Traditional Birth Attendant; 3= At home alone or with the help of a relative; 4=At the Traditional Birth Attendants special clinic/home; 5 = On the way to hospital with the help of a stranger/relative; 6=Other (State))

<table>
<thead>
<tr>
<th>Child number</th>
<th>Place of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
</tbody>
</table>

Q3. (a) Reflecting back on your first pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

(c) How many visits did you make to the ante natal clinic before the delivery of your first born child?

(d) How many visits did you make to the post natal clinic after the delivery of your first born child?

Q4. (a) Reflecting back on your last pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)
(c) How many visits did you make to the ante natal clinic before your latest delivery?

___________________________________________________

(c) How many visits did you make to the post natal clinic after your latest delivery?

___________________________________________________

Q5. How far is the nearest clinic offering maternal health services? (How long does it take for an adult to walk to the facility?) NB: one Kilometre may require 15 minutes of walk.

___________________________________________________

Q6. In your view, is the distance to the facility a concern? (Explain your answer)

Yes [ ]
No [ ]
Reason:
___________________________________________________

Q7. In your view, is the attitude of the health care providers a concern? (Explain your answer)

Yes [ ]
No [ ]
Reason:
___________________________________________________

Q8. In your view, does your religion influence how you seek ANC services? (Explain your answer)

Yes [ ]
No [ ]
Reason:
___________________________________________________

Q9. When visiting the nearest health facility during your pregnancy clinic appointments, what was the predominant means of transport used? (Probe for cost and duration in minutes to facility)

<table>
<thead>
<tr>
<th>Means</th>
<th>Tick one used</th>
<th>Cost (KShs.)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Motorcycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bicycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q10. In the facility you visited (for those who did not visit, the nearest healthcare facility), what maternal healthcare services does that facility offer? (Kindly indicate whether those attending received the services)

<table>
<thead>
<tr>
<th>Service</th>
<th>Availability</th>
<th>Received service in last pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasound services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11. During your last visit to the maternal health care facility, did you receive information on the following services?

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foetal abnormality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your health status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q12.(i) are you aware of family planning methods?
  a) Yes [ ]
b) No [ ]

(ii) Have you ever used any family planning method?
   a) Yes [ ]
   b) No [ ]

   (iii) If YES which method have you used? (Probe whether he is currently using the method)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Ever Used</th>
<th>Currently Using</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pills (Postinor 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IUD (intrauterine device)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Norplant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Condoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sexual Abstinence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Tubal ligation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Calendar/safe days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13. (i) Have you ever stopped using any of the family planning methods at any one time?
   Yes [ ]
   No [ ]

   (ii) If you have ever stopped, kindly provide reason for your decision

_________________________________________________________________________________
_________________________________________________________________________________

Q14 Are you aware of any taboos related to child birth in your community?
   Yes [ ]
   No [ ]

If yes, list them

_________________________________________________________________________________
_________________________________________________________________________________

b) Do you believe in these taboos?
   Yes [ ]
   No [ ]

If yes, which taboos do you believe in?

_________________________________________________________________________________
_________________________________________________________________________________
Perceptions: Maternal and Child health practices

Q1. When visiting the nearest health facility during your pregnancy clinic appointments, how many minutes did you wait before the healthcare provider attended to you?

___________________________________________________ ______________________

Q2. Are you happy with the time you spent with the healthcare provider during your appointments?
   Yes [  ]
   No [  ]

a) If yes, why?

___________________________________________________ ______________________

b) If No, would you prefer to have?
   A lot more time [  ]
   A little more time [  ]
   Time is about right [  ]

b) Are you happy with the facility space?
   Yes [  ]
   No [  ]

Explain___________________________________________________________________

___________________________________________________ ______________________

   __________

c) Are you happy with the facility neatness?
   Yes [  ]
   No [  ]

Explain___________________________________________________________________

___________________________________________________ ______________________

   __________

d) Who is your preferred gender of provider?
   Male [  ]
   Female [  ]
   No preference [  ]

Explain___________________________________________________________________

___________________________________________________ ______________________

   __________

e) Who is your preferred type of provider?
   Doctor [  ]
   Nurse [  ]
Midwife [ ]
Traditional Birth Attendant [ ]
A combination [ ]
No preference [ ]

Explain

f) Would you come back to this facility?
   Yes [ ]
   No [ ]
Don’t know [ ]
Give reasons for your answer

__________

g) Will you recommend this facility to others?
   Yes [ ]
   No [ ]
Don’t know [ ]
Give reasons for your answer

__________

Q3. Are you happy with the privacy that you were accorded during the consultation with
the health care provider?
   Yes [ ]
   No [ ]

Q4. How would you rate the following services that you received at the health facility?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of food served</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reception upon arrival at the health facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude of medical personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of equipments/facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q5. In your opinion, how would you rate the following ante-natal care services of the
health care facility you visited during your first visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>Very good</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very poor</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>-----------</td>
</tr>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q6. If you were given another option (healthcare facility) in your first visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain__________________________________________________________

Q7. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your last visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Normal Delivery Services
C-Section Deliveries
Registration of births
Immunization of newborn
Provision of treated bed nets
Counselling on family planning options

Q8. If you were given another option (healthcare facility) in your last visit, would you have still attended this facility?
    Yes [ ]
    No [ ]

Explain________________________________________________________

Q9. Any additional comments
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Thank you for your cooperation.
Appendix 3: Certificate of Ethical Approval

NACOSTI ACCREDITED

ETHICS REVIEW COMMITTEE
ACCREDITED BY THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY
AND INNOVATION (NACOSTI, KENYA)

CERTIFICATE OF
ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:
Mr. Stanley Wechuli Wanjala

REFERENCE NO:
ERC/MA/003/2014

ENTITLED:
Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya

TO BE UNDERTAKEN AT:
Ganze, Kilifi, Kenya

FOR THE PROPOSED PERIOD OF RESEARCH
HAS BEEN APPROVED BY THE ETHICS REVIEW COMMITTEE
AT ITS SITTING HELD AT PWANI UNIVERSITY, KENYA
ON THE 15TH DAY OF JANUARY 2014

CHAIRMAN

SECRETARY

LAY MEMBER

15 JAN 2014
Appendix 4: Graduate School Research Authorization

Pwani UNIVERSITY

SCHOOL OF GRADUATE STUDIES

P.O. Box 193 - 80100
KILIFI KENYA

TEL: 234-41-7523/02/3/4/8
FAX: 234-41-7522/28
email: info@pwaniuniversity.ac.ke
website: www.pwaniuniversity.ac.ke

Ref: PU/SGS/PRAL/83/vol.1

16th January, 2014

Mr. Stanley W. Wanjala
School of Humanities and Social Sciences
PWANI UNIVERSITY

SUBJECT: RESEARCH AUTHORIZATION

Following approval of your Masters research proposal by the Ethics Review Committee on 15th January, 2014, we hereby write to formally grant authorization for you to conduct research for a Master’s thesis entitled "Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya."

You are advised to collect your original Certificate of Ethical Approval from the Ethics Review Committee office.

We wish you all the best as you embark on this critical stage of your Masters programme.

Yours faithfully,

Prof. Mlewa C. Mwateke
DEAN, SCHOOL OF GRADUATE STUDIES,

Cc
✓ Deputy Vice Chancellor (ASA)
✓ Dean, School of Humanities and Social Sciences
✓ Chairman, Social Sciences
Appendix 5: Research Authorization from Department of Health

COUNTY GOVERNMENT OF KILIFI
DEPARTMENT OF HEALTH
KILIFI COUNTY HOSPITAL

Telephone (041) 7522777
Fax:(041) 7522025
Email: kdh@kamri-welcme.org
When Replying/Telephoning quote
Ref No.: ST.1/38/VOL.I/

OFFICE OF THE MEDICAL
SUPERINTENDENT
KILIFI COUNTY HOSPITAL
P. O. Box 9 - 80108
KILIFI
DATE: 31st March, 2014

Stanley Wechuli Wanjala
Pwani University
PO Box 195-80108
Kilifi County,
KENYA

Dear Mr Stanley. W. Wanjala,

RE: AUTHORIZATION TO CARRY OUT STUDY IN GANZE

The research committee of health Kilifi has received your request to carry out a study on “Determinants of Maternal Care Service Utilization in Ganze District, Kilifi County of Kenya”.

After going through the proposal, we grant you approval to proceed with your research. This should not exceed a time period of 90 days. Please note you can always ask for an extension, should you need it.

Upon completion of the study, you will be required to share your results with the County Health Management Team.

Good luck!

Dr Barbara Mambo, Chairperson
Kilifi County Research Coordination Committee
KILIFI

Cc:
The Executive Secretary of Health- KILIFI COUNTY
The Director of Health Services-KILIFI COUNTY
Appendix 6: Map of Ganze District
DECLARATION

Declaration by the Student
This thesis is my original work and has not been presented for a degree in any other University or any other award

Signature.........................................             Date.....................................

Stanley Wechuli Wanjala
C50/PUC/2098/2011

Declaration by the Supervisors
We confirm that that the work reported in this thesis was carried out by the candidate under our supervision. No part of this Thesis may be reproduced without the prior written permission of the author and/or Pwani University

Signature.........................................             Date.....................................

Prof. Halimu Suleiman Shauri; PhD
Sociologist; Department of Social Sciences
(Pwani University)

Signature.........................................             Date.....................................

Dr. Francis Wokabi; PhD
Philosopher; Department of Philosophy and Religious Studies
(Pwani University)
DEDICATION

This thesis is dedicated to the pillars of my life: God, my adoring parents who remain my source of inspiration, my siblings and fiancée.
ACKNOWLEDGEMENT

First, my heartfelt gratitude to my supervisors: Prof. Dr. Halimu Suleiman Shauri and Dr. Francis Gikonyo Wokabi. Thank you for your sage advice, guidance, encouragement and intellectual input from the initial to the final stage of this thesis development that enabled me to have an in-depth understanding of the subject under study. To my parents, thanks for the never ending love and unwavering support. My fiancée Yvonne Kuhnke, thanks for your unconditional love, encouragement and understanding even on days that you could not get my full attention. My colleague Bonventure Obeka, your constructive and insightful criticism, collaboration and willingness to assist when called upon have been tremendous assets. My colleagues and lecturers in the Department of Social Sciences, study respondents and medical staff from health facilities in Ganze District, thank you for making the study possible.
ABSTRACT

Maternal health care service utilization is an important health issue related to both maternal and child survival as it reduces maternal mortality and morbidity as well as improving the well being of mothers and their children before, during and after birth. Considering low utilization of maternal health care service especially in Sub-Saharan Africa, understanding what determines utilization becomes important. This study set out to examine determinants of maternal health care service utilization by women of reproductive ages (18-49 years) with a view to enhancing the achievement of Millennium Development Goal (MDG) number five (5). Four dependent variables: place of delivery, antenatal care, skilled attendance at birth and trimester women attended Antenatal Clinic (ANC) as well as six independent variables representing predisposing characteristics (mothers age at birth, marital status, religion, educational attainment, parity) and enabling factors (husbands educational attainment, income levels) were selected. Survey research design was used in data collection and the main data collection tool was an interview schedule. Multi-stage cluster sampling was used in sampling the health care facilities and convenient sampling was used to sample the respondents. Both descriptive and inferential statistics such as logistic regression analysis were applied to the analysis of the collected data. The key findings of the study show that religion, parity and maternal education were significant predictors of women’s place of delivery. Further, maternal age, marital status, and parity were found to be significantly associated with the number of ANC visits women make to the clinic. Marital status, religion and parity are all related to use of a skilled Birth Attendant at birth. Parity emerged to be the strongest predictor among all the other indicators of maternal health care service utilization considered in the study. In conclusion, the study was able to find out factors that affect utilization of maternal health care services in Ganze district thus achieving the study objective. Strategies to promote the utilization of Maternal Health Care Services should thus focus on the relevant predictors established in the models based on the binomial regression analyses. The findings of the study may help the Ministry of Health, policy makers and health related agencies and stakeholders to design appropriate and cost-effective intervention programmes targeting areas with most needs. This may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality while enhancing reproductive health and resource efficiency. Lastly, this study aims at stimulating further research in this area, thus bridging knowledge gaps and updating scientific knowledge on this important topic.
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List of Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

ATR – African Traditional Religion

ANC – Antenatal Care

CBS – Central Bureau of Statistics

ERC – Ethical Review Committee

FBO – Faith Based Organization

GDP – Gross Domestic Product

GoK- Government of Kenya

HBM - Health Belief Model

HIV – Human Immunodeficiency Virus

KDHS – Kenya Demographic and Health Survey

KHHEUS – Kenya Household Expenditure and Utilization Survey

KNBS – Kenya National Bureau of Statistics

KNHA- Kenya National Health Accounts

MDG’s – Millennium Development Goals

MHCS – Maternal Healthcare Services

MLR – Multivariate Logistic Regression
MoH – Ministry of Health

NACOSTI – National Commission for Science, Technology and Innovation

NCAPD – National Coordinating Agency for Population and Development

NGO – Non-Governmental Organization

OBA – Output Based Approach

PHC – Primary Health Care

PNC – Postnatal Care

POD – Place of Delivery

SBA – Skilled Birth Attendant

SDC – Social Demographic Characteristics

SMI – Safe Motherhood Initiative

SPSS – Statistical Package for Social Sciences

TBA – Traditional Birth Attendant

TI – Transparency International

UN – United Nations

UNFPA – United Nations Fund for Population Activities

UNICEF – United Nations International Children’s Emergency Fund
WB – World Bank

WHO – World Health Organization
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Three out of the eight Millennium Development Goals (MDG’s) relate to health. Goal number four is aimed at reducing child mortality rates, goal number six focuses on combating HIV/AIDS, malaria and other diseases and goal number five, which is the focus of this study, is aimed at improving maternal health by reducing maternal mortality by three quarters (75%) and achieving universal access to reproductive health between 1990 and 2015. This goal is monitored by two indices namely: maternal mortality ratio and proportion of births attended by skilled health personnel.

Globally, in the year 2008, there were an estimated 358,000 maternal deaths and of this, the developing world accounted for (355,000) or 99% (WHO, UNICEF, UNFPA, & The World Bank, 2010). These figures have financial implications for the health sector of affected countries. On the one hand, high income countries with high standards of living spend an average of 7.0% of Gross Domestic Product (GDP) on health and on the other hand, low income countries, with low standards of living, spend an average of only 4.2% on the health sector (Cieza & Holm, 2010). Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit, Dolea, & Braichet, 2010).

In the year 2000, 251,000 maternal deaths occurred in Africa and 40% of the deliveries were attended by a Skilled Birth Attendant (World Health Organization, 2005). Sub-
Saharan Africa accounted for slightly more than half (270,000) of the maternal deaths in 2005. An increase in maternal deaths over the years can be observed. Nearly three fifths (204,000) of the maternal deaths in 2008 occurred in the sub-Saharan Africa (WHO et al., 2010). Though there is a slight drop in maternal mortality rates from 2005-2008, the number is still high.

Kenya is one of the countries that suffered 65% of maternal deaths in 2008. It accounted for 7,900 (2.2%) of the global maternal deaths (WHO et al., 2010). According to the 2008-09 Kenya Demographic and Health Survey (KDHS) maternal mortality in Kenya remains high at 7.9% as only 44% of births are managed by health professionals and 43% are delivered in health facilities. These statistics clearly show that over half (56%) of deliveries are done by non-professionals and more than half (57%) of deliveries are done outside healthcare facilities. Between the periods 2003 – 2008/09, there was a rise in maternal mortality rates in Kenya from 0.6% to 0.8%, indicating an increase of 0.2% (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). This is not a good indication especially that MDG number five aims at improving maternal health care.

According to an official in the Ministry of Public Health, (Masha Joseph, 2011), quoted in the Standard Newspaper of Wednesday 11th May 2011, only 44% of deliveries in the Coastal Region are done in hospitals with many pregnant women relying on Traditional Birth Attendants (TBAs), while about 70% of 170,000 women still give birth at home. The Kilifi District Strategic Plan 2005-2010 points out that accessibility of health services was low and over half (57%) of the population lived over five kilometres to the nearest health facility (National Coordinating Agency for Population and Development, 2005). It is
against this background that a study of the determinants of maternal health care utilization in Ganze district in Kilifi County, Coastal Region of Kenya was mooted.

1.2 Statement of the Problem

The MDG’s are fresh in our minds and we have approached 2015. Millennium Development Goal number five, in particular, was aimed at reducing maternal mortality rate by 75.0% between 1990 and 2015 and to achieve universal access to reproductive health. The fact that the KDHS 2008-2009 reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities is a clear indication that there is underutilization of maternal health care professionals and facilities in the country, especially in the rural areas. What determines maternal health utilization therefore needs to be understood to improve this situation with a view of achieving MDG number five. In fact, it is very clear throughout the literature reviewed that there is a dearth of recent data on the determinants of maternal health care utilization. This is despite the fact that maternal healthcare services utilization is essential for the enhancement of maternal and child health. Accordingly, little was known about the current magnitude of use and factors influencing the use of maternal healthcare services, especially in Ganze district where the study was conducted. This study therefore examined the factors that determined the utilization of maternal health care service in Ganze district in Kilifi County, Coastal Region of Kenya.

1.3 Purpose of the Study

The purpose of the study was to examine factors that influence maternal health care service utilization by women of reproductive ages (18-49 years) with a view of enhancing the
achievement of MDG number five (5).

1.4 Specific Objectives

On the basis of the study’s purpose, the objective of the study was to:

1. Find out the influence of socio-economic and demographic factors on utilization of maternal health care services.
2. Establish the facility-specific factors that influence the utilization of maternal health care services in Ganze district.
3. Establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care service utilization in Ganze district.

1.5 Research Questions

1. What is the influence of socio-economic and demographic factors on utilization of maternal health care services?
2. Why are some healthcare facilities utilized more than others by women of reproductive ages (18-49 years) seeking maternal health care services?
3. What is the influence of the preferences and perceptions of women of reproductive ages (18-49) with regard to ANC services offered at the healthcare facilities in Ganze district on maternal health care utilization?

1.6 Significance of the Study

The results of this study could be beneficial as it was envisaged to add to the existing body
of scientific knowledge on the factors that influence maternal health care service utilization and the challenges that women face as they seek maternal health care services. This may act as a springboard for further research in this area and thus bridge knowledge gaps and update scientific knowledge on this important topic.

To the government, Ministry of Health as well as other health providers, findings of this research may help them work towards policy and practical improvements in provision of maternal health care services thus reducing the number of maternal deaths consequently contributing to the attainment of MDG number 5.

Third, this research may help the government and other key health care stakeholders avoid wastage of resources because they will be able to know the determinants of maternal health care service utilization. Accordingly, appropriate and cost-effective intervention programmes can be designed and targeted to the areas with most needs. Significantly, this may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality and enhancement of reproductive health with desirable consequences on the health status of women and the population.

1.7 Scope and Limitations of the Study

1.7.1 Scope of the Study

The study was carried out in Ganze District of Kilifi County in the Coastal Region of Kenya.
1.7.2 Limitations of the Study

This was a survey research and as such attempted to understand study variables at one point in time. Accordingly, the study was limited in explaining causality and trends over time than a longitudinal or control group design on the determinants of maternal health care services utilization.

Due to ethical and legal considerations, the study only focused on women aged (18–49 years). Thus, the study was limited in that the views of women below the age of 18 years and above 49 years were not included in the study and thus research results cannot be generalized outside of the sampled population of women aged (18–49) years old.

The study was limited in that the researcher had to employ the services of an interpreter because some of the study respondents did not understand English and so interviews were conducted in either Kiswahili or Kigiryama.

1.8 Definition of Key Concepts used in the Study

**Antenatal care:** Care given to a pregnant woman from the time of conception to the onset of labour

**Distance:** The location of the health care facility in relation to the patient’s place of residence

**Grandmultiparae:** A woman who has given birth to five or more children

**Maternal Morbidity:** Is defined as “chronic and persistent ill-health occurring as a consequence of complications of pregnancy and child birth” (Ogunjuyigbe & Liasu, n.d.)
Maternal Mortality or Maternal Death: Is “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes” (“WHO | Maternal mortality ratio (per 100 000 live births),” n.d.)

Multiparae: A woman who has given birth to two or more children

Nulliparae: A woman who has never given birth to a child

Parity: Birth order in a nuclear family

Postnatal Care: Care provided following childbirth to both the mother and the infant

Primiparae: A woman who has given birth to only one child

Providers: Health staff at the selected Maternal and Child Health (MCH) facilities serving in ANC at the time of the study and those who were available for interview

Skilled Birth Attendant: Is “an accredited health professional- such as a mid-wife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborns)” (World Health Organization, 2004b).

Skilled Birth Attendance: Process by which a pregnant woman and her baby are provided with adequate care during pregnancy, labour, birth and postpartum and immediate newborn periods (Graham et al., 2001).
Trimester: “One of the three divisions of three months each during pregnancy, in which different phases of foetal development take place” (“Trimester definition - MedicineNet - Health and Medical Information Produced by Doctors,” n.d.)

Utilization of maternal health care services: Utilization of maternal health care services in this study was described in relation to the requirements by World Health Organization (1994; 2004) which only considers it medically satisfactory when:

- Women receive antenatal care during the first trimester of their pregnancy period
- Women undertake 4 or more antenatal visits before delivery of their children
- Women are attended to at delivery by trained medical personnel/practitioner
- Women deliver in a health facility

Waiting time: The duration of time (minutes) a mother has to wait before he/she is attended to by a medical professional
CHAPTER TWO: LITERATURE REVIEW

2.1 Utilization of Health Care Services

Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems, or achieving a positive body image (Cockerham, 2012). In this discourse, health care utilization refers to the use of health care services by people (Awoyemi, Obayelu, & Opaluwa, 2011). Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries (Mekonnen & Mekonnen, 2002). Thus, in order for an individual to utilize health services, they must have both physical access to a health facility and the health facility must also be able to provide the required services; the patient must also be able to pay for the health care services offered either through cash or by use of health insurance or any third party means (Shauri, 2010).

The 2005/2006 Kenya National Health Accounts (KNHA) report notes that the top two “key challenges to achieving better health status in Kenya” are “inequitable access to health services” and “shortage of qualified health workers, especially those with appropriate skills” (Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009). Access to care has most often been considered as an expression of the time or monetary costs associated with obtaining medical care, such as waiting time to get an appointment or to see a doctor or medical practitioners once in their offices, and distance one has to cover (Aday & Andersen, 1977).
Some researchers place emphasis on the idea that access as a concept is best considered in the context of whether the people actually in need of health care receive it or not (Taylor et al., 1975). People should try to distinguish between access and availability. The latter is the presence of health care resources in a given locality/area. Even though information on the number of physicians in an area may be available, we may still not know the accessibility of such health care providers in terms of the patients’ ability to pay the fees they are charged, the lack of transportation or traffic congestion typical of the place, the barriers resulting from ethnic discrimination, or office hours that cannot accommodate the patient’s own needs or schedules (Aday & Andersen, 1977).

Utilization of health services is a complex behavioural phenomenon, related to the availability, quality and cost of services, social structure, health beliefs and characteristics of the users (Chakraborty, Ataharasul, Chowdhury, Bari, & Akhter, 2003; Ebuehi et al., 2006). More critical for this study, women’s utilization of maternal health care facilities is an important health issue with regard to the well being and survival of both the mother and the child during pregnancy, child birth and postpartum period and has implications on the maternal and child mortality rates in human society (Gazali et al., 2012; WHO, 2012).

In February 1987, three international organizations namely: United Nations Fund for Population Activities (UNFPA), the World Bank (WB), and World Health Organization (WHO) sponsored a global campaign in Nairobi in form of a conference to reduce maternal mortality. As a consequence, the Safe Motherhood Initiative (SMI) was adopted to reduce the high rate of women dying during pregnancy and childbirth. The event was
aimed at raising awareness about the numbers of women dying each year from complications of pregnancy and childbirth (Starrs, 2006).

The SMI recommended that all countries provide three types of maternity care services which are vital for all expectant women namely prenatal care, delivery care, and postnatal care (United Nations, 2000a). Prenatal care services include encouraging a woman with a normal pregnancy to make at least four visits to a skilled health attendant during her pregnancy (with more visits by women with pregnancy complications), and promoting information about maternal nutrition and iron supplements to reduce anaemia, underweight and under-nutrition among pregnant women and new mothers. To provide delivery care during childbirth, all member countries were recommended to promote deliveries in health facilities and to promote the attendance of skilled health personnel including a doctor and/or person(s) with midwifery skills who can diagnose and manage obstetrical complications as well as normal delivery (Pandey et al., 2011; Cohen, 1987).

More significantly to note in this thesis is that, while motherhood is often a positive and fulfilling experience, for many women it is associated with suffering, ill-health and sometimes even death (WHO, 2012). It is thus imperative that ways to mitigate factors responsible for low utilization of maternal services be developed. However, the development of effective strategies to curb maternal deaths hinges on the identification of factors responsible for low utilization of such services underscoring the need for the present research. Furthermore, even though such studies have been carried out in Kenya, no such study has been conducted so far in Ganze district.
2.2 Status of Health Care Utilization in the World

Although utilization is an important indicator of health seeking behaviour, health status, cost and quality of services, it is not necessarily guaranteed by the availability of health care facilities (Wamai, 2009). A report carried out by the World Health Organization (2010) in 39 countries reveals that in more than half of the 27 out of the 39 countries, utilization of health care facilities was only at public facilities and was skewed towards outpatient services. More so, in the Dominican Republic, Brazil, Nepal and the Philippines between 50-60% of hospitalizations were in public health care facilities (Saskena, Xu, Elovainio, & Perrot, 2010).

Health conditions are different for urban and rural areas. Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit et al., 2010). Indeed, a study carried out in Ethiopia shows that the coverage of maternity care services is very low and that utilization of maternal health care services is lowest in rural areas (Mekonnen & Mekonnen, 2002).

According to the findings of a study carried out in rural Zimbabwe on socio-economic status and health care utilization, all forms of health care tended to be utilized by those of high or medium-high socio-economic status rated (65%) of the study subjects. This clearly indicates that the socio-economic status of an individual affects his/her health care utilization behaviour. The report further shows that seventy-one (71%) percent of respondents utilizing health services were employed by the government, private sector (72%), the church (71%), Community Based Organizations (78%) and others (64%).
Health services tended to be utilized more by employed respondents. Only traditional health services were equally utilized by unemployed respondents accounting for 50% of the users (Kevany et al., 2012).

In Kenya, there is uneven distribution of health care facilities across the country’s eight regions. The central region has about double the number of facilities per population as compared to Nyanza and Western regions (Wamai, 2009). Health care utilization varies greatly across all the eight regions of the country. More precisely, North Eastern records the lowest health care utilization rate, with 63.4% of all those who reported being ill never seeking treatment in the health care facilities, which leaves only 36.6% seeking treatment whereas Nairobi region, which is the capital city of Kenya, having the highest rate (90.6%) of utilization.

According to the 2003 Kenya Household Expenditure and Utilization Survey (KHHEUS), of all those people reporting illness, 77.2% sought health care service thus leaving 22.8% not seeking health care service. It also shows an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people which translates to an annual utilization rate of 1.92 visits per person per year (Republic of Kenya, 2004).

It is important to mention that the urban population has a higher likelihood of visiting a health care facility (81.5%) when ill as compared to their rural counterparts (75.9%) despite the fact that the average cost for outpatient utilization in urban areas is twice that of rural areas (Republic of Kenya, 2004). Despite this scenario, people in the rural areas still don’t seek health care services very often. This indicates that cost still remains a barrier to utilization of health care facilities and services as health care costs (44%) and the long
distance to the health facility (18%) were cited as the main barriers to health care utilization by those who reported being ill (Republic of Kenya, 2004).

Females reportedly make 1.2 times as many outpatient visits per capita (2.1 visits per year) as did their male counterparts (1.7). Government facilities are utilized more for outpatient services accounting for 51% of the visits, private and mission facilities account for 27% and 8% of the visits respectively, while traditional healers account for a negligible proportion of services (1%). This disparity might be as a result of the distance one has to travel and the cost of seeking health care in the various facilities available (Republic of Kenya, 2004).

Some health facilities at the rural level lack essential resources and the basic assets available are either insufficient or dilapidated. Furthermore, most rural facilities do not even have wards to admit critically sick patients. Due to poor health infrastructure, patients walk for long distances to reach the available health care facilities. Despite the high demand from the community for health care services, most rural health facilities are still lagging behind in the delivery of services (Transparency International, 2011).

The lack of equipment and other core supplies has negative impacts on the performance of health facilities. Lack of adequate health facilities and poor infrastructure forces people to walk for long distances to seek health care services; leading to some patients resorting to alternative means of treatment. This has the potential of leading to underutilization of available health care facilities (Transparency International, 2011).
According to the Kilifi District Strategic Plan 2005-2010, there were 73 health facilities distributed throughout the district. The plan asserts that accessibility of health services was low and over one half (57%) of the population lived over five kilometres to the nearest health facility. The doctor - patient ratio was 1:100,000 population which is a manifestation of staff shortages in the area (The National Coordinating Agency for Population and Development, 2005).

Ganze district, like most rural areas in Kenya, has poor health service coverage and delivery (Transparency International, 2011). Most trained medical attendants including birth attendants prefer working in urban areas as opposed to rural areas and thus health facilities in rural areas are under-staffed (Epuu, 2010). This study was able to shed some light on the status of the health care system in Ganze District.

2.3 Global Trends in the Utilization of Maternal Health Care Services

Maternal and child health are both indicators to a society’s level of development as well as to the performance of the health care delivery system (Central Bureau of Statistics (CBS)[Kenya], Ministry of Health (MOH)[Kenya], & ORC Macro, 2004). A study carried out in Peru on the effects of education on utilization of maternal health care services shows that there is a strong positive relationship between education and the use of maternal health care services (Elo, 1992).

A woman’s autonomy or level of independence in decision making is important in explaining utilization of maternal and child health care services. Urban residence, and
husband’s education have all been found to have a positive relationship to antenatal care utilization (Woldemicael, 2007; Dairo & Owoyokun, 2010).

A cross sectional study in India by (T. R. Jat, Ng, & San Sebastian, 2011) on the factors affecting the use of maternal health services in Madhya Pradesh state found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services. Women in urban areas tended to use maternal health care services more than those living in the rural areas. The levels of skilled attendance at delivery and postnatal care decreased steadily with increased birth order (T. R. Jat et al., 2011). It was also found out that an increase in the education of the mother enhances the use of the three indicators of the use of maternal health services namely prenatal care, delivery care, and postnatal care. Finally, child parity seemed to affect the use of skilled attendance at delivery and postnatal care.

Another study by Mondal (2009) carried out in Bangladesh found out that the level of education (both of the wife and husband) increased the likelihood of seeking help from a qualified medical professional. Women who reside in urban areas had a higher odd of seeking medical assistance than those in rural areas (ibid). Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious taboos. Women from families with a high socio-economic status are more likely to receive treatment from a doctor or nurse.

From the above studies, we can be able to deduce that socio-economic status as indicated by, level of education (both of the wife and husband), place of residence and religion increase the probability that women of reproductive ages will utilize maternal health care
services. Interestingly though, no study has focused on whether the attitude of health care providers towards the patients affects maternal health care utilization. Additionally, no study has focused on the attitude of the health care practitioners towards their work and utilization of maternal healthcare services by pregnant women. It is within the confines of this study therefore to find out whether the attitude of health care providers towards their work and patients determines utilization of maternal health care services.

2.4 Maternal Health Care Utilization in Africa

A study carried out in Ethiopia on the utilization of maternal health care services found out that there was low coverage of maternity service in the country. The place of residence, woman’s education, marital status, religion, parity and number of children under five years were found to have an important influence on utilization of maternal health services by women of reproductive ages. There was high level of utilization of maternal health services among urban women compared with their rural counterparts (Mekonnen & Mekonnen, 2002).

Additionally, married women were observed to be more likely to use antenatal care than their unmarried counterparts. Religion was also found to be an important predictor of antenatal care utilization. Among urban women, utilization of antenatal care is higher for those with two or more children than for those with one child. On the other hand, utilization of delivery care services is lower for those with two or more children than those with one child (Mekonnen & Mekonnen, 2002).
In another study carried out in Ethiopia on factors influencing the use of maternal health care services, it was found out that education of women determines use of antenatal care in that utilization increased with education level. Religion also affects use of antenatal care in that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs. Marital status and religion also had an impact in determining the use of antenatal care (Mekonnen & Mekonnen, 2003; Mekonnen & Mekonnen 2002).

A qualitative study carried out in rural Gambia on access to emergency obstetric care found out that structural factors in maternal health care provision discourage women from seeking care. For instance, where pre-natal care was provided on specific days in each community during week days, it hinders other people from attending. There may exist difficulties in transportation, such as poor condition of the road, lack of readily available transport, inadequate means of transportation, poor provider attitude towards patients, fear of punishment by health care providers based on previous experiences or just gossip can lead to delays in the decision making process of visiting a health facility by patients (Cham et al., 2005).

A study carried out on the utilization of antenatal care services in a Nigerian teaching hospital found out that over two fifths (47%) of the women started attending antenatal clinic only in the third trimester of the pregnancy period despite the fact that antenatal care services in the state hospital that the study was carried out was offered free of charge (Peltzer & Ajegbomogun, 2005).
In another study conducted in Nigeria, the use of maternal health services was significantly related to the level of maternal education, maternal age and marital status. Higher use was positively related to knowledge of where the Primary Health Care (PHC) service was located. Respondents with more than 4 children underutilized available maternal health services and utilization of maternal health services by respondents was significantly related to satisfaction with quality of services received (Ebuehi et al., 2006). Women’s and husband’s education and place of residence have strong positive associations with health care utilization (Woldemicael, 2007).

In Africa, all the reviewed studies have focused on determinants of maternal health care utilization such as maternal education, religion, parity, marital status and residence. However, limited literature none has focused on whether distance from health care facility has an effect on the utilization of maternal health care services. Few studies have also been carried out to find out the effects of waiting time at the reception by the patients before being attended to and the utilization of the health facility. Thus, this underscores the need for the present study in trying to find out the influence of how far one resides from a health facility and utilization of the health facility and the effect of how long a mother waits before being attended to on the utilization of maternal health care. The study thus sought to know how socio-economic and demographic as well as facility specific factors influence utilization of Maternal Health Care Services (MHCS).

2.5 Utilization of Maternal Health Care Services in Kenya

The 2003 Kenya Demographic and Health Survey indicated that almost 90% of Kenyan women received antenatal care from a medical professional with 18% being attended to by
a doctor, 70% by a nurse or midwife while 10% received no antenatal care at all (Central Bureau of Statistics (CBS)[Kenya] et al., 2004).

In a study carried out in Kenya by Fotso et al., (2009), it was found out that women’s overall autonomy is insignificant in health seeking behaviour. Further, women with at least secondary education were more likely to deliver in a health facility in general or in an appropriate health facility compared to those with no education. The likelihood of delivering at a health facility in general and in the well equipped facilities in particular significantly decreases as parity increases.

Another study carried out using data from the 2003 KDHS found out that young women mostly used skilled professional assistance during delivery. Rural women were less likely to deliver with the assistance of either a Traditional Birth Attendant (TBA) or skilled professional. Women from rich households were more likely to deliver with a TBA or skilled professional. Educated women were more likely to deliver with assistance of skilled professionals as opposed to non-educated. Women with more than 2 children were less likely to deliver with the assistance of TBA or skilled professionals compared to those with 1 child (Ochako et al., 2011).

According to a study carried out in Nyanza region of Kenya, it was found out that the higher the parity, the greater the chances of a mother delivering at home. Conversely, health facility deliveries were greatest among births to lower parity women. A person’s level of education affects how a person utilizes the health facility. Rural residence is associated with higher likelihood of home deliveries where 63% of births occur at home. However, those residing in urban areas had a higher chance of health institution delivery
with 78% births delivered in health care facilities. Lower economic status at home, medium and high economic status health institution, older mothers’ and young health institution also affects place of delivery with high chance of mothers delivering at home. In a nut shell, the study found out that the place of delivery is affected by parity, level of education, place or residence, economic status and age of the mother (Owino, n.d.).

From the reviewed literature, most studies globally, in Africa and Kenya have focused on the determinants of maternal health care utilization such as education, religion, parity and age but a limited number of studies have been carried out in Ganze district which is the study area. This therefore underscores the need for the present research which seeks to establish the determinants of maternal health care utilization in Ganze district in the Coastal Region of Kenya.

2.6 Summary of Research Literature on Maternal Health Care Utilization

In as much as most reviewed studies have focused on the determinants of maternal health care utilization and inform us of the effects of maternal education, religion, parity, marital status and place of residence on maternal health care service utilization, no such focus is evident in the literature on the rural district of Ganze. This underscores the need for the present research in trying to establish the factors associated with maternal health care utilization in Ganze.

Furthermore, all studies that have been reviewed in this work only concentrate on socio-demographic factors such as maternal education, religion, parity, marital status and place of residence on maternal health care service utilization but there is less focus on the effects of
the attitude of health care practitioners on the utilization of maternal health care services. Accordingly, the study attempted to find out the effects of the attitude of health care practitioners and utilization of maternal health care services. More so, limited attention was paid to whether the distance of a health care facility from a patient’s residence affects their utilization of maternal health care services. This study sought to fill this important gap in knowledge.

It is proper to note that limited focus was also given to the effect of waiting time before one was attended to by a medical practitioner in hospital and the utilization of maternal health care facility. The present study went a step further in trying to find out whether the amount of time one has to wait before being attended to by medical personnel has an impact on the utilization of maternal health care services.

At another level, some studies have dealt with challenges faced by expectant mothers as they seek maternal health care services but none enumerates the coping strategies these women use to respond to the challenges. For instance, a qualitative study carried out in rural Gambia found out that structural factors in maternal health care provision discourage women from seeking care (Cham et al., 2005). Despite these challenges that have been enumerated, we are not told what coping strategies these women use to address such challenges.

Finally, it is proper to also note that almost all the literature reviewed has focused on the socio-economic factors that affect maternal health care utilization overlooking facility specific factors, perceptions and preferences of women of child bearing ages that may also affect maternal health care utilization. The study sought to establish facility specific factors,
perceptions and preferences of women that affect maternal health care utilization with an aim of making recommendations to improve the state of maternal and child health in the study area.

2.7 Theoretical Framework

This study was understood and conducted within the framework of Symbolic Interactionism. Symbolic Interactionism is a micro level theoretical approach that focuses on social interactions in specific situations. It has roots in the thinking of Max Weber (1864-1920), a German Sociologist and George Herbert Mead who emphasized understanding a particular setting from the point of view of the people in it (Giddens & Sutton, 2009).

The core principles of social interaction theory include meaning, language and thought. Meaning arises in the process of interaction between people and are handled in and modified through an interpretive process used by the person in dealing with things he/she encounters. Language is the vehicle through which meanings that arise out of our thoughts are transported in social interactions.

This theory was helpful in trying to understand the meanings that people attach to certain symbols so that they seek maternal health care services. The interpretation that people derive from the symbols and maternal health care utilization enabled the researcher to come up with strategies to improve maternal health care utilization and thus reduce maternal and child mortality. In looking at the factors that influence maternal health care utilization, the
researcher adopted the Health Belief Model (HBM) embedded within the larger purview of Symbolic Interactionism perspective.

2.7.1 Symbolic Interactionism and Illness Behaviour

Illness is social and exploring the meanings that patients give to symptoms and illness becomes important. Patients are the first to recognise their illness and to decide to visit a medical practitioner, who then takes a medical history. Patients describe illness on what society teaches them and this affects the diagnosis (Laurence & Barbara G, 2007).

For this study, it was assumed that women of reproductive ages (18-49 years) must be able to draw meanings from the symptoms and attach meanings to those symptoms in order for them to be able to utilize the available maternal health care services. Borrowing from the symbolic interactionist perspective and because illness is social, the study tried to explain maternal health care utilization using the HBM.

2.7.2 The Health Belief Model

The model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions; these include susceptibility, seriousness, benefits and barriers to behaviour and cues to action (Glanz et al., 2008). The HBM suggests that preventive action taken by an individual to avoid a disease is due to the perception that they are susceptible and the occurrence of the disease would have some severe personal implications (Cockerham, 2012). Thus, women may only seek maternal health care services if they deem that the pregnancy they are carrying may have a likelihood of affecting them.
HBM makes an assumption that by taking a particular action, susceptibility (likelihood) would be reduced. However, the perception of the threat posed by disease is affected by modifying factors which are demographic, socio-psychological and structural variables that can influence both perception and the corresponding cues necessary to instigate action (Cockerham, 2012).

Action cues are required because while an individual may perceive that a given action will be effective in reducing the threat of disease, the action may not be taken if it is further defined as too expensive, too unpleasant or painful, too inconvenient, or perhaps too traumatic (Cockerham, 2012). The women may seek for health care because by so doing they feel that they have reduced the likelihood of them experiencing difficulties during the entire period of pregnancy.

The likelihood of action involves a weighing of the perceived benefits to action contrasted to the perceived barriers. Therefore it is believed that a stimulus in the form of an action cue is required to “trigger” the appropriate behaviour. Such a stimulus could either be internal (perception of bodily states) or external (interpersonal interaction, mass media communication, or personal knowledge of someone affected by the health problem) (Cockerham, 2012). Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.

The model assumes that if a person regards himself/herself susceptible to a condition, believes that the condition would have potentially serious consequences, believes that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believes the anticipated benefits of taking action
outweigh the barriers to (or costs of) action, one is likely to take action he or she believes will reduce their risks (Glanz et al., 2008).

Additionally, it is important to note that health seeking behaviour has been observed to be based upon the value of the perceived outcome (avoidance of personal vulnerability) and the expectation that preventive action would result in that outcome (Cockerham, 2012).

Finally, the theoretical framework informs this particular study on the basis of the five constructs that make up the HBM. Thus, women may only utilize maternal health care services if they feel that the pregnancy they are carrying may have a likelihood of affecting their wellbeing and that by so doing they feel that they will reduce the likelihood of them experiencing difficulties during the entire period of pregnancy. Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.
2.8 Conceptual Framework

A conceptual framework is a concise description of the phenomena under study accompanied by a graphic or visual depiction of the major variables of the study (Mugenda, 2008).

Figure 2.1: Conceptual Framework of the correlates of maternal Health Care utilization
2.8.1 Behavioural Model of Health Services Utilization

The study utilized the behavioural model of health services utilization developed by Andersen and Newman (1973) to explain maternal health care utilization. It asserts that the utilization of health service is dependent on three sets of individual factors: predisposing factors, enabling resources and the illness levels of an individual (need for health service) (Andersen & Newman, 1973; Aday & Andersen, 1977; Andersen, 1995)

2.8.1.1 Predisposing factors

Predisposing factors reflect the fact that different people have a different likelihood/propensity to use health care services. They include demographic characteristics e.g. age and gender, the social structure which determines the social status of a person and his/her ability to cope with presenting problems in society. Social structure can be measured using indicators such as education, occupation, household size, number of previous pregnancies and health-related attitude. Health beliefs include attitudes, values and knowledge about the health and health services that might have an effect on the subsequent need and use of health services available (Andersen, 1995).

Looking at the study variables, the model helps in the analysis of the effects of the demographic variables which include; age, sex, marital status and parity on maternal health care utilization in the study area. This helps to understand why there are disparities in the utilization of maternal health care services. Socio-economic factors such as education level, income, occupation and family size help in knowing the social status of an individual and help in understanding how better the individual is equipped to deal with the health problem at hand. The cultural beliefs enable us to have a better understanding of the outlook towards
health and health services which might have an effect on the need and use for health care and health services among the study subjects.

2.8.1.2 Enabling Resources

Enabling resources deal with the means that make it necessary for individuals to utilize health care services even if they are predisposed to them e.g. income, access, and availability of health services. They may either be personal or community based and make health service resources available to individuals. Enabling conditions can be measured by indicators such as a person’s income, level of family insurance coverage or other source of third party payment for health care, whether or not the person has a regular source of health care, the nature of the regular source of care and the accessibility of the source of health care.

Community enabling characteristics include the amount of health facilities and personnel in a community. Thus, if resources are reasonably plentiful and can be used without queuing up they might be used more frequently. Analysing it from the economic viewpoint, one might expect people experiencing low prices for medical care to use more services. Other measures of community resources include region of the country and the rural urban nature of the community in which the family lives. These variables might be linked to utilization because of local norms concerning how medicine should be practiced or overriding community values which influence the behaviour of the individual living in the community (Andersen & Newman, 1973).
Focusing on service provider factors such as the availability of drugs, attitude of service providers, waiting time, availability of equipments and bed space all have an effect on how health care facilities will be used. All these service provider factors enable people utilize available health care facilities because if the services provided measure up to what the clients expect then they will utilize them. People’s occupation and income are also enabling factors for utilization of health care services because with a good income one is able to pay for the expenses incurred while seeking for care and one can also be able to buy health insurance policies which cover them whenever they fall ill and thus they can be able to seek for health care services. The quality of service offered and the effectiveness of the service provider also determine whether a patient will or will not utilize health care services. Where the services are effective patients will tend to utilize such services more.

2.8.1.3 Need

According to Andersen and Newman, the need factor is the most immediate cause of health service use (Andersen & Newman, 1973). An individual must perceive illness or the probability of it occurring for him/her to seek for health care. The levels of illness represent the most immediate cause for health service utilization. Perceived severity or number of episodes of diseases have a positive association with health care utilization. The model also makes the assumption of a clinical evaluation system because individuals seek care from formal medical systems.

Indicators of perceived illness includes the days that the individual is unable to function normally because the disease interferes with how he/she conducts his daily activities like going to work, going to school, playing with their peers or even taking the children to
school. Other measures of perceived illness include symptoms the individual experiences in a given time period and a self report of the general state of health, e.g. excellent, good, fair or poor. Evaluated illness measures are attempts to get at the actual illness problem that the individual is experiencing and the clinically judged severity of that illness. Under ideal circumstances included here would be a physical examination of the individual by a medical practitioner (R Andersen & Newman, 1973).

The need for utilization of health care services will be examined on the basis of how the disease interferes with the patients daily activities.
CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter provides details of the research methodology used during the study. It offers information on the study site, research design, sampling procedures, the target population, the data collection methods and tools, and finally analysis of data. Consideration is also given to logistical as well as ethical issues.

3.2 Site of the Study

This study was conducted in Ganze district which is one of the six districts in the larger Kilifi County. Ganze district lies on Latitude 3°32'0" North and Longitude 39°41'0" East. It borders Kaloleni district to the South and Bahari district to the East. Ganze district has three divisions namely Ganze, Bamba and Vitengeni; it has a total of 16 locations and 48 sub-locations.

According to the 2009 census report, Ganze district had an estimated total population of 117,074 people with the males accounting for 53,403 (45.6%) and females accounting for 63,671 (54.4%) of the total population. The district covers a total area of 2,779 Km². Ganze district is a semi arid area where horticultural crops are produced using drip irrigation system while food crops and livestock feeds are produced using water conservation structures (Ketiem et al., 2007).

3.3 Research Design

This is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The
researcher employed a cross-sectional survey research design in the collection of data for the proposed study because it can be used to collect data from many people at relatively low cost and relatively quickly. Survey research design is always used to collect information from the field at one point in time. A survey design entails data collection on more than one case and at a single point in time in order to collect both quantitative and qualitative information in connection with two or more variables which are often examined to detect patterns of association (Alan Bryman, 2012).

3.4 Target Population

The study focused on women of reproductive ages (18-49 years) in Ganze district which is made up of three divisions namely Ganze, Bamba and Vitengeni.

3.5 Study Population

The study population consisted of women (18-49 years) who had come for antenatal care and those bringing their babies born at last delivery to the primary health care centres for immunization and other maternal and child health related services.

3.6 Sample Size Determination and Sampling of Study Subjects

3.6.1 Sample Size Determination

According to Bailey (1982), 30 elements are considered by many as the minimum size of a sample. Other researchers opt for a minimum sample of 100 units while others opt for 200 (Chadwick et al., 1984). Thirty (30) respondents were picked from each of the six health care facilities providing maternal health care services in the study area.
3.6.2 Sampling Procedure

This study used triangulation of various sampling techniques with a view of ensuring a representative sample of study subjects was selected and studied. To ensure sample representation and to avoid biasness within the framework of triangulation, multi-stage sampling strategy was adopted.

In the first stage, purposive sampling technique was used to select Ganze district among the six districts that constitute Kilifi County. Ganze was selected because it is a rural area and only one sub-district hospital in the whole district, namely Bamba sub-district hospital. The nearest referral hospitals are in Kilifi and Malindi districts and women with complications have to be referred to either of the two facilities.

In stage two, the researcher considered to stratify Ganze district into three divisions namely Ganze, Bamba and Vitengeni. This was to ensure that there is sample representation from the whole district.

In the third stage, a list of all the health facilities that offer maternal health care services in the district was drawn. Two health care facilities that provide maternal health care services were selected using simple random sampling technique from each of the divisions making a total of six health care facilities.

Lastly, study subjects were selected using convenient sampling. The interviewer was at the health care facility and interviewed 30 subjects from each health care facility giving a total sample size of 180. There was oversampling of study respondents by 9 subjects giving a total sample size of 189.
3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion Criteria

- Subjects included in the study only comprised of women of reproductive ages (18-49 years).

- Only those women who: (i) brought their babies born at last delivery and (ii) those coming for delivery to the primary health care centres for antenatal care services and (iii) those coming for immunization services were eligible for the study.

- Only those respondents who gave an informed consent of participating in the study were interviewed after they had signed the consent form.

3.7.2 Exclusion Criteria

- Women seeking other health services other than maternal health care services from the primary health care centre were not interviewed.

- Women under the age of 18 years were not interviewed because of legal and ethical issues.

- Those women who did not consent to voluntarily participate in the study were not interviewed.

3.8 Data Collection Procedures and Tools

The study employed the use of the interview schedule as the primary tool of data collection because literacy levels in Ganze district were relatively low. Interviews were carried out on
a face to face basis with the respondents who did not know how to read and write and the responses generated from the interviewees were accurately recorded.

3.9 Data Analysis

The collected data from the field was edited, coded and classified into response categories; this was done with the help of the Statistical Package for Social Sciences (SPSS, version 20.0). Descriptive statistics were used to display the Socio-Demographic characteristics of study respondents and utilization of maternal health care services in Ganze District. Frequency tables were used to present the Socio-Demographic distribution of study respondents and pie charts and bar graphs were applied to aid in the visual appreciation of the Socio-Demographic characteristics.

The chi-square test was used to examine whether or not there exists a relationship between the categorical variables; and Binomial Logistic Regression was used to carry out inferential analysis on the determinants of maternal health care utilization due to their binary nature. Logistic regression was used to examine the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). In order to identify the factors that predict utilization of maternal health care services, Multivariate Logistic Regression (MLR) was therefore applied. All the independent variables that were identified as having an association at the bivariate level were included in the model and the significance level for all the statistical analysis was set at 95% \( (P \leq 0.05) \) confidence level.
3.10 Ethical Considerations

Ethical clearance for the study was applied to and granted by the Ethical Review Committee (ERC), an agency of the National Commission for Science, Technology and Innovation (NACOSTI). Further, research clearance was also obtained from the Deputy County Commissioner Ganze Sub-County and the Kilifi County Research Coordination Committee to visit health care facilities in Ganze and conduct the study.

During the survey, the researcher explained the purpose of the study to the respondents. This was done to ensure that the respondents gave an informed consent for taking part in the study. Furthermore, this ensured cooperation from the respondents and it helped to avoid any suspicion on the part of the study subjects.

The researcher insisted on and adhered to voluntary participation of respondents in giving information relevant for the study to avoid any coercion in the data collection process. The researcher maintained confidentiality by ensuring that respondents’ information was used only for the purpose of the study and no names of respondents were displayed and that interview schedules were to be kept securely under lock and key.
CHAPTER FOUR: STUDY RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides results of data analysis from the 189 interviewed respondents in Ganze District guided by the research objectives as elucidated in Chapter One. The study over sampled by nine (9) respondents. From the study it is evident that more women were sampled from Bamba division (36.0%) than the other divisions in the district.

This analysis and discussion focuses on the following themes: socio-economic and demographic dimensions of the local community, facility specific factors and women’s preferences and perceptions of ANC services offered at the health care facilities in Ganze district with regard to their use of maternal health care services. The findings are presented in tabular format and figures that clearly show the variations in responses among study variables.

4.2 Socio-Demographic Dimension of Respondents

This section focuses on the different or diverse characteristics with a bearing on the utilization of maternal health services. For the purpose of this research, our key interest was to conduct an assessment of the following parameters towards utilization of maternal health care services; age of respondents, education levels, education levels of their spouses, marital status, income levels, parity and religion. These parameters were investigated and results are presented next.
4.2.1 Age of Respondents

Age of respondents is critical as a variable in this study as it sheds some light on not only the maturity of the study subjects but also ensuring that the selection of study participants remained ethical. Further, age was included because of the assumption that the older the respondents the more mature and experienced on maternal issues and decision making. Indeed, differential age among expectant mothers cannot be gainsaid when it comes to making important maternal decisions that may have value in enhancing maternal and child health. The distribution of respondents by age is aptly presented in Table 4.1.

Table 4.1: Distribution of Respondents by Age

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>70</td>
<td>37.0</td>
</tr>
<tr>
<td>23-27</td>
<td>55</td>
<td>29.1</td>
</tr>
<tr>
<td>28-32</td>
<td>42</td>
<td>22.2</td>
</tr>
<tr>
<td>33-37</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>38-42</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>48-52</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Findings in Table 4.1 indicate that out of the sampled (189), repondents over one third (37%) were between ages 18-22 years old. This clearly indicates that most women start giving birth at an early age. Of the sample, over one quarter (29%) were between the ages of 23-27 years and only 5% of the respondents were aged 38 years and above.

Early marriages and giving birth at early age exposes the women to high chances of not gaining higher education thus leading to over reliance on their spouses for all their needs consequently leading to financial dependence. Dependancy has implications for maternal
health care utilization probably because women will always have to ask for money whenever they want to visit the health facility during their clinic appointments. Subsequently, it may also lead to women not attending maternal health care clinic as expected especially if the clinics are in far off places because of lack of finances to pay for their bus fare. Consequently, this may result to low or poor maternal health care service utilization. Additionally, young single women may not attend maternal health care clinic because they may be trying to hide the pregnancy from their parents and relatives.

The low percentage (5%) of women aged 28 years and above attending antenatal clinic might probably be a result of them having gone through subsequent births and thus don’t find it necessary because they feel they have had more successful birth experiences without any complications. This might also be attributed to them having stopped giving birth. This finding corroborates those of Jat et al., (2011) who found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services compared to their older counterparts.

4.2.2 Marital Status

The Marital status of a person in this study was conceived to mean the civil state of an individual in relation to marriage laws of the country. This variable was deemed important in this study because it helps in determining how maternal and child health decisions are made in a largely patriarchal African society where it is assumed that all decisions in the homestead are to be made solely by male members of the family because they are the heads of their families. The distribution of respondents by their marital status is presented in Table 4.2.
Table 4.2: Percentage distribution by respondents marital status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>Married</td>
<td>170</td>
<td>89.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Results in Table 4.2 depict that majority (90%) of the sampled respondents were married, only 7% were single, while 2% and 1% were widowed and separated respectively. Field observations showed that most of the respondents who were single were between ages 18-22 years old and either lived with their parents or relatives. The high (90%) number of respondents in marital union was expected because the study focused on women in their reproductive ages, many of whom were expected to be married due to societal expectations. Indeed, this finding corroborates those of Ebuehi et al. (2006) and Mekonnen & Mekonnen (2002, 2003) who stated that marital status is related to utilization of maternal health services because married women were more likely to use antenatal care than their unmarried counterparts.

4.2.3 Religious Affiliation

Religion is herein conceived as a complete and acceptable system of set beliefs and practices that members of society adhere to. It is an institution that exercises social control among its members. Accordingly, affiliation to religious institution is one of the primary activities in society. Of importance in this study, is that religious affiliation may influence decisions on adoption of contraception, marriage, maternal and child health issues among
respondents. The distribution of respondents according to their religious affiliation is presented in Figure 4.1.

![Religious Affiliation](image)

**Figure 4.1: Distribution of respondents by Religious affiliation**

Figure 4.1 reveals that a half (50%) of the respondents were Christians, slightly over one tenth (12%) were Muslims, 1% subscribed to African Traditional Religions and slightly over one thirds (37%) reported that they were Atheists. This indicates that Ganze district is majorly a Christian community. Interestingly, 37% of the respondents don’t belong to any religion. This may be explained by the remote nature of the area which is compounded by lack of infrastructure and high levels of poverty. The poor state of infrastructure and poverty have probably delinked the community from accessing or being accessed by main stream religious evangelists.

The higher (50%) number of respondents being Christians is a mirror of Kenya, which is predominantly Christian owing to aggressive penetration of Christian evangelists and size of the Christian faith which puts it at an advantage with regard to resources and numbers over other faiths in the country. The strength in resources and numbers might have enabled
Christian denominations to penetrate this remote area more than other faiths which had limited resources and small numbers of adherants. This finding may have an influence on maternal health care utilization in the study area in line with observations by (Mekonnen & Mekonnen, 2002, 2003; Mondal, 2009) have linked religion to the fact that it affects utilization of antenatal care. They demonstrated that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs and that Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious believes.

4.2.4 Education Level of Respondents

Education is one of the powerful drivers of social change in society in that those with higher levels of education seem to adopt new ideas and innovations faster than their counterparts with low levels of education. Thus, the education level of respondents is a critical variable in this study as it is indicative of a person’s level of understanding, access and uptake of information related to maternal and child health issues. Findings of the study on the level of education of respondents are presented in Table 4.3.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non formal education</td>
<td>85</td>
<td>45.0</td>
</tr>
<tr>
<td>Some primary education</td>
<td>57</td>
<td>30.2</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>35</td>
<td>18.5</td>
</tr>
<tr>
<td>Some secondary education</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Secondary school completed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results in Table 4.3 indicate that out of the sampled (189) respondents, over two fifths (45.0%) had never gone to school, over one quarter (30.2%) had some primary education, with slightly less than a fifth (18.5%) reporting to have completed primary level of education. Those who reported to have either some secondary, completed secondary and others were only less than one tenth (6.3%).

From Table 4.3, it is apparent that the majority (93.7%) of the interviewed women of Ganze district were lowly educated. This finding may have an implication on the level of uptake of information on maternal and child health, adoption of maternal health care services and family planning. The levels of low education coupled with the culture and traditions of the community may compound the uptake of maternal health care services in an area. Further, the low levels of education in the area may have serious implications on other socio-economic opportunities such as securing lucrative employment and access to knowledge, especially on maternal health care services.

In fact, it has been shown that women of higher levels of education have a higher likelihood of fulfilling the requirements of the description of use of maternal health services as described by the WHO (1994; 2004). Such women have more capability to uptake new information on maternal health care practices than those with a low education background. Indeed, Elo (1992) reported that there is a strong positive relationship between education and the use of maternal health care services.
4.2.5 Education Level of Respondent’s Spouse

Owing to the aforementioned importance of the level of respondent education on the uptake of maternal health care services, it was prudent to investigate the combined effect of education on maternal health care utilization by including spousal education level in the matrix. More precisely, the education level of the respondent’s spouse was envisioned to be an important variable in this study because it may act as an enabling factor in the utilization of information concerning maternal and child health practices, access and uptake of such services. Findings on the education level of the respondent’s spouse are presented in Figure 4.2.

**Figure 4.2: Distribution of respondents spouse by level of education**

Figure 4.2 depicts that slightly over one fifth (20.5%) of the sampled respondents’ spouse had never gone to school, over half (56.5%) had either attained some form of or completed primary education, while over one quarter (28.8%) had either some form of or completed secondary school level of education and above. The level of education of the respondent’s
spouses indicates that there are educational differentials between male and female members of society in Ganze district. Level of education among the males is higher than that among the females. This finding is not a surprise to this study as it is a mirror of the situation in the country owing to the patriarchal nature of the society where boys have higher access to schooling opportunities than their female counterparts.

However, significant to mention is that spousal educational level may facilitate the utilization of maternal health care services because it enhances the capacity to access information that can be shared with the marital partner. Such sharing of useful information and knowledge, especially on maternal health may make the spouses see the importance of visiting maternal health care clinics for their ANC. Accordingly, such visits have the potential of bettering their health status and that of their unborn children. This finding is in tandem with those of Woldemicael (2007) and Dairo & Owoyokun (2010) when they reported that high maternal and husband’s education have a positive relationship to antenatal care utilization.

4.2.6 Respondents Source of Income

Respondents source of income in this study was conceived to mean the main livelihood strategy that respondents eke out a living by receiving money on a regular basis for work done at the end of every month. This variable was considered important as it helps to highlight the ability of respondents to pay for the cost of health care services offered. Findings on respondents’ source of income are presented in Table 4.4.
Table 4.4: Distribution of respondents by main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>Casual employee</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>107</td>
<td>59.4</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 9*

Table 4.4 depicts that almost three fifths (59.4%) of the respondents had no source of income clearly alluding to the fact that most of these women were financially dependent on their spouses. The high (59.4%) number of women having no source of income may probably be explained by the fact that women, as shown in Table 4.3, have very low levels of formal education. This means that their access to formal employment is low.

Indeed, the absence of prerequisites (education and skill training) to formal labour pushes women in Ganze out of formal means of livelihood where they can earn a regular income and attain financial independence that may enhance their access to maternal care. The foregoing may be explained by the patriarchal nature of the African society which favors boys over girls in education. In fact, women are seen as homemakers and as such have to stay at home and take care of their husbands and children whereas the husbands are expected to provide for the family.
4.2.7 Source of Income of Spouse

Respondents spouse’s source of income was considered as an important variable in this study as it acts as an enabling factor to utilization of maternal health care services. This is because the earned income can be used to cater for the necessary financial obligations that might be accrued in the process of seeking maternal health care services. Results on the respondents spouse’s source of income are presented in Table 4.5.

Table 4.5: Distribution of respondents by spousal main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>04</td>
<td>2.4</td>
</tr>
<tr>
<td>Government employee</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>18</td>
<td>11.0</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Casual employee</td>
<td>62</td>
<td>37.8</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>06</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>52</td>
<td>31.7</td>
</tr>
<tr>
<td>Not aware</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 25

Table 4.5 presents findings of respondents spouses source of income. Of the total respondents sampled (189), over one third (37.8%) of the respondents spouses were engaged in casual employment, meaning they do not earn a regular income. More than one quarter (31.7%) observed that their spouses have other sources of income other than the ones elucidated in the interview schedule. Simple observations during field work showed that most men in the area are engaged in charcoal burning. The high (37.8%) number of spouses being in casual employment means that there are times that they are out of a job and thus might not be able to always provide financially incase the wife wants to make an
ANC visit. This situation is compounded by observations made during field work that most women interviewees lived far away from the available maternal health care facilities. Accordingly, most of them reported walking as their main means of reaching the nearest health care facility. This finding confirms that of Simkhada et al., (2008) who posits that women’s employment affects antenatal care uptake.

4.2.8 Parity

Parity in this study was conceptualized to mean the birth order in a nuclear family. Parity was considered an important variable in this study because it aids in explaining the differentials in utilization rates of maternal health care services by the number of children one has. Findings of the study on parity are aptly presented in Figure 4.3.

Figure 4. 3: Distribution of respondents by parity

Figure 4.3 indicates that slightly more than two fifths (43%) of the respondents were multiparous, more than one fifth (23%) were grandmultiparous, more than one tenth (15%) were primiparous and slightly less than one fifth (19%) were nulliparous families.
Parity has an important influence on utilization of maternal health services by women of reproductive ages (Mekonnen & Mekonnen, 2002). The relationship between parity and utilization of maternal health care services in Ganze will be tested using Chi-square and regression analysis in the later sections of this thesis.

4.2.9 Decision to Seek Maternal Health Care

The variable on who makes the decision to seek maternal health care was conceived to be important for this study as it sheds some light on the decision making process between male and females in society. The level of autonomy in decision making among the women and its effects on utilization of certain services is also critical in the analysis of maternal health care services utilization. However, Given the patriarchal nature of Kenyan communities where men are considered the heads of the households and thus responsible for decision making and the fact that health care in the household is a role of the female gender, it was critical to include the variable to see the decision maker on matters of uptake of maternal health care services in Ganze.

Further, maternal health care does not only fall within the purview of gender roles where the women are expected to perform but it actually affects women only making its decision to uptake or not very critical for women despite the patriarchal nature of society. Data on who makes decision with regard to uptake of maternal health care services in Ganze will also help in understanding whether the autonomy of women in decision making affects their utilization of such services. Results of who makes decision to seek maternal health care services are presented in Figure 4.4.
Figure 4.4 depicts that slightly more than three fifths (61%) of the respondents, were found to make joint decisions on MCH, while only one quarter (25%) of women were observed to make the decisions on their own. Less than one tenth (9%) of MCH decisions were observed to be made by the respondents’ spouse and (5%) of the times decisions are made by other people, either parents or relatives living with the respondent.

On one hand, the higher (61%) percentage citing joint decision making is a clear testimony of the growing gender empowerment and dynamic nature of society where women are gaining, albeit gradual, their social space as key players in decision making with regard to matters touching on their lives. This seems to happen regardless of the strong patriarchal nature of the Kenyan society. On the other hand, the one quarter (25%) who said they make the decision themselves was expected in that health care and indeed, maternal health care decision making and uptake of its services are a preserve of women owing to the genderized roles in society, where health is classified as a domestic role to be undertaken by women. In fact, women’s autonomy in decision making has been reported by
Woldemicael (2007) as an important factor in explaining utilization of maternal and child health care services.

4.2.10 Hospital Deliveries

The number of hospital deliveries was considered to be a critical aspect in this study since it gives further insight into the utilization rates of institutional delivery services among the rural women of Ganze district. Findings with regard to this variable are presented in Figure 4.5.

![Hospital Deliveries](image)

*Figure 4.5: Distribution of respondents by hospital deliveries*

Study findings presented in Figure 4.5 clearly indicate that of all (189) the respondents interviewed, only over two fifths (44%) had ever had hospital deliveries, while over half (56%) had never had any hospital deliveries. This finding corroborates those of the KDHS 2008-2009 which reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). Interestingly, this is happening regardless of the
understanding that increasing the proportions of delivery taking place in health facilities is important in reducing health risks to both the mother and her unborn child and consequently preventing both maternal and child mortality.

However, Ganze district being a rural area, 44% of the interviewed mothers having ever delivered in health facilities is quite high and somehow slightly contradicts the KDHS 2008-09 which indicate that only 35.4% of deliveries take place in health facilities in rural areas (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). The reason for the difference could be attributable to differences in the characteristics of the samples used in the two studies. Further, whereas the KDHS 2008-09 was a country wide study encompassing women from both urban and rural areas, this study focused only on Ganze which is a rural and poor district in Kilifi County.

4.2.11 Place of Delivery of Child at First Birth

The place of delivery of the first born child was considered an important variable in this study as it highlights the differentials in place of delivery due to the fear of child birth associated with prior birth experience of women in their second parity. This variable was included in the study because experiences of first birth may have a bearing on uptake or non-uptake of maternal health care services. Results of the place of delivery of child at first birth are presented in Table 4.6.
Findings in Table 4.6 show that over half (53.3%) of the respondents had their first births at home (alone or with the help of a relative), while slightly more than one third (34.9%) had their first delivery in a health care facility with the help of a trained health professional. The over half (53.3%) of women of reproductive ages giving birth at home (alone or with the help of a relative) may probably be due to structural factors such as long distance to the hospital, poor road network and lack of transportation. This finding is consistent with that of Ochako et al (2011) and (Owino, n.d.) who reported that delivery with the aid of a TBA or skilled professional is less likely to happen among rural women. Accordingly, rural residence is largely associated with higher likelihood of home deliveries. The remote nature and poor infrastructural development in Ganze may aptly explain these disparities reported in the study.

4.2.12 Place of Delivery of Latest Child

Place of delivery of latest child was envisioned as an important variable in this study as it highlights the differentials in place of delivery between the first born child and subsequent deliveries. The assumption is that if the first child was born in a health care facility and the
experience was satisfactory to the mother, there are high chances that subsequent births would take place in health care facilities and vice versa. Results of the study with regard to this variable are presented in Table 4.7.

Table 4.7: Distribution of respondents by place of delivery of child born at latest birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>65</td>
<td>42.5</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>70</td>
<td>45.8</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>07</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>153</td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 36

Findings of the study in Table 4.7 depict that prior to the study, over two fifths (45.8%) of the women had delivered their latest child at home or with the help of a relative, while another over two fifths (42.5%) had been observed to have delivered in a hospital with the help of a trained health professional. In comparison with place of delivery of first birth as captured in Table 4.6, over half (53.3%) had their first births at home alone or with the help of a relative while slightly more than one third (34.9%) had their first delivery in a hospital with the help of a trained health professional.

The two sets of findings, Table 4.6 and Table 4.7, show interesting trends that, on one hand, there is a decline (from 53.3% to 45.8%) of women giving birth at home or with the help of a relative and, on the other hand, there is a subsequent increase (from 34.9% to 42.5%) of women who had their subsequent deliveries in a health care facility compared to their first birth. These findings are not a surprise to this study in that they show the gains
that are being made in enhancing deliveries in health care facilities and in the hands of professionals as envisioned by government policy and the MDGs, especially goal number five (5). In fact, the findings are inconsistent with those of Fotso et al (2009) and Mekonnen & Mekonnen (2002) who reported that health facility delivery decreases as parity increases. More specifically, they reported that those with two or more children have lower utilization of health care delivery care services, a fact refuted by the findings of this study.

4.2.13 Trimester Women Visited Health Facility During First Pregnancy

The concept trimester is used in this study to refer to divisions of three months during pregnancy that an expectant mother had started ANC visits. It is expected that women will start visiting ANC services immediately they realise that they are expectant. The variable trimester in first pregnancy signify which month the interviewed women started ANC visits during their first pregnancy. This variable was considered important in this study as it sheds some light on how well women of child bearing ages utilize maternal health care services. The assumption being that they will start uptaking ANC services on the first month that they realise they are expectant. Findings of the study on trimester in first pregnancy are presented in Figure 4.6.
Figure 4.6: Distribution of respondents by trimester one started ANC visits during first pregnancy

Figure 4.6 presents findings of the trimester that women started their antenatal visits during their first pregnancy. It is shown in Figure 4.7 that more than three fifths (65%) of the respondents had their first visit during the second trimester, one fifth (20%) had their first visit during the first trimester, less than one tenth (9%) had their first visit during the third trimester and only 6% never went for ANC visits during their first pregnancy. Findings are consistent with those of a study carried out in Ethiopia (Afework et al., 2014) which found out that majority (68.3%) of the women were observed to have started attending ANC during the second trimester.

This finding can further be explained by field observations where most women attributed having not had their first ANC visit due to the fact that they did not and still do not know when exactly they are supposed to make their first visit once they discover that they are expectant. The lack of knowledge on when to begin their ANC visits can probably be as a result of low levels of education among the women as captured in earlier findings of the study where only less than one fifth (6.3%) reported to have secondary education and
above. Lack of education denies these women opportunities to access information, including on health care and hence this impacts on uptake of health care services including maternal health care services.

4.2.14 Trimester Women Visited Health Facility During Latest Pregnancy

Trimester in this study was conceived, inter alia, to mean divisions of three months during pregnancy in which the respondents started using ANC services in their current pregnancy. This variable was considered important in this study first, because it sheds some light on how well women of child bearing ages utilize maternal health care services by focusing on the first month that they seek ANC services for their children at last birth. Second, it could provide comparative data with regard to which trimester, first or second, birth parity is associated with and third, whether there are dynamics in the process. Findings of the study on the trends for this variable are captured in Figure 4.7.

![Figure 4.7: Distribution of respondents by trimester when one started ANC visits during latest pregnancy](image)
Figure 4.7 depicts that slightly less than one quarter (24%) had their first ANC visit for current pregnancy during the first trimester, more than three fifths (67%) had their first visit during the second trimester and less than one tenth (9%) had their first visit during the third trimester. The low (24%) percentage of women having their first visit during the first trimester might probably be attributed to lack of maternal health care education or structural factors such as long distances to the health facility and maternal health care services being offered at the health facility on certain days of the week only hence inconviniencing users.

Comparatively, women seeking ANC services during their first pregnancy, Figure 4.7 and women seeking ANC services during their latest pregnancy, Figure 4.8 show over three fifths 65% and 67% respectively appearing in the second trimester. Only a slight increase of 2% of women seeking ANC services in the second trimester of their current pregnancy can be observed. This can probably be attributed to the low levels of education and high poverty rates in the study area as adduced and implied in earlier findings of the study respectively. Low levels of education and high poverty rates makes it difficult for women to either realise they are pregnant in the first trimester because they are ignorant on ANC matters and may not be in a position to access or afford pregnancy testing kits respectively.

4.2.15 Distance to Health Care Facility

Distance to the health facility was considered as an important variable in this study as it provided an insight into the structural barriers that may exist in society in relation to utilization of maternal health care services. Considering the remote location and poverty rate (over 68%) in the county, especially in the study area, the inclusion of the variable was
both timely and significant for the study. Results of the study on this variable are presented in Figure 4.8.

Findings in Figure 4.8 indicate that more than half (56.4%) of the studied women said that the distance to the health facility was a concern. Field observations show that they had to spend a lot of time on the way to and from hospital and this affected how they utilized maternal health care services. Thus, many stated that they only went to the hospital when they deemed it necessary. This study finding supports that of Cham et al (2005) who posits that delays in decision making process of visiting a health facility can be caused by structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport and inadequate means of transportation.

Figure 4.8 also shows that more than two fifths (43.6%) of the respondents observed that the distance to and from the health facility was not a hindrance to their utilization of maternal health care services. Findings from informal interviews with these women, health
professionals and community members reveal that most of these women were used to walking long distances. Indeed, they were so used to the long distances that whenever we asked some community members on our way to the health care facilities they would retort, “nihaha kare” (literary translated to mean it is just here). The “nihaha kare” could turn out to be kilometre(s) of walking as observed during field work. This can be interpreted to mean that they are used to the long distances such that their sense of distance or how far a place is may be blurred by their experiences and cultural perceptions of distance.

4.2.16 Means of Transport to Nearest Facility

Means of transport to the nearest health facility was considered an important variable of this study as it presented to us one of the challenges that the pregnant mothers may encounter as they seek maternal health care services in their respective health care facilities. The respondents were asked to report which was the most frequently used means of transport that they used to the nearest health facility during clinic visits for maternal health care services? Findings of the various means of transport utilized by the interviewed women are presented in Table 4.8.

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>141</td>
<td>76.2</td>
</tr>
<tr>
<td>Motorcycle boda boda</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td>Bicycle boda boda</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Own/family motorcycle</td>
<td>02</td>
<td>1.1</td>
</tr>
<tr>
<td>Own/family bicycle</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Public service vehicle</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 4*
Table 4.8 indicates that slightly more than three quarters (76.2%) of study respondents reported walking to the nearest health care facility while both motorcycle (boda boda) and public service vehicles accounted for (10.8%) respectively. The larger (76.2%) percentage of the respondents who were observed to be walking to the health care facility for ANC services despite the fact that they were expectant and whether or not they had complications was amazing in that the mean distance to the nearest health facility was observed to be 7.2 Kilometers, while the mean time taken walking to the health care facility was observed to be one hundred and eleven (111 minutes) minutes or approximately one hour and fifty one minutes (1H:51 M).

Notably, despite these long distances, women had probably no other option. The lack of alternative options was probably due to poverty and limited employment opportunities constraining their financial capabilities and thus a lack of means to pay for even public transportation or seek alternative health care facilities in the locality or in the neighbourhood. However, these findings are not a surprise to this study as they are consistent with those of Cham et al (2005) who reported that structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport, inadequate means of transportation can lead to delays in the decision making process of visiting a health care facility by patients.

4.2.17 Gender of Provider

The gender of the service provider was considered an important variable in this study because some cultures and religions only accept other women to be midwives and not men. This is regardless of the fact that it is until recently that the girl child has been given an
opportunity to go to school leading to differential education qualifications. Results on the gender of provider are presented in Figure 4.9.

![Gender of provider](image)

**Figure 4.9: Distribution of respondents by their preferred gender of provider**

Results in Figure 4.9 clearly indicate that over half (53%) of the respondents had no particular preference for the gender of provider whilst over two fifths (42%) and less than one tenth (5%) said that they would want to be attended to by a female or male provider respectively.

The more than half (53%) of the respondents who said they had no particular preference for the gender of the provider may be explained first, by the recognition among respondents that providers are bound by a code of ethics and the fact that all staff undergo similar professional training and thus gender consideration does not compromise quality of care and competence among providers. Second, owing to the remote location of the district and the fact that there are limited choices of health care facilities, expectant women may not have opportunity to make choices of health care providers based on among other things gender and that they have to do with what is available.
As expected, Figure 4.9 shows that over two fifths (42%) of the respondents wanted to be attended to by female providers. Several factors can explain this. One respondent who preferred to be attended to by a female health care practitioner said that:

“kuna mambo mengine huwezi mueleza mwanamume…..mwanamke ni bora haswa amabaye amezaa yuajua kila kitu hata si lazima umwelezee”. (Translated this means that there are some issues that you cannot open up to a man….women are better especially those who have given birth because they have experienced childbirth and so know everything so you don’t need to tell them everything).

Another respondent who would like to be attended to by a female practitioner retorted that:

“Muche dza mino” (Translated into english means that the female practitioner is a woman just like herself).

Further, it is noted in Figure 4.9 that only 5% of the women would like to be attended to by a male health care provider. This is interesting and unexpected given the private and confidential nature of ANC procedures. This probably is because of the ethical confidence patients have of health care providers to handle private and confidential details regardless of gender differentials of their patients. More interestingly, two respondents among the 5% who said they would like to be attended to by a male health care provider retorted that:

“mimi napenda sana huyo daktari awe mwanamume, hawa wa kike wana madharau sana.” (Translated into english means that she would like the midwife to be a male because the female ones are usually not so friendly). To the contrary, another respondents observed
that “daktari wa kiume wanantia aibu” (Translated into English means that male practitioners make her shy).

4.2.18 Type of Provider

The type of provider was considered as a vital variable in this study as this may affect utilization of maternal health care services if the preferred type of provider by the mothers cannot be easily found in the facility. Results of the study on the type of preferred provider are presented in Figure 4.10.

![Preferred type of provider](image)

**Figure 4.10: Distribution of respondents by their preferred type of provider**

Findings in Figure 4.10 indicate that slightly more than four fifths (80.9%) of the interviewed respondents prefer to be attended to by trained medical professionals such as Medical Doctors (53.4%), Midwives (14.8%) or Nurses (12.7%). Others preferred T.B.A’s (3.2%) or a combination of all the practitioners (3.7%) whilsts more than one tenth (12.2%) had no preference. Despite more than half (53.4%) of women preferring to be attended to
by a doctor, not even a single doctor has been posted to serve in the sub-district hospital, health center and dispensaries that serve the expansive district.

However, the high number of respondents (80.9%) who preferred to be attended to by a trained medical professional might be a result of the awareness that health professionals are better trained in handling the birth process and emergency cases should any arise in the process of child birth which is always a risky affair. The finding supports MDG’s objectives especially goal five (5) that strives to make sure that women of reproductive age bracket are attended to in health care facilities and by professionals. The fact that over four fifths (80.9%) of interviewed women cited the need to be attended to by professional doctors shows goodwill in what the world is striving to achieve on the part of women.

4.3 Bivariate Analysis

Various statistical tools have been used in this work to provide an in-depth insight on the relationships that exist between the studies’ dependent and independent variables.

Bivariate analysis using Chi-square ($\chi^2$) statistic for the test of significance (i.e. goodness of fit) and Cross-tabulation was used to examine the relationship between Socio-Demographic characteristics of the study respondents and utilization of Maternal Health care services.

Further, this thesis uses the Contingency Coefficient (C) to provide a measure of association between the study variables. The rationale behind this is that Contingency Coefficient is appropriate for tables of any size (Mangal, 1987). The value of (C) is given by the formula:

$$C = \sqrt{1 - \frac{\chi^2}{\chi^2_{max}}}$$  \hspace{1cm} (Equation 4.1)
Where “n” is the sample size and “χ²” is the Chi-square value. Like γ or phi and other coefficients of correlation, C has no limit (i.e. ±1). Its upper limit is dependent upon the number of categories (i.e. the size of the table). Like Chi-square (χ²), it does not have negative values (Mangal, 1987). For a table made up of an equal number of columns and rows (K×K), the upper limit of the Contingency Coefficient is given by the formula:

\[ C_{upper \ limit} = \frac{\sqrt{K-1}}{K} \quad (Equation \ 4.2) \]

Thus, for a 2×2 table, it is 0.7, for a 3×3 table \( \sqrt{2/3} = 0.82 \) and for a 4×4 table \( \sqrt{3/4} = 0.87 \), e.t.c. However, when the number of columns and rows differ in a table, to calculate the upper limit, the smaller number is taken as K.

Important to note in this thesis is that all the analysis in this work have been conducted using version 20.0 of the Statistical Package for Social Sciences (SPSS), with all the associations/relationships being tested at 95.0% confidence interval.

4.3.1 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Place of Delivery

In this series of bivariate analyses, using Chi-square and Contingency Coefficient, a number of socio-economic characteristics were tested for their influence on the utilization of MHCS. Results of analysis based on Chi-square statistics and Contingency Coefficient for each independent variable and dependent variable have been presented, interpreted and discussed.
Discussion of findings of analysis was done with a view to integrate the results within the existing framework of knowledge in research literature reviewed in Chapter Two of this thesis. In this regard, the discussion of results in this section will draw from the Chi-square and Contingency Coefficient analyses of various Socio-Demographic characteristics (independent variable(s)) and place of delivery (dependent variable) in the order in which they are reflected in Table 4.9.

Findings in Table 4.9 shed some light, inter alia, on the relationship between Socio-Demographic Characteristics (SDC) of the respondents and Place of Delivery (PoD). The presentation of the results of analysis follows next.

From Table 4.9, an attempt is made to show whether there exists a relationship between age and use of health facilities for delivery. It is observed that women aged 28 years and above had the highest (54.5%) percentage of users who delivered in health care facilities. Further, women aged below 28 years accounted for over half (54.2%) of all home deliveries with women aged 28 years and above accounting for (4.5%) of all deliveries that took place either at the T.B.A’s clinic or on the way to hospital. Contrary to our expectations, women aged 28 years and above had more (54.5%) health facility deliveries than young women who accounted for only (40%) of health facility deliveries.
Table 4.9: Relationship between Socio-Demographic Characteristics of respondents and Place of Delivery

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Health Facility</th>
<th>Home</th>
<th>T.B.A’s clinic &amp; on the way to hospital</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>54.2</td>
<td>5.3</td>
<td>1.539</td>
<td>2</td>
<td>.463</td>
<td>.100</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>40.9</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>54.6</td>
<td>5.7</td>
<td>5.043</td>
<td>2</td>
<td>.056</td>
<td>.191</td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>36.2</td>
<td>5.8</td>
<td>21.384</td>
<td>4</td>
<td>.001**</td>
<td>.350</td>
</tr>
<tr>
<td>Other religions</td>
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<td>45.0</td>
<td>15.0</td>
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<td>12.5</td>
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<tr>
<td><strong>Parity (%)</strong></td>
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<td>0.0</td>
<td>0.0</td>
<td>18.216</td>
<td>4</td>
<td>.001**</td>
<td>.326</td>
</tr>
<tr>
<td>Primiparae</td>
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<td>3.4</td>
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<tr>
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<td>7.4</td>
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<tr>
<td>Grandmultiparae</td>
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<td>2.3</td>
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<td></td>
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<tr>
<td><strong>Respondents Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>13.612</td>
<td>4</td>
<td>.009**</td>
<td>.286</td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>64.2</td>
<td>4.9</td>
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<td></td>
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<tr>
<td>Primary</td>
<td>52.9</td>
<td>41.2</td>
<td>5.9</td>
<td></td>
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<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
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<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.860</td>
<td>4</td>
<td>.762</td>
<td>.114</td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>59.4</td>
<td>6.2</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>54.4</td>
<td>5.1</td>
<td></td>
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<td></td>
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<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>43.3</td>
<td>6.7</td>
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<tr>
<td><strong>Respondents’ income (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>4.129</td>
<td>2</td>
<td>.127</td>
<td>.267</td>
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<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>55.9</td>
<td>8.8</td>
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<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td>0.0</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Income of Spouse (%)</strong></td>
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<td></td>
<td></td>
<td>.539</td>
<td>2</td>
<td>.764</td>
<td>.097</td>
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<td>Below 4,000 shillings</td>
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<td>52.6</td>
<td>10.5</td>
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<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>55.3</td>
<td>5.3</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Overall, age was not significantly associated with place of delivery ($\chi^2=1.539; \text{df}=2; p = .463; C=.100$). Moreover, the relationship was found to be weak as indicated by the value of C (0.10). A review of literature shows that the findings of the study do not concur with the findings of studies carried out in Nigeria, Uganda and Ethiopia by (Adamu, 2011; Anyait et al., 2012; Teferra et al., 2012; Daniels et al., 2013; Wolelie et al., 2014; Abeje et al., 2014) who contended that age of women of reproductive age was significantly associated with institutional delivery service utilization.

Results in Table 4.9, also show that more than half (54.6%) of married women gave birth at home with three quarters (75.0%) of mothers who are either single, separated, divorced or widowed delivering in a health facility. Interestingly, women who are either single, divorced separated or widowed have a high likelihood (75.0%) of having a health facility delivery than married women. Nonetheless, the relationship between marital status and the place of delivery was not significant ($\chi^2=5.043 \text{ df}=2 \ P=.056 \ C=.191$). This finding is in agreement with other studies from Ethiopia and Uganda (Assfaw & Sebastian, 2010; Anyait et al., 2012) who affirmed that marital union does not influence place of delivery.

Findings in Table 4.9 reveal further that more than half (58.0%) of Christians delivered in a health facility whereas more respondents with no religion and from non-Christian religions delivered at home and in a T.B.A’s clinic or on the way to a health facility. Indeed, religion was significantly associated with place of delivery ($\chi^2=21.384; \text{df} = 4; p=0.001; C=0.350$). Hence we conclude that religion has a significant influence on utilization of maternal health care services. The findings concur with that of Adamu (2011) in Nigeria who contended that religion had a significant association with institutional delivery with Christian women
more likely to deliver in health facilities. Hence we conclude that religion has a significant influence on utilization of maternal health care services.

Data in Table 4.9 reveals that slightly more than three quarters (75.9%) of the Primiparae women had health facility deliveries with less than a tenth (2.3%) of Grandmultiparae women delivering either at the T.B.A’s clinic or on the way to hospital. This suggests that lower parity women have a high (75.9%) likelihood of taking hospital deliveries. This finding confirms that parity has an influence on women’s place of delivery. These may be probably women in their first pregnancy and that they are being cautious of perceived risks that are associated with childbirth. Indeed, parity was significantly associated with place of delivery ($\chi^2=18.216$; df=4; $p=0.001$; $C=0.326$). The study’s findings are consistent with those of (Assfaw & Sebastian, 2010). The findings also confirm those of (Tsegay et al., 2013) who contended that parity is an important determinant of place of delivery.

Table 4.9 also depicts that all (100%) women who had secondary and above level of education delivered in a health care facility. Further, more than three fifths (64.2%) of women with no level of education were observed to have had home deliveries. This finding could be explained by the fact that women with a high education level have the capability to uptake information about maternal health care services subsequently leading to utilization of such services. As reported by (Elo, 1992; Tura & G/Mariam, 2008; Gupta et al., 2010; Adamu, 2011; Anyait et al., 2012; Daniels et al., 2013; Abeje et al., 2014; Ayele et al., 2014; Odo & Shifti, 2014; Wolelie et al., 2015) maternal education level is a critical aspect in the utilization of maternal institutionalized delivery services.
Indeed, maternal education was significantly related to the place of delivery ($\chi^2=13.612; \text{df}=4; p=0.009; C=0.286$). These finding is in tandem with that of (Woldemicael, 2007) and also confirms those of (Teferra et al., 2012) who posited that there is a positive relationship between maternal education and place of delivery.

Findings in Table 4.9 depict that half (50.0%) of women whose husbands had secondary and above level of education had hospital deliveries with slightly less than three fifths (59.4%) of women who were married to men with no formal education having their deliveries at home alone or assisted by a relative. This finding may be explained by the fact that husbands education may act as an enabling factor in ensuring the mother receives quality care during child birth as the husband has knowledge on maternal health issues. This finding suggests that women married to men with a high educational level are more likely to deliver in a health facility than those women married to men with no formal education.

However, spousal education level was not significantly associated with place of delivery ($\chi^2=1.860; \text{df}=4; Pp=0.762; C=0.114$). Apparently, this finding is contrary to those of (Woldemicael, 2007); Gupta et al., 2010; Anyait et al., 2012; Teferra et al., 2012; Ayele et al., 2014; Wolelie et al., 2014; Prasad, 2014; Odo & Shifti, 2014; Abeje et al., 2014) who contended that spousal education level is significantly associated with maternal health care utilization in institutional setups.

Results in Table 4.9 depict that three fifths (60%) of women who earned 4,000 shillings and above had hospital deliveries with more than half (55.9%) of women earning less than 4,000 shillings having home deliveries. The high number of women earning 4,000 shillings...
and above having health facility deliveries with only (35.3%) of women earning less than 4,000 shillings having health facility deliveries could be as a result of the costs involved. As reported by Tura & Mariam, (2008) and maternal income has an influence on utilization of institutional delivery services. However, maternal income was not significantly associated with place of delivery ($\chi^2=4.129$, df=2, p=0.127; C=0.267).

From Table 4.9, it is evident that less than one tenth (5.3%) and more than half (55.3%) of women whose spouses earned 4,000 shillings and above delivered either at the T.B.A’s clinic or on their way to hospital or at home respectively. Further, slightly more than one third (36.8%) of women whose spouses earned less than 4,000 shillings had health facility deliveries. As expected, women whose husbands earned 4,000 shillings and above were bound to have more health facility deliveries because this acts as an enabling factor than their counterparts married to husbands who earn less than 4,000 shillings. This could be explained by the fact that they have resources that they could use in the course of seeking institutional delivery services as opposed to their counterparts who may not be able to access institutional delivery services due to shortage or lack of needed resources.

However, spousal income level was not significantly associated with place of delivery ($\chi^2=0.539; \text{df}=2; \text{p}=0.764; \text{C}=0.097$). Hence we conclude that spousal income level has no relationship with place of delivery.

4.3.2 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Antenatal Care

Table 4.10 shows the relationship between Socio-Demographic Characteristics and Antenatal care. In this set of tests, the researcher first makes an attempt to determine
whether a relationship exists between age and number of ANC visits made to the clinic before delivery.

Findings in Table 4.10 show that women aged 28 years and above were found to be more likely (90.9%) to make 4 visits and above to the ANC clinic. More than one third (37.7%) of young women below 28 years were observed to make less than the required four visits to the ANC clinic prior to delivery of child born at last birth. A possible explanation for why less than two fifths (37.7%) of women below age 28 years made less than the required four visits could be as a result of lack of information on the required number and timing of visits to the ANC clinic. As reported by Anchang-Kimbi et al., (2014), young age (less than 20 years) is a significant risk factor associated with fewer clinic visits (less than 4).

Indeed, maternal age was significantly associated with the number of ANC visits ($\chi^2=7.063; \text{ df}=1; p=0.008; \text{ C}=0.190$). These findings are consistent with those of Banda, (2013), Tsegay et al., (2013) and Anchang-Kimbi et al., (2014), that maternal age has an influence on number of ANC visits hence we conclude that maternal age significantly influences number of ANC visits women make before delivery.
Findings in Table 4.10 show that more than three fifths (68.8%) of married women made four visits and above, while slightly more than three fifths (63.2%) of women who were single, separated, widowed or divorced made less than four visits before delivery of their
latest child. The above findings suggest that married women have a higher likelihood of having four visits and above than unmarried women. This could be attributed to the fact that they get maternal services support from their spouses either in form of maternal care information, social or financial support. The finding of this study that male spouses had higher level of education than their wives further strengthen the support that women receive for ANC services during pregnancy.

Indeed, marital status was significantly associated with ANC visits ($\chi^2 = 7.747, df=1, p=0.005, C=0.198$). This finding is consistent with that of a study carried out in India by Gupta et al., (2010) and also confirms that of Anchang-Kimbi et al., (2014) who stated that being single is a significant risk factor associated with fewer clinic visits (less than 4).

Table 4.10 further depicts that majority (91.3%) of women who profess Islam and African Traditional Religion (ATR) made four visits and above, while more than one third (38.3%) of Christian women had less than four visits to the clinic before birth of their latest child. These findings show that women who profess Islam and African Traditional Religion have a high likelihood (91.3%) of having made four visits and above. Indeed, religion was significantly associated with ANC visits ($\chi^2 = 7.674, df=2, P=0.022, C=0.198$). The study finding corroborates that of Adamu, (2011) who contends that religion has an influence on number of ANC visits.

Findings in Table 4.10 reveal that more than three fifths (69.4%) of Nulliparae women made less than four visits, while slightly more than three quarters (76.7%) of grand Multiparae women made four and above ANC visits. This finding can be possibly explained by the fact that women of a higher parity have had previous birth experiences
which might have been occasioned by a complication warranting them to make all the required visits to avert any complication that may arise. Indeed, parity was significantly associated with ANC visits ($\chi^2=24.609$; df=3; $P=0.001$; $C=0.339$). This finding is in agreement with that of Banda, (2013) who reported that parity is significantly associated with number of visits to the ANC clinic.

Table 4.10 further depicts that slightly less than three quarters (72.9%) of women with no formal education made four visits and above with one half (50.0%) of women with secondary education and above making 4 visits and above. The high (72.9%) number of women with no formal education having had more than four ANC visits and half (50%) of women with secondary education or more having less than four visits could be explained by the fact that most respondents knew about maternal health care services irrespective of their educational status. This suggests that existence of informal means such as radio and television among others could be significant sources of information in educating women of reproductive ages as opposed to formal education only. As argued by Banda, (2013), education level does not seem to influence number of ANC visits to the clinic but those with secondary education were more likely to make more visit to the ANC clinic. In essence, this finding contradicts that of Banda (2013) where more (72.9%) women with no formal education were observed to have had four visits and above.

Further, maternal education is associated with improved health, women empowerment and reduction of gender disparities. However, the relationship between maternal education level and ANC visits was not significant ($\chi^2=4.237$; df=2; $P=0.120$; $C=0.148$). This study finding contradict those of (Elo, 1992; Chakraborty et al., 2003; Woldemicael, 2007; Gupta et al.,
2010) who reported that maternal education has a significant bearing on the number of ANC visits.

Results in Table 4.10 also show that four fifths (80%) of women married to men with no formal education made four visits and above, while more than two fifths (46.2%) of women whose spouses had secondary and above level of education made less than four visits. Interestingly, respondents who utilized the services more had spouses with lower levels of education as compared to those who did not utilize them. This could be attributed to the fact that use of antenatal care is not limited to formal education only. Further, Maternity services are now free and there is massive awareness creation by the Ministry of Health (MoH) on utilization of MHCS in the rural areas, in addition to other initiatives such as the Beyond Zero Campaign by the First Lady Margaret Kenyatta.

Indeed, spousal education level was significantly associated with number of ANC visits ($\chi^2=6.133; df=2; p=0.047; C=0.186$). This study finding corroborate those of Woldemicael, (2007; and Daniels et al., (2013) when they contended that spousal educational level was associated with 4 and above antenatal visits.

Findings of the study in Table 4.10 also show that slightly less than three quarters (73.2%) of women who earned 4,000 shillings and above four visits and above with two fifths (40.0%) of women earning below 4,000 shillings making less than four visits. This finding could be explained on the basis of the Output Based Approach (OBA) program which aims to improve access, equity and uptake of quality reproductive health services to economically disadvantaged women. The women purchase the vouchers at a subsidized price of 100 shillings which entitles them to access reproductive health services such as
Safe Motherhood (SMH), Family Planning (FP) and Gender Based Violence (GBV) recovery services free of charge.

Maternal income was not significantly associated with number of ANC visits ($\chi^2=1.242; \text{df}=1; p=0.265; C=0.136$). Notably, this finding is not in tandem with that of Gupta et al., (2010) when they contended that maternal income had a significant influence on the number of ANC visits.

Finally, results in Table 4.10 depict that slightly more than four fifths (81.0%) of women whose spouses earned less than 4,000 shillings made four ANC visits or more compared with (75.5%) of women whose spouses earned 4,000 shillings and above. This finding could be explained by the fact that the Government of Kenya (GoK) abolished maternity fees in all public health facilities through a presidential decree on 1st June 2013 (“MaternalNewbornHealthCare_Kenya_Oct2013.pdf,” n.d.). However, spousal income level was not significantly associated with the number of ANC visits ($\chi^2=0.255; \text{df}=1; p=0.613; C=0.059$). Hence we conclude that spousal income level does not influence the number of ANC visits the woman makes during pregnancy.

4.3.3 Relationship between Socio-Demographic Characteristics and Utilization of Skilled Birth Attendance (SBA)

Table 4.11 shows the relationship between Socio-Demographic Characteristics and use of Skilled Birth Attendants services. In this study, an attempt was made to understand the relationship between age and Utilization of Skilled Birth Attendance.
Results of analysis in Table 4.11 indicate that slightly less than three fifths (59.5%) of women aged below 28 years did not have SBA service at birth of their latest child while more than half (54.5%) of the women aged 28 years and above had SBA service during their latest birth. This could be explained by the fact that marriage is seen as a sacred institution in the African set up and thus getting children before marriage was a sign of lack of morals. Accordingly, many young women who were not married ran away from their parent’s home and went to give birth elsewhere.

The relationship between age and SBA service was not significant ($\chi^2=1.530; \text{df}=1; p=0.216; \text{C}=0.099$). This finding contradicts those of Daniels et al., (2013) when they contended that use of SBA was more associated with the youth.

Table 4.11 shows that slightly more than three fifths (60.3%) of married women did not have SBA of child born at last birth, while three quarters (75.0%) of women who were unmarried had SBA services. Being married means one has a partner who could take care of them and that is why most respondents had no skilled attendance at birth, while being unmarried makes one to seek SBA services in case labour pains commence when they are all alone at home. Indeed, marital status was significantly associated with SBA services ($\chi^2=5.634; \text{df}=1; p=0.018; \text{C}=0.188$). This study’s finding is consistent with that of Daniels et al., (2013) that marital status has a significant association with SBA with single mothers more likely to seek SBA.
Table 4. 11: Relationship between Socio-Demographic characteristics of respondents and use of a Skilled Birth Attendant (SBA)

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Skilled Attendance</th>
<th>Unskilled Attendance</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
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<td></td>
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<td></td>
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<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>59.5</td>
<td>1.530</td>
<td>1</td>
<td>.216</td>
<td>.099</td>
</tr>
<tr>
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<td>45.5</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Marital Status (%)</strong></td>
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<td>5.634</td>
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<td>.018*</td>
<td>.188</td>
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<tr>
<td><strong>Religion (%)</strong></td>
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<td></td>
<td>13.463</td>
<td>2</td>
<td>.001**</td>
<td>.284</td>
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<td></td>
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<tr>
<td>Other religions</td>
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<td>60.0</td>
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<td></td>
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<tr>
<td>No religion</td>
<td>26.6</td>
<td>73.4</td>
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<tr>
<td><strong>Parity (%)</strong></td>
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<td>16.951</td>
<td>2</td>
<td>.001**</td>
<td>.316</td>
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<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>24.1</td>
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<tr>
<td>Multiparae</td>
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<td>67.9</td>
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<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>60.5</td>
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<td></td>
</tr>
<tr>
<td><strong>Maternal Education Level (%)</strong></td>
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<td></td>
<td>12.934</td>
<td>2</td>
<td>.002**</td>
<td>.279</td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>69.1</td>
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<tr>
<td>Primary</td>
<td>52.9</td>
<td>47.1</td>
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</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>1.590</td>
<td>1</td>
<td>.451</td>
<td>.106</td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>65.6</td>
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<td></td>
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</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>59.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td>3.113</td>
<td>1</td>
<td>.078</td>
<td>.233</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td>.037</td>
<td>1</td>
<td>.847</td>
<td>.025</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>63.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>60.5</td>
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</tbody>
</table>

Note: p values *:$p \leq 0.05$**: $p \leq 0.01$
Results in Table 4.11 show that less than three fifths (58.0%) of Christians had skilled attendance at birth, while three fifths (60.0%) of women who belong to Islam and African Traditional Religion had no skilled attendance at birth of child born at last birth. Christian women tend to use SBA more (58.0%) than women who profess Islam and ATR who report (60.0%) utilization of unskilled attendance at birth. According to Stenlund, (2012) women belonging to religions other than Islam have higher odds of delivering with assistance of SBA’s. Indeed, religion was significantly associated with use of SBA services ($\chi^2=13.463; \text{df}=2; p=0.001; C=0.284$). This finding corroborates that of Stenlund, (2012) who contended that women belonging to other religions had higher odds of delivering with assistance of SBA’s than those of Islamic faith.

Further, findings in Table 4.11 indicate that slightly more than three quarters (75.9%) of Primiparae women had skilled attendance services at birth during latest birth, while more than three fifths (67.9%) of Multiparae women had no skilled attendance during latest birth. Lower parity women are more likely to use SBA than higher parity women because higher parity women have experience due to previous births. As reported by Worku et al., (2013), women who had births for the first time were more likely to use Skilled Birth Attendance services. Indeed, parity was significantly associated with Skilled Birth Attendance ($\chi^2=16.951; \text{df}=2; p=0.001; C=0.316$). The study’s finding is consistent with those of (Ochako et al., 2011; Kabakyenga et al., 2012; Worku et al., 2013) who contended that parity has a strong bearing on utilization of SBA.

Table 4.11 also depicts that slightly less than one third (30.9%) of women with no formal education had skilled attendance at birth with all women with secondary and higher
education level background having skilled attendance at birth. Education exposes women to information and knowledge on the importance of utilization of SBA and thus skilled birth attendance increases with secondary education and above. According to (Kabakyenga et al., 2012), women with secondary education and above are more likely to use SBA’s than those with lower levels of education. Indeed, maternal education was significantly associated with Skilled Birth Attendance ($\chi^2=12.934; \text{df}=2; \ p=0.002; \ C=0.279$). This finding is in tandem with those of (Ochako et al., 2011; Worku et al., 2013) who reported that maternal education has a significant bearing on use of SBA.

Table 4.11 further indicates that half (50.0%) of women whose spouses had secondary and higher level of education had skilled attendance services at birth, while more women (65.6%) whose spouses had no formal education had no access to skilled services at delivery. Spousal education level acts as an enabling factor for utilization of SBA. However, spousal education level was not significantly associated with Skilled Birth Attendance ($\chi^2=1.590; \text{df}=1; \ p=0.451; \ C=0.106$). The finding contradicts those of Daniels et al., (2013) when they reported that spousal educational level was significantly associated with assistance at delivery by a trained medical personnel.

Results in Table 4.11 also indicated that three fifths (60.0%) of women who earned more than 4,000 shillings had skilled attendance at birth, while more than three fifths (64.7%) of the women who earned less than 4,000 shillings did not have skilled attendance during the birth of their current child. Maternal income was not significantly associated with Skilled Birth Attendance ($\chi^2=3.113; \text{df}=1; \ p=0.078; \ C=0.233$). The study finding is inconsistent with that of Stenlund (2012) who contended that women belonging to the poor and poorest
wealth groups are more likely to receive unskilled assistance than their counterparts in the richest and richer wealth groups.

Results in Table 4.11 show that more than three fifths (63.2%) of women whose spouses earned less than 4,000 shillings did not receive skilled attendance at birth while (60.5%) of those whose spouses earned more than 4,000 shillings received skilled attendance at birth. These proportions are about the same. Hence, spousal income level is not significantly associated with Skilled Birth Attendance ($\chi^2=0.037; \text{df}=1; p=0.847; C=0.025$). Hence we conclude that spousal income level does not have a significant association with use of SBA.

4.3.4 Relationship between Socio-Demographic Characteristics and utilization of maternal health care services as measured by Trimester women sought ANC care

Table 4.12 shows that none of the Socio-Demographic characteristics had a significant association with trimester in which women sought ANC care. Age ($\chi^2=.001; \text{df}=1; p=.982; C=.002$) and marital status ($\chi^2=.224; \text{df}=1; p=.636; C=.042$) were not significantly associated with trimester the woman started ANC visits. These findings are inconsistent with those of (Daniels et al., 2013) who stated that age and marital status plays a significant role in use of ANC services within the first trimester. Religion was not significantly associated with trimester ($\chi^2=.941; \text{df}=2; p=.625; C=.086$). These findings are inconsistent with those of (Olayinka, Joel, & Bukola, 2012) who contended that there was a relationship between religion and trimester women started their ANC visits.
Table 4.12: Relationship between Socio-Demographic Characteristics and Trimester women sought ANC care

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>1\textsuperscript{st} Trimester</th>
<th>2\textsuperscript{nd} &amp; 3\textsuperscript{rd} Trimesters</th>
<th>$\chi^2$</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td>.001</td>
<td>1</td>
<td>.982</td>
<td>.002</td>
</tr>
<tr>
<td>Below 28 years</td>
<td>24.0</td>
<td>76.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>23.8</td>
<td>76.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td>.224</td>
<td>1</td>
<td>.636</td>
<td>.042</td>
</tr>
<tr>
<td>Married</td>
<td>24.6</td>
<td>75.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>18.2</td>
<td>81.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td>.941</td>
<td>2</td>
<td>.625</td>
<td>.086</td>
</tr>
<tr>
<td>Christianity</td>
<td>21.1</td>
<td>78.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>28.3</td>
<td>71.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td>.302</td>
<td>2</td>
<td>.860</td>
<td>.049</td>
</tr>
<tr>
<td>Nullipara</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>28.6</td>
<td>71.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multipara</td>
<td>22.4</td>
<td>77.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultipara</td>
<td>26.2</td>
<td>73.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education Level (%)</td>
<td></td>
<td></td>
<td>.803</td>
<td>2</td>
<td>.669</td>
<td>.080</td>
</tr>
<tr>
<td>No formal education</td>
<td>26.3</td>
<td>73.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>20.8</td>
<td>79.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>0.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td>.842</td>
<td>2</td>
<td>.656</td>
<td>.085</td>
</tr>
<tr>
<td>No formal education</td>
<td>31.0</td>
<td>69.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>24.2</td>
<td>75.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td>.899</td>
<td>1</td>
<td>.343</td>
<td>.136</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>22.6</td>
<td>77.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td>.089</td>
<td>1</td>
<td>.765</td>
<td>.042</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>17.6</td>
<td>82.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>21.2</td>
<td>78.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *:$p \leq 0.05$ **:$p \leq 0.01$

Additionally, Parity was not significantly associated with trimester women started their ANC visits ($\chi^2=0.302$; df=2; $p=0.860$; C=0.049). These findings are inconsistent with those of
(Daniels et al., 2013) who contended that parity has a bearing on trimester that women start receiving antenatal care.

Maternal education was not significantly associated with trimester ($\chi^2=.803; df=2; p=.669; C=.080$). The study findings are consistent with those of (Daniels et al., 2013) who stated that education level did not have a significant relationship with use of ANC during the first trimester. In addition, spousal education was not significantly associated with trimester ($\chi^2=.842; df=2; p=.656; C=.085$). The study findings are contrary to those of (Daniels et al., 2013) who contended that spousal education level was associated with trimester women start receiving antenatal care.

Maternal income ($\chi^2=.899; df=1; p=.343; C=.136$) and spousal income ($\chi^2=.089; df=1; p=.765; C=.042$) were not significantly associated with the trimester they started ANC visits.

### 4.3.5 Women’s Preference and Perception of ANC Services Offered at the Healthcare Facilities

Results from Table 4.13 indicate that, more than four fifths (80%) of women visiting a dispensary, a health centre or a sub-district hospital reported being happy with the facility space, neatness and adequacy of privacy that was provided. Of women visiting both categories of facilities, less than a tenth (6.4%) of them preferred being attended to by a male provider with more than two fifths (45.6%) of those visiting the dispensary preferring a female health care provider and those attending health centres and sub-district hospital accounting for less than two fifths (35.9%) preference of female health care provider. This
could possibly be explained by either cultural issues surrounding child birth in the community.

Table 4.13: Women’s preference and perception of ANC services offered in the health facilities

<table>
<thead>
<tr>
<th></th>
<th>Dispensary (n= 125)</th>
<th>Health Centre + Sub district hospital (n= 64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waiting time (minutes) Mean</strong></td>
<td>39.08</td>
<td>54.61</td>
<td>.010**</td>
</tr>
<tr>
<td><strong>Happy with waiting time (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Yes</td>
<td>99.2</td>
<td>85.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with facility space (%)</strong></td>
<td></td>
<td></td>
<td>.301</td>
</tr>
<tr>
<td>Yes</td>
<td>83.2</td>
<td>88.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.8</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with neatness (%)</strong></td>
<td></td>
<td></td>
<td>.327</td>
</tr>
<tr>
<td>Yes</td>
<td>93.6</td>
<td>89.1</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6.4</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td><strong>Adequate privacy (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Yes</td>
<td>92.0</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred gender of provider (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Male</td>
<td>6.4</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45.6</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>48.0</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred type of provider (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Doctor</td>
<td>53.6</td>
<td>53.1</td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>12.0</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td>20.8</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Traditional Birth Attendant</td>
<td>4.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>A combination</td>
<td>4.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>5.6</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td><strong>Would you come back to this facility (%)</strong></td>
<td></td>
<td></td>
<td>.129</td>
</tr>
<tr>
<td>Yes</td>
<td>91.2</td>
<td>93.8</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.6</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>7.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td><strong>Will you recommend this facility to others (%)</strong></td>
<td></td>
<td></td>
<td>.413</td>
</tr>
<tr>
<td>Yes</td>
<td>96.8</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.4</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: p values*: p ≤ 0.05  **: p ≤ 0.01
Table 4.13 further presents women’s preferences and perceptions of ANC services that are offered at the dispensaries, health centres and sub-district hospital in Ganze District. More than 90% of women attending dispensaries or either health centre or sub-district hospital reported that they would return to the same health facility or would recommend it to others. The mean waiting time in the health centre and sub-district hospital per visit was significantly higher (54.61 minutes) than that in the dispensaries (39.08 minutes). Contrary to expectations, more (99.2%) women were happy with the waiting time at the dispensaries compared to health centres and sub-district hospitals (85.9%), with the latter being higher in the health care delivery system hierarchy in the country.

Results in Table 4.13 show that more than two fifths (48.0%) of women at the dispensaries had no preference on the preferred gender of provider with slightly more than three fifths (60.9%) at the health centres and sub-district hospitals having no preference for gender of health provider. This could be attributed to the fact that both are trained professionals as supported by field interviews and observations. Findings show that half (50%) of women visiting both set of facilities preferred being attended to by a doctor with only 1.6% of those visiting health centres and sub-district hospitals preferring TBA’s as opposed to 4% of those visiting the dispensary. There is a significant relationship between category of facility and waiting time (p=0.010) and the preferred type of provider (p=0.001).

4.3.6 Proportion of women who felt reassured about common pregnancy related concerns by health care providers

Study findings on reassurance patterns that women received from their providers about common pregnancy related issues are avidly presented in Table 4.14. Overall, among the
women who attended either a health facility or sub-district hospital, slightly more than four fifths (83%) felt reassured about the position of the baby and that of their own health. However, 87.8% of women who visited dispensaries did not receive information about the size of their unborn baby with more than three fifths (62.7%) receiving information about foetal abnormality. More than three fifths (68.3%) of our total sample who visited the dispensary had received information about the position of the baby, over three fifths (62.6%) on foetal abnormality and over four fifths (82.9%) on mothers own health and those who visited either a health centre or a sub-district hospital had received information about the position of the baby (83.9%), size of the baby (58.1%), foetal abnormality (67.7%) and mothers own health (87.1%) and felt reassured except that only (12.2%) of those who visited dispensaries received information on the size of their babies.

Significantly, those women visiting either a health centre or a sub-district hospital feel much more reassured about the four highlighted pregnancy related complications than those visiting the dispensaries. Women visiting a health centre or a sub-district hospital were significantly associated with receiving information about the position of the baby (p=0.23) and the size of the baby (p=0.001). These findings corroborate those of a study carried out in Gambia by Jallow et al., (2012) which observed that category or type of health facility had a bearing on receiving information about position and size of the unborn baby with women attending private health facilities likely to receive such information than those attending public health facilities.
Table 4.14: Proportion of women who were reassured about common pregnancy related concerns by their service providers

<table>
<thead>
<tr>
<th>Position of the baby (%)</th>
<th>Women who felt reassured</th>
<th>$\chi^2$</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dispensary (n= 125)</td>
<td>Health Centre + Sub district hospital (n= 64)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>68.3</td>
<td>83.9</td>
<td>5.138</td>
<td>1</td>
<td>.023*</td>
</tr>
<tr>
<td>No</td>
<td>31.7</td>
<td>16.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the baby (%)</td>
<td></td>
<td></td>
<td>43.435</td>
<td>1</td>
<td>.001**</td>
</tr>
<tr>
<td>Yes</td>
<td>12.2</td>
<td>58.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>87.8</td>
<td>41.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foetal abnormality (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>62.6</td>
<td>67.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>37.4</td>
<td>32.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s own health (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>82.9</td>
<td>87.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>17.1</td>
<td>12.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05  **: p ≤ 0.01

However, no significant relationship exists between receiving information on foetal abnormality (p=0.491) and mothers own health (p=0.461) and the category of health facility one visits. This finding is inconsistent with that of Jallow et al., (2012) who contended that category of facility had a significant association with receiving information about foetal abnormality and the health of the mother during the pregnancy term. Thus, findings in Table 4.14 clearly show that women of reproductive age (18-49) in Ganze District would prefer to visit either a health centre or a sub-district hospital owing to reassurance they get concerning complications to their unborn children and that of their own health.
4.4: Logistic Regression Analyses

Binomial logistic regression was undertaken because it examines the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). Binomial logistic regression was undertaken for the three dependent variables: Place of Delivery, Number of ANC visits to the clinic before birth of current child and Skilled Birth Attendance which is without doubt the single most critical intervention in reducing maternal mortalities and morbidities (Mpembeni et al., 2007).

In this part of the analysis, only five socio-demographic variables were included in the model: age, marital status, religion, education and parity. The rationale behind this is that preliminary analysis showed that only these five socio-demographic variables were significant either at the bivariate and multivariate level of analysis.

4.4.1 Binary Logistic Regression on Socio-Demographic Characteristics and Institutional Delivery Service Utilization

In Table 4.15 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization of Institutional Delivery services. Results from Table 4.15 indicate that except for mother’s age and level of education, all the selected socio-demographic characteristics are significant predictors of utilization of institutional delivery services in Ganze district.
Table 4.15: Binary Logistic Regression results with odds ratios and 95% confidence interval for Institutional Delivery service utilization

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
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<tr>
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<tr>
<td>Married</td>
<td></td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
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<tr>
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<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
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<td>-0.397</td>
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<td>0.672</td>
<td>(0.302-1.495)</td>
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<td><strong>Parity</strong></td>
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<tr>
<td>Primiparae®</td>
<td>29</td>
<td>1.915</td>
<td>0.549</td>
<td>12.301</td>
<td>2</td>
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<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td>(1.618-21.668)</td>
<td>0.007**</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>1.915</td>
<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Missing Cases =36 © - Reference category; Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

From Table 4.15, it is evident that Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, $p=0.001$) likely to have institutional delivery service utilization than Primiparae women. Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, $p=0.007$) likely to have institutional delivery service utilization than Primiparae women. Institutional delivery service utilization was also more common among women belonging either to Islam, ATR and those women who professed no religion (AOR 3.091,
95% CI, 1.447-6.602, p=0.004). The probability was much less for women who were unmarried (AOR 0.170, 95% CI 0.039-0.749, p= 0.019).

4.4.2 Regression on Socio-Demographic Characteristics and Number of ANC Visits

In Table 4.16 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the number of ANC visits made to the clinic.

Table 4.16: Binary Logistic Regression results with odds ratios and 95% confidence interval for Number of ANC visits

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
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</tr>
<tr>
<td>Below 28 years</td>
<td>189</td>
<td>1.766</td>
<td>0.844</td>
<td>4.384</td>
<td>1</td>
<td>5.849</td>
<td>(1.120-30.553)</td>
<td>0.036*</td>
</tr>
<tr>
<td>28 years and above</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Married</td>
<td>189</td>
<td>-1.320</td>
<td>0.573</td>
<td>5.297</td>
<td>1</td>
<td>0.267</td>
<td>(0.087-0.822)</td>
<td>0.021*</td>
</tr>
<tr>
<td>Other statuses</td>
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<td><strong>Religious Affiliation</strong></td>
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</tr>
<tr>
<td>Christian</td>
<td>189</td>
<td>0.080</td>
<td>0.362</td>
<td>0.048</td>
<td>1</td>
<td>1.083</td>
<td>(0.533-2.199)</td>
<td>0.826</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Respondents Education status</strong></td>
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</tr>
<tr>
<td>No formal education</td>
<td>189</td>
<td>-0.153</td>
<td>0.407</td>
<td>0.141</td>
<td>1</td>
<td>0.859</td>
<td>(0.387-1.906)</td>
<td>0.708</td>
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<tr>
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</tr>
<tr>
<td><strong>Parity</strong></td>
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</tr>
<tr>
<td>Nulliparae®</td>
<td>36</td>
<td>1.872</td>
<td>.577</td>
<td>10.515</td>
<td>1</td>
<td>6.499</td>
<td>(2.097-20.145)</td>
<td>0.003**</td>
</tr>
<tr>
<td>Primiparae</td>
<td>29</td>
<td>1.508</td>
<td>0.481</td>
<td>9.841</td>
<td>1</td>
<td>4.516</td>
<td>(1.761-11.585)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
<td>0.031*</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
<td></td>
</tr>
</tbody>
</table>

® - Reference category;  Note: p values *:p≤ 0.05 **: p≤ 0.01
Results from Table 4.16 indicate that mother’s age, marital status and parity are significant predictors of the number of ANC visits women will make before delivery in Ganze district.

From Table 4.16, it is evident that women aged above 28 years (AOR 5.849, 95% CI 1.120-30.553, p=0.036) and those who were single, separated, divorced and widowed (AOR 0.267, 95% CI 0.087-0.822, p=0.021) were more likely to make four or more antenatal visits to the clinic before delivery of their latest child. Further, parity was found to have a significant impact on the number of ANC visits with Primiparae women being six times (AOR 6.499, 95% CI 2.097-20.145, p=0.001) more likely to make four or more ANC visits than Nulliparae women; Multiparae women being five times (AOR 4.516, 95% CI 1.761-11.585, p=0.002) likely to make four or more visits than Nulliparae women and lastly Grandmultiparae women being four times (AOR 3.722, 95% CI 1.129-12.273, p=0.031) likely to make four or more visits to the ANC clinic than Nulliparae women.

**4.4.3 Binary Logistic Regression on Socio-Demographic Characteristics and Skilled Assistance during Delivery**

In Table 4.17 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization skilled attendance during delivery. Results from Table 4.17 indicate that apart from mother’s age educational status, all other selected socio-demographic characteristics are significant predictors of utilization of skilled assistance during delivery in Ganze district.
Table 4.17: Binary Logistic Regression results with odds ratios and 95% confidence interval for Skilled Assistance during Delivery

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
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<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
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<tr>
<td>28 years and above</td>
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</tr>
<tr>
<td>Married</td>
<td>153</td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Other statuses</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Christian</td>
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<tr>
<td>Other religions &amp; No Religion</td>
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</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td>0.330</td>
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<td>Primiparae®</td>
<td>29</td>
<td>12.301</td>
<td>2</td>
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<td></td>
<td>(2.315-19.897)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>12.180</td>
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<td></td>
<td>(1.618-21.668)</td>
<td>0.001**</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>7.220</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.007**</td>
</tr>
</tbody>
</table>

Missing cases=36 * - Reference category; Note:p values *:*p≤0.05 **: p≤0.01

Table 4.17 depicts that Muslim women, those who believed in ATR and who professed no religion were three times (AOR 3.091, 95% CI 1.447-6.602, p=0.004) more likely to use the assistance of a Skilled Birth Attendant than Christian women. Further, women who were unmarried were (AOR 0.170, 95% CI 0.039-0.749, p=0.019) less likely to use the assistance of a Skilled Birth Attendant. Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) more likely to use a Skilled Birth Attendant than
Primiparae women and Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) more likely to use a Skilled Birth Attendant during birth than Primiparae women.

4.4.4 Binary Logistic Regression on Socio-Demographic Characteristics and Trimester women started attending ANC clinic

In Table 4.18 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the trimester that women started making ANC visits to the clinic. Results from Table 4.18 indicate that all selected socio-demographic characteristics are not significant predictors of the timing that women start making ANC visits to the clinic in Ganze district.

Table 4.18: Binary Logistic Regression results with odds ratios and 95% confidence interval for Trimester women started attending ANC clinic

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B) CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
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<td><strong>Age at most recent birth</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>28</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038 (0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>28 years and above</td>
<td>97</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>28</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038 (0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Other statuses</td>
<td>97</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td><strong>Religious Affiliation</strong></td>
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<td></td>
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</tr>
<tr>
<td>Christian</td>
<td>28</td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789 (0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td>97</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td><strong>Respondents Education status</strong></td>
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<tr>
<td>No formal education</td>
<td>28</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038 (0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Some formal</td>
<td>97</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
</tbody>
</table>

Table 4.18: Binary Logistic Regression results with odds ratios and 95% confidence interval for Trimester women started attending ANC clinic

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B) CI (95%)</th>
<th>p value</th>
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<td><strong>Age at most recent birth</strong></td>
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<tr>
<td>Below 28 years</td>
<td>28</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038 (0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>28 years and above</td>
<td>97</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
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<tr>
<td>Married</td>
<td>28</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038 (0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Other statuses</td>
<td>97</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td><strong>Religious Affiliation</strong></td>
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<tr>
<td>Christian</td>
<td>28</td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789 (0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td>97</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td><strong>Respondents Education status</strong></td>
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<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>28</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038 (0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Some formal</td>
<td>97</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
</tbody>
</table>
Results in Table 4.18 show that there exists no significant relationship between the socio-demographic characteristics of the respondents and the trimester that they first started attending ANC clinic. However, women aged above 28 years (AOR 1.038, 95% CI 0.306-3.515, p=0.952) and those who were unmarried (AOR 1.474, 95% CI 0.296-7.344, p=0.636) were one time more likely to make their first visit to the ANC clinic during the first trimester of their pregnancy. Multiparae women (AOR 1.708, 95% CI 0.284-10.295, p=0.559) were two times more likely to make their first ANC visit during the first trimester than Primiparae women with Grandmultiparae women (AOR 1.438, 95% CI 0.207-9.997, p=0.714) being one more time likely to make their first ANC visit during the first trimester than Primiparae women.
CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary
This section presents a summary of the comparison of results of the relationship between the socio-demographic characteristics of the study respondents and variables used to measure the utilization of MHCS at both the Bivariate and Multivariate Logistic Regression Analyses to try and find out what determines utilization of maternal healthcare services in Ganze district. The findings of this study as shown in Table 5.1, Table 5.2, Table 5.3 and Table 5.4 confirm that the four indicators of utilization of maternal health care services are affected differently by the various socio-demographic characteristics in the entire Ganze district at the bivariate and multivariate levels of analyses. Further, the differences in the utilization of the different maternal health care services as espoused by the two levels of analyses will enable us to clearly focus on what should be done in an effort to improve utilization levels.

5.1.1 Comparison of results of relationship between socio-demographic characteristics and institutional service delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses
Table 5.1 shows the relationship of all the socio-demographic characteristics of the respondents with institutional delivery service utilization both at the Bivariate and Multivariate levels of analyses to find out what predicts institutional delivery service utilization.
Table 5.1: Comparison of results of relationship between Socio-Demographic characteristics and Institutional Service Delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>( p )</td>
</tr>
<tr>
<td>Age</td>
<td>1.539</td>
<td>0.463</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.043</td>
<td>0.056</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>21.384</td>
<td>0.001**</td>
</tr>
<tr>
<td>Respondents education</td>
<td>13.612</td>
<td>0.009**</td>
</tr>
<tr>
<td>Parity</td>
<td>18.216</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: p values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)

Findings in Table 5.1, interestingly show that while at the Bivariate level analysis, maternal education was significantly \( (p=0.009) \) related to institutional delivery services utilization, at the Multivariate level analysis it has no significant bearing on the utilization of the institutional delivery services \( (p=0.330) \). This is not to imply that education is not an important predictor of institutional delivery service utilization all since it exposes women to access and knowledge on maternal health issues. This finding could be attributed in the way the variable education was coded and it could also be explained by the fact that there has been massive campaigns by the GoK and MoH in sensitizing the population about the importance of utilization of maternal health care services to avert the dangers that are associated with pregnancy and child birth through other media such as the radio, television and even the chiefs ‘barazas’. Marital status of the mothers is insignificant \( (p=0.056) \) at the bivariate level analysis but proves to be significant \( (p=0.019) \) at the multivariate level analysis. Religion and Parity of the mothers were found to be both significant at the bivariate and multivariate levels of analyses.
5.1.2 Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.2 shows the relationship of all the socio-demographic characteristics of the respondents and number of ANC visits that women make to the health facilities both at the Bivariate and Multivariate levels of analyses to find out what predicts the number of ANC visits that mothers make to the health facility.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>( p )</td>
</tr>
<tr>
<td>Age</td>
<td>7.063</td>
<td>0.008**</td>
</tr>
<tr>
<td>Marital Status</td>
<td>7.747</td>
<td>0.005**</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>7.674</td>
<td>0.022*</td>
</tr>
<tr>
<td>Respondents’ education</td>
<td>4.237</td>
<td>0.120</td>
</tr>
<tr>
<td>Parity</td>
<td>24.609</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: \( p \) values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)

From Table 5.2, it is interesting to note that despite the fact we expected education to be a significant determinant of the number of ANC visits that mothers make to the clinic due to access and use of knowledge on maternal health issues acquired during formal education, maternal education is insignificant both at the Bivariate and Multivariate level analyses. Further, while religious affiliation is significant at the Bivariate level (\( p=0.022 \)), it is insignificant (\( p=0.826 \)) at the Multivariate level analysis after controlling for the effects of the other variables under study.

Age of the mothers, marital status and parity prove to be significant at the 95.0%
confidence interval both at the Bivariate and Multivariate level analyses as shown in Table 5.2. The study found out that mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the number of visits they make to the health facility at the Multivariate regression analysis level as indicated by these findings.

### 5.1.3 Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendants at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.3 shows the relationship of all the socio-demographic characteristics of the respondents and the use of Skilled Birth Attendants (SBA) both at the Bivariate and Multivariate levels of analyses to find out what predicts utilization of Skilled Birth Attendants.

*Table 5.3: Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendant at the Bivariate and Multivariate Logistic Regression Analyses*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>1.530</td>
<td>0.216</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.634</td>
<td><strong>0.018</strong></td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>13.463</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Respondents education</td>
<td>12.934</td>
<td><strong>0.002</strong></td>
</tr>
<tr>
<td>Parity</td>
<td>16.951</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01

From Table 5.3, apart from the age of the mothers; marital status, religious affiliation, maternal education, and parity all prove to be significant at the 95.0% confidence interval at the Bivariate level of analysis. However, while marital status, religious affiliation and parity still prove to be significant at the Multivariate level of analysis and thus strongly
predicting the utilization of Skilled Birth Attendants, but maternal education does not.

5.1.4 Comparison of results of relationship between Socio-Demographic characteristics and trimester mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.4 shows the relationship of all the socio-demographic characteristics of the respondents and the trimester that mothers started attending ANC clinic both at the Bivariate and Multivariate levels of analysis to find out what predicts utilization of maternal health care services.

Table 5. 4: Comparison of results of relationship between Socio-Demographic characteristics and trimester that mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>0.001</td>
<td>0.982</td>
</tr>
<tr>
<td>Marital Status</td>
<td>0.224</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>0.941</td>
<td>0.625</td>
</tr>
<tr>
<td>Respondents education</td>
<td>0.803</td>
<td>0.669</td>
</tr>
<tr>
<td>Parity</td>
<td>0.302</td>
<td>0.860</td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

From Table 5.4, it is evident that all the socio-demographic characteristics have no significant bearing on the trimester that women start attending antenatal clinic for their check-ups both at the Bivariate and Multivariate levels of analyses.

5.2 Conclusion
The findings of this study confirm that a woman’s marital status, religious affiliation and parity are strong predictors of institutional delivery service utilization. Further, mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the
number of visits that the mothers make to the health facility and lastly marital status, religious affiliation and parity strongly predict utilization of SBA’s. In addition, Parity proved to be a strong predictor of utilization of almost all the four maternal health care services apart from trimester that women started attending ANC clinic as it predicts their utilization both at the bivariate and multivariate level analysis at 95.5% confidence interval.

More women who are unmarried, those affiliated to non-Christian faiths, low parity women and those aged 28 years and above utilize maternal health care services more.

5.3 Recommendations

Evidence from this study enables making of suggestions and recommendations in three vital areas. First, the findings have some implications on the formulation of public health policies that will lower maternal morbidities and mortalities by improving utilization of MHCS. Second, it has practical implications on public health care practice and lastly it has implications for further research to uncover whatever has not been researched on in this study and others and thus update sociological knowledge on this important topic to help reduce maternal morbidities and mortality.

5.3.1 Recommendations for Policy

1. It is recommended from the findings of this study that stakeholders in maternal health care such as the National and County governments and the Civil Society Organizations make deliberate policies that will involve women aged 28 years and above as role models to sensitize other women on the importance of making the required number of ANC visits.
2. Policy provisions can also be developed by county governments and the civil society organizations to enhance women utilization of maternal health care services through an incentive and reward system to those women who make the required ANC visits and deliver in institutional care or under SBA supervision.

3. It is recommended that the national government come up with a policy that will ensure that maternal health care services are provided in most public health care facilities on a daily basis and not on specific days so that expectant women can access the services whenever they need them.

4. Further, deliberate policy should be formulated to encourage county governments to have ANC facilities at sub county levels. Alternatively, it can be a matter of policy, especially at the county government level that most health facilities should have at least a delivery room and trained personnel to provide an opportunity for expectant women to access professional ANC services and deliver under the care of professional staff. Such a policy will enhance women delivery under professional care reducing maternal morbidity and mortality and that of their new born babies.

5. It is recommended through the Ministry of Education, Science and Technology that the government strengthen affirmative action as a matter of policy to ensure that girl child education is prioritised in order to improve educational standards of women. This is envisioned as a long term policy strategy that will provide them with avenues and opportunities of acquiring information about use and importance of utilizing maternal health care services.
6. It is recommended that public health policy on awareness on the importance of utilization of institutional delivery service be initiated with a clear focus on high parity women, women with low education levels and women who professed Islam and ATR. Such a policy strategy can be a panacea for ensuring enhanced utilization of institutional delivery to this segment of the population especially in the study area.

5.3.2 Recommendations for Practice

1. With regards to the prevailing pattern of late and irregular antenatal clinic attendance, it is recommended that there be awareness creation by maternal health care stakeholders such as governments and NGOs on (ANC timing) when mothers should commence their ANC visits and the number of visits they should make until they give birth.

2. It is recommended that there be awareness creation by the National and County governments, NGOs and FBOs on the importance of using institutional delivery service or skilled midwifery assistance/skilled birth attendance at every child birth as it helps in reducing maternal and child deaths.

3. It is recommended to health and development workers that improving community awareness and perception on skilled providers and their care through community meetings by targeting women who prefer non skilled health care providers and those who lack awareness on the importance of utilization of maternal health care
services to themselves and their unborn children will help in reducing maternal and child deaths.

4. It is recommended that a doctor be posted to serve in the district as most mothers said they would like to be attended to by a trained medical doctor and only Clinical Officers and nurses were found at their work stations during the study period.

5. It is recommended that at least one ambulance should be supplied to the district and it be stationed at a central facility where it can easily coordinate in case maternal emergencies occur.

6. It is recommended that efforts be made by the health providers to ensure patients privacy during ANC and delivery care is kept to improve institutional delivery thus enhancing utilization of a major maternal health care service thus reducing maternal mortality.

5.3.3 Recommendations for Further Research

1. Given the high maternal morbidity and mortality not only in the study area but in Kenya and the region, it is prudent for researchers to understand the why with regard to the persistency of the problem and the how best can governments and the civil society mitigate the problem.

2. It is recommended that further research be carried out to establish why is it that women who profess Islam make the required (four and more) number of ANC visits but rarely have Institutional delivery service utilization.
3. More research is also needed to bring out the rural urban differential in not only maternal health care utilization but the differential factors with significance influence on ANC visits and institutional delivery.

4. Further research is also prudent to focus on other determinants of maternal health care utilization not considered in this study. Understanding the multiplicity of factors with an influence on maternal health care utilization is key in the development of interventions that will work in reducing maternal morbidity and mortality including that of their infants.
REFERENCES


Appendix 1: Consent Form

CONSENT FORM

PART 1: INFORMATION SHEET

I am Stanley Wechuli Wanjala a postgraduate student at Pwani University registration number C50/PUC/2098/11 and E-mail address: (stanleywanjala@gmail.com) supervised by Professor Halimu Suleiman Shauri- E-mail address hshauri@yahoo.com. I am carrying out a research titled “Determinants of Maternal Health care Utilization in Ganze District, Kilifi County of Kenya.” I am going to give you information about all what the research entails and invite you to be part of this research as a respondent. If you have any questions later, you can ask.

Purpose of research

Maternal and child health are key health issues in the world. The reason I am doing this research is to find out the factors that affect utilization of maternal health care services and to establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care utilization in Ganze district. By so doing, I will be able to advice the government and other health stakeholders on best practices in maternal health and help in policy formulation.

The reason why I am inviting you to be a respondent is because I am inviting all women between the ages of 18-49 years to participate in this research. Your participation in this research is entirely voluntary- It is your choice whether to participate or not.

The information that you give during this research will be kept confidential. Information about you that will be collected during the research will be put away and no one but the researcher (I) will be able to see it. Any information on you will have a number on it instead of your name for confidentiality purposes. You can ask any questions regarding the study or your participation in this study.

PART 2: CERTIFICATE OF CONSENT

I have read the foregoing information or it has been read to me. I have had the opportunity to ask questions about it and any questions that have been asked have been answered to my satisfaction.

I consent voluntarily to participate as a respondent in this research.

Name of participant: ___________________________________________________________

Signature of participant: _______________________________________________________

Date: ________________________________
Appendix 2: Interview Schedule

DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN GANZE DISTRICT, KILIFI COUNTY OF KENYA

INTERVIEW SCHEDULE

Dear respondent,
Please answer the questions to the best of your understanding. Your cooperation in this study is highly appreciated and all the information you provide will be treated with utmost confidentiality. Thank you for your cooperation.

Name of Health Facility: __________________________
Category of Facility: [ ] Dispensary [ ] Health Centre [ ] Sub-District Hospital [ ] District Hospital
Ownership: [ ] Government [ ] Private for Profit [ ] Faith Based [ ] NGO/CBO
Division: _________________________________________
Location: _________________________________________
Sub-Location: _____________________________________

PART I: SOCIO - DEMOGRAPHIC CHARACTERISTICS

Q1. Could you please tell me your age?
   a) 18-22 years [ ]
   b) 23-27 years [ ]
   c) 28-32 years [ ]
   d) 33-37 years [ ]
   e) 38-42 years [ ]
   f) 43-47 years [ ]
   g) 48-52 years [ ]

Q2. What is your marital status?
   a) Single [ ]
   b) Married [ ]
   c) Divorced [ ]
   d) Widowed [ ]
   e) Separated [ ]
   f) Other (State) ________________________________

Q3. What is your religious affiliation?
   a) Christian (Catholic) [ ]
   b) Christian (Protestant) [ ]
   c) Christian (SDA) [ ]
   d) Jewish [ ]
   e) Muslim [ ]
   f) Hindu [ ]
African Traditional Religion

Q4. What is your level of education?
   a) Non Formal Education
   b) Some primary education
   c) Primary school Completed
   d) Some Secondary education
   e) Secondary school completed
   f) University (Bachelors)
   g) Other (State) ____________________________

Q5. If married, or in a stable relationship, could you kindly state your spouse’s level of education?
   a) Non Formal Education
   b) Some primary education
   c) Primary school Completed
   d) Some Secondary education
   e) Secondary school completed
   f) University (Bachelors)
   g) Other (State) ____________________________

Q6 (a) If have some level of education, have you undergone any formal professional training since completion/dropping out of school?
   a) Yes
   b) No

(b) If Yes State which one(s)
   ____________________________
   ____________________________
   ____________________________

Q7. What is your main source of income?
   a) Farming
   b) Government employee
   c) Employment private sector
   d) Employment NGO/CBO
   e) Employment FBO
   f) Small business person
   g) Casual Employee
   h) No source of income at the moment
   i) Other (State) ____________________________

Q8. What would you consider as the main source of income for your spouse/partner?
   a) Farming
   b) Government employee

---

1 Traditional Religion include nominal Christian religions such as Akorino, Legio Maria, Roho Msalabwa, Dini ya Msambwa etc
c) Employment private sector [ ]
d) Employment NGO/CBO [ ]
e) Employment FBO [ ]
f) Small business person [ ]
g) Casual Employee [ ]
h) No source of income at the moment [ ]
i) Other (State) ___________________________________________

Q9. What is your average monthly earning from all your sources of income?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8000 to 10,000 [ ]
   f) 10,000 to 12,000 [ ]
   g) 12001 to 14000 [ ]
   h) 14001 to 16000 [ ]
   i) 16000 to 18000 [ ]
   j) 18001 to 20000 [ ]
   k) KShs. 20001 or more (State amount) ___________________________________________

Q10. What is the approximate average monthly earnings of your spouse or partner from all the sources?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8000 to 10,000 [ ]
   f) 10,000 to 12,000 [ ]
   g) 12001 to 14000 [ ]
   h) 14001 to 16000 [ ]
   i) 16000 to 18000 [ ]
   j) 18001 to 20000 [ ]
   k) KShs. 20001 or more (State amount) ___________________________________________

Q11. (a) How many children do you have in total? (Indicate number by Gender)
   Males: ___________ Females: ___________ Total: ___________
   (b) Could you kindly indicate their age beginning from the eldest to this one?
<table>
<thead>
<tr>
<th>Child number</th>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q 12. Who makes the decision for you to seek maternal health care?
   - Self [ ]
   - Husband [ ]
   - Husband and me [ ]
   - If other explain______________________________

SECTION B: KNOWLEDGE OF ANC

Q1. How did you first know about ANC?
   - Through friends [ ]
   - School [ ]
   - Hospital [ ]
   - Others [ ]

Q2. Are you aware of the services rendered at ANC Clinic?
   - Yes [ ]
   - No [ ]

Q3. ANC helps detect complications during pregnancy
   - Yes [ ]
   - No [ ]

Q4. ANC helps reduce maternal mortality and morbidity
   - Yes [ ]
   - No [ ]

SECTION C: ACCESS TO REPRODUCTIVE HEALTHCARE

Q1. Have you ever delivered any of your children in the hospital?
   - Yes [ ]
   - No [ ]
Q2. Kindly indicate the place of birth of your children beginning from the first born to the last born. (1=Hospital with the help of a trained health professional; 2=Home with the help of Traditional Birth Attendant; 3= At home alone or with the help of a relative; 4=At the Traditional Birth Attendants special clinic/home; 5 = On the way to hospital with the help of a stranger/relative; 6=Other (State))

<table>
<thead>
<tr>
<th>Child number</th>
<th>Place of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
</tbody>
</table>

Q3. (a) Reflecting back on your first pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

(c) How many visits did you make to the ante natal clinic before the delivery of your first born child?

(d) How many visits did you make to the post natal clinic after the delivery of your first born child?

Q4. (a) Reflecting back on your last pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

________________________________________________________________________
________________________________________________________________________
(c) How many visits did you make to the ante natal clinic before your latest delivery?

___________________________________________________

(c) How many visits did you make to the post natal clinic after your latest delivery?

___________________________________________________

Q5. How far is the nearest clinic offering maternal health services? (How long does it take for an adult to walk to the facility?) NB: one Kilometre may require 15 minutes of walk.

___________________________________________________

Q6. In your view, is the distance to the facility a concern? (Explain your answer)

Yes [ ]
No [ ]

Reason:

___________________________________________________

Q7. In your view, is the attitude of the health care providers a concern? (Explain your answer)

Yes [ ]
No [ ]

Reason:

___________________________________________________

Q8. In your view, does your religion influence how you seek ANC services? (Explain your answer)

Yes [ ]
No [ ]

Reason:

___________________________________________________

Q9. When visiting the nearest health facility during your pregnancy clinic appointments, what was the predominant means of transport used? (Probe for cost and duration in minutes to facility)

<table>
<thead>
<tr>
<th>Means</th>
<th>Tick one used</th>
<th>Cost (KShs.)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Motorcycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bicycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q10. In the facility you visited (for those who did not visit, the nearest healthcare facility), what maternal healthcare services does that facility offer?  *(Kindly indicate whether those attending received the services)*

<table>
<thead>
<tr>
<th>Service</th>
<th>Availability</th>
<th>Received service in last pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasound services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
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<tr>
<td>Health talk</td>
<td></td>
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<tr>
<td>Provision of PMTCT</td>
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<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
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<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11. During your last visit to the maternal health care facility, did you receive information on the following services?

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foetal abnormality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your health status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q12.(i) are you aware of family planning methods?
   a) Yes [ ]
b) No [ ]

(ii) Have you ever used any family planning method?
   a) Yes [ ]
   b) No [ ]

   (iii) If YES which method have you used? (Probe whether he is currently using the method)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Ever Used</th>
<th>Currently Using</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pills (Postinor 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IUD (intrauterine device)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Norplant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Condoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sexual Abstinence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Tubal ligation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Calendar/safe days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13. (i) Have you ever stopped using any of the family planning methods at any one time?
   Yes [ ]
   No [ ]

(ii) If you have ever stopped, kindly provide reason for your decision

________________________________________________________________________
________________________________________________________________________

Q14 Are you aware of any taboos related to child birth in your community?
   Yes [ ]
   No [ ]

If yes, list them

________________________________________________________________________
________________________________________________________________________

b) Do you believe in these taboos?
   Yes [ ]
   No [ ]

If yes, which taboos do you believe in?

________________________________________________________________________
________________________________________________________________________
Perceptions: Maternal and Child health practices

Q1. When visiting the nearest health facility during your pregnancy clinic appointments, how many minutes did you wait before the healthcare provider attended to you?

___________________________________________________ ______________________

Q2. Are you happy with the time you spent with the health care provider during your appointments?
   Yes [ ]
   No [ ]

   a) If yes, why?

   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________

   b) If No, would you prefer to have?
      A lot more time [ ]
      A little more time [ ]
      Time is about right [ ]

   b) Are you happy with the facility space?
      Yes [ ]
      No [ ]

      Explain_____________________________________________________
      __________________________________________________________
      __________________________________________________________

   c) Are you happy with the facility neatness?
      Yes [ ]
      No [ ]

      Explain_____________________________________________________
      __________________________________________________________
      __________________________________________________________

   d) Who is your preferred gender of provider?
      Male [ ]
      Female [ ]
      No preference [ ]

      Explain_____________________________________________________
      __________________________________________________________
      __________________________________________________________

   e) Who is your preferred type of provider?
      Doctor [ ]
      Nurse [ ]
Midwife [ ]
Traditional Birth Attendant [ ]
A combination [ ]
No preference [ ]

Explain______________________________________________________________


f) Would you come back to this facility?
   Yes [ ]
   No [ ]
Don’t know [ ]
Give reasons for your answer


__g) Will you recommend this facility to others?
   Yes [ ]
   No [ ]
Don’t know [ ]
Give reasons for your answer


Q3. Are you happy with the privacy that you were accorded during the consultation with
the health care provider?
   Yes [ ]
   No [ ]

Q4. How would you rate the following services that you received at the health facility?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of food served</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reception upon arrival at the health facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude of medical personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of equipments/facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q5. In your opinion, how would you rate the following ante-natal care services of the
health care facility you visited during your first visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of food served</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Reception upon arrival at the health facility</td>
<td></td>
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</tr>
<tr>
<td>Attitude of medical personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of equipments/facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>Very good</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very poor</td>
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<tr>
<td>-------------------------------</td>
<td>-----------</td>
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<td>------</td>
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</tr>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
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<tr>
<td>Iron supplementation</td>
<td></td>
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<tr>
<td>Urine test</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
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<tr>
<td>Provision of PMTCT</td>
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<td>Normal Delivery Services</td>
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<td></td>
<td></td>
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<tr>
<td>C-Section Deliveries</td>
<td></td>
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<tr>
<td>Registration of births</td>
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<tr>
<td>Immunization of newborn</td>
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</tr>
<tr>
<td>Provision of treated bed nets</td>
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</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Q6. If you were given another option (healthcare facility) in your first visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain______________________________________________________________

Q7. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your last visit?
Normal Delivery Services
C-Section Deliveries
Registration of births
Immunization of newborn
Provision of treated bed nets
Counselling on family planning options

Q8. If you were given another option (healthcare facility) in your last visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain_________________________________________________ ______________________

Q9. Any additional comments
_________________________________________________ ______________________
_________________________________________________ ______________________
_________________________________________________ ______________________

Thank you for your cooperation.
Appendix 3: Certificate of Ethical Approval

NACOSTI ACCREDITED

PU-ERC/MA/003/201

ETHICS REVIEW COMMITTEE
ACCREDITED BY THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY
AND INNOVATION (NACOSTI, KENYA)

CERTIFICATE OF
ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:
Mr. Stanley Wechuli Wanjala

REFERENCE NO:
ERC/MA/003/2014

ENTITLED:
Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya

TO BE UNDERTAKEN AT:
Ganze, Kilifi, Kenya

FOR THE PROPOSED PERIOD OF RESEARCH

HAS BEEN APPROVED BY THE ETHICS REVIEW COMMITTEE

AT ITS SITTING HELD AT PWANI UNIVERSITY, KENYA

ON THE 15TH DAY OF JANUARY 2014

CHAIRMAN
SECRETARY
LAY MEMBER

[Signatures]

PWANI UNIVERSITY
Chairman
15 JAN 2014

Ethics Review Committee,
PWANI University, www.puc.ac.ke, email: puthuman@pwaniuni.ac.ke, tel: 0719 152218.
The ERC, Giving Integrity to Research for Sustainable Development
Appendix 4: Graduate School Research Authorization

Pwani UNIVERSITY
SCHOOL OF GRADUATE STUDIES
P.O. Box 195 - 80100
KILEL, KENYA

Ref: PU/SGS/PRAL/83/vol.1

16th January, 2014

Mr. Stanley W. Wanjala
School of Humanities and Social Sciences
PWANI UNIVERSITY

SUBJECT: RESEARCH AUTHORIZATION

Following approval of your Masters research proposal by the Ethics Review Committee on 15th January, 2014, we hereby write to formally grant authorization for you to conduct research for a Master’s thesis entitled “Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya.”

You are advised to collect your original Certificate of Ethical Approval from the Ethics Review Committee office.

We wish you all the best as you embark on this critical stage of your Masters programme.

Yours faithfully,

Prof. Mlewa C. Mvatele
DEAN, SCHOOL OF GRADUATE STUDIES,

Cc
- Deputy Vice Chancellor (ASA)
- Dean, School of Humanities and Social Sciences
- Chairman, Social Sciences
Appendix 5: Research Authorization from Department of Health

COUNTY GOVERNMENT OF KILIFI
DEPARTMENT OF HEALTH
KILIFI COUNTY HOSPITAL

Telephone (041) 7522777
Fax: (041) 7522025
Email: kdh@komri-welcome.org
When Replying/Telephoning quote
Ref No.: ST.1/38/VOL.1/

OFFICE OF THE MEDICAL
SUPERINTENDENT
KILIFI COUNTY HOSPITAL
P. O. Box 9 - 80108
KILIFI
DATE: 31st March, 2014

Stanley Wechuli Wanjala
Pwani University
PO Box 195-80108
Kilifi County,
KENYA

Dear Mr Stanley W. Wanjala,

RE: AUTHORIZATION TO CARRY OUT STUDY IN GANZE

The research committee of health Kilifi has received your request to carry out a study on “Determinants of Maternal Care Service Utilization in Ganze District, Kilifi County of Kenya”.

After going through the proposal, we grant you approval to proceed with your research. This should not exceed a time period of 90 days. Please note you can always ask for an extension, should you need it.

Upon completion of the study, you will be required to share your results with the County Health Management Team.

Good luck!

Dr Barbara Mambo, Chairperson
Kilifi County Research Coordination Committee
KILIFI

Cc: The Executive Secretary of Health- KILIFI COUNTY

The Director of Health Services- KILIFI COUNTY
Appendix 6: Map of Ganze District
DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN
GANZE DISTRICT, KILIFI COUNTY OF KENYA

STANLEY WECHULI WANJALA

C50/PUC/2098/11

A thesis submitted in partial fulfilment of the requirements for the Degree of Master
of Arts of Pwani University

© August, 2015
DECLARATION

Declaration by the Student

This thesis is my original work and has not been presented for a degree in any other University or any other award

Signature.........................................             Date...........................................

Stanley Wechuli Wanjala
C50/PUC/2098/2011

Declaration by the Supervisors

We confirm that the work reported in this thesis was carried out by the candidate under our supervision. No part of this Thesis may be reproduced without the prior written permission of the author and/or Pwani University

Signature.........................................             Date...........................................

Prof. Halimu Suleiman Shauri; PhD
Sociologist; Department of Social Sciences
(Pwani University)

Signature.........................................             Date...........................................

Dr. Francis Wokabi; PhD
Philosopher; Department of Philosophy and Religious Studies
(Pwani University)
DEDICATION

This thesis is dedicated to the pillars of my life: God, my adoring parents who remain my source of inspiration, my siblings and fiancée.
ACKNOWLEDGEMENT

First, my heartfelt gratitude to my supervisors: Prof. Dr. Halimu Suleiman Shauri and Dr. Francis Gikonyo Wokabi. Thank you for your sage advice, guidance, encouragement and intellectual input from the initial to the final stage of this thesis development that enabled me to have an in-depth understanding of the subject under study. To my parents, thanks for the never ending love and unwavering support. My fiancée Yvonne Kuhnke, thanks for your unconditional love, encouragement and understanding even on days that you could not get my full attention. My colleague Bonventure Obeka, your constructive and insightful criticism, collaboration and willingness to assist when called upon have been tremendous assets. My colleagues and lecturers in the Department of Social Sciences, study respondents and medical staff from health facilities in Ganze District, thank you for making the study possible.
ABSTRACT

Maternal health care service utilization is an important health issue related to both maternal and child survival as it reduces maternal mortality and morbidity as well as improving the well being of mothers and their children before, during and after birth. Considering low utilization of maternal health care service especially in Sub-Saharan Africa, understanding what determines utilization becomes important. This study set out to examine determinants of maternal health care service utilization by women of reproductive ages (18-49 years) with a view to enhancing the achievement of Millennium Development Goal (MDG) number five (5). Four dependent variables: place of delivery, antenatal care, skilled attendance at birth and trimester women attended Antenatal Clinic (ANC) as well as six independent variables representing predisposing characteristics (mothers age at birth, marital status, religion, educational attainment, parity) and enabling factors (husbands educational attainment, income levels) were selected. Survey research design was used in data collection and the main data collection tool was an interview schedule. Multi-stage cluster sampling was used in sampling the health care facilities and convenient sampling was used to sample the respondents. Both descriptive and inferential statistics such as logistic regression analysis were applied to the analysis of the collected data. The key findings of the study show that religion, parity and maternal education were significant predictors of women’s place of delivery. Further, maternal age, marital status, and parity were found to be significantly associated with the number of ANC visits women make to the clinic. Marital status, religion and parity are all related to use of a skilled Birth Attendant at birth. Parity emerged to be the strongest predictor among all the other indicators of maternal health care service utilization considered in the study. In conclusion, the study was able to find out factors that affect utilization of maternal health care services in Ganze district thus achieving the study objective. Strategies to promote the utilization of Maternal Health Care Services should thus focus on the relevant predictors established in the models based on the binomial regression analyses. The findings of the study may help the Ministry of Health, policy makers and health related agencies and stakeholders to design appropriate and cost-effective intervention programmes targeting areas with most needs. This may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality while enhancing reproductive health and resource efficiency. Lastly, this study aims at stimulating further research in this area, thus bridging knowledge gaps and updating scientific knowledge on this important topic.
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List of Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

ATR – African Traditional Religion

ANC – Antenatal Care

CBS – Central Bureau of Statistics

ERC – Ethical Review Committee

FBO – Faith Based Organization

GDP – Gross Domestic Product

GoK- Government of Kenya

HBM - Health Belief Model

HIV – Human Immunodeficiency Virus

KDHS – Kenya Demographic and Health Survey

KHHEUS – Kenya Household Expenditure and Utilization Survey

KNBS – Kenya National Bureau of Statistics

KNHA- Kenya National Health Accounts

MDG’s – Millennium Development Goals

MHCS – Maternal Healthcare Services

MLR – Multivariate Logistic Regression
MoH – Ministry of Health

NACOSTI – National Commission for Science, Technology and Innovation

NCAPD- National Coordinating Agency for Population and Development

NGO – Non-Governmental Organization

OBA- Output Based Approach

PHC- Primary Health Care

PNC – Postnatal Care

POD – Place of Delivery

SBA – Skilled Birth Attendant

SDC – Social Demographic Characteristics

SMI – Safe Motherhood Initiative

SPSS – Statistical Package for Social Sciences

TBA – Traditional Birth Attendant

TI- Transparency International

UN – United Nations

UNFPA – United Nations Fund for Population Activities

UNICEF – United Nations International Children’s Emergency Fund
WB – World Bank

WHO – World Health Organization
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Three out of the eight Millennium Development Goals (MDG’s) relate to health. Goal number four is aimed at reducing child mortality rates, goal number six focuses on combating HIV/AIDS, malaria and other diseases and goal number five, which is the focus of this study, is aimed at improving maternal health by reducing maternal mortality by three quarters (75%) and achieving universal access to reproductive health between 1990 and 2015. This goal is monitored by two indices namely: maternal mortality ratio and proportion of births attended by skilled health personnel.

Globally, in the year 2008, there were an estimated 358,000 maternal deaths and of this, the developing world accounted for (355,000) or 99% (WHO, UNICEF, UNFPA, & The World Bank, 2010). These figures have financial implications for the health sector of affected countries. On the one hand, high income countries with high standards of living spend an average of 7.0% of Gross Domestic Product (GDP) on health and on the other hand, low income countries, with low standards of living, spend an average of only 4.2% on the health sector (Cieza & Holm, 2010). Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit, Dolea, & Braichet, 2010).

In the year 2000, 251,000 maternal deaths occurred in Africa and 40% of the deliveries were attended by a Skilled Birth Attendant (World Health Organization, 2005). Sub-
Saharan Africa accounted for slightly more than half (270,000) of the maternal deaths in 2005. An increase in maternal deaths over the years can be observed. Nearly three fifths (204,000) of the maternal deaths in 2008 occurred in the sub-Saharan Africa (WHO et al., 2010). Though there is a slight drop in maternal mortality rates from 2005-2008, the number is still high.

Kenya is one of the countries that suffered 65% of maternal deaths in 2008. It accounted for 7,900 (2.2%) of the global maternal deaths (WHO et al., 2010). According to the 2008-09 Kenya Demographic and Health Survey (KDHS) maternal mortality in Kenya remains high at 7.9% as only 44% of births are managed by health professionals and 43% are delivered in health facilities. These statistics clearly show that over half (56%) of deliveries are done by non-professionals and more than half (57%) of deliveries are done outside healthcare facilities. Between the periods 2003 – 2008/09, there was a rise in maternal mortality rates in Kenya from 0.6% to 0.8%, indicating an increase of 0.2% (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). This is not a good indication especially that MDG number five aims at improving maternal health care.

According to an official in the Ministry of Public Health, (Masha Joseph, 2011), quoted in the Standard Newspaper of Wednesday 11th May 2011, only 44% of deliveries in the Coastal Region are done in hospitals with many pregnant women relying on Traditional Birth Attendants (TBAs), while about 70% of 170,000 women still give birth at home. The Kilifi District Strategic Plan 2005-2010 points out that accessibility of health services was low and over half (57%) of the population lived over five kilometres to the nearest health facility (National Coordinating Agency for Population and Development, 2005). It is
against this background that a study of the determinants of maternal health care utilization in Ganze district in Kilifi County, Coastal Region of Kenya was mooted.

1.2 Statement of the Problem

The MDG’s are fresh in our minds and we have approached 2015. Millennium Development Goal number five, in particular, was aimed at reducing maternal mortality rate by 75.0% between 1990 and 2015 and to achieve universal access to reproductive health. The fact that the KDHS 2008-2009 reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities is a clear indication that there is underutilization of maternal health care professionals and facilities in the country, especially in the rural areas. What determines maternal health utilization therefore needs to be understood to improve this situation with a view of achieving MDG number five. In fact, it is very clear throughout the literature reviewed that there is a dearth of recent data on the determinants of maternal health care utilization. This is despite the fact that maternal healthcare services utilization is essential for the enhancement of maternal and child health. Accordingly, little was known about the current magnitude of use and factors influencing the use of maternal healthcare services, especially in Ganze district where the study was conducted. This study therefore examined the factors that determined the utilization of maternal health care service in Ganze district in Kilifi County, Coastal Region of Kenya.

1.3 Purpose of the Study

The purpose of the study was to examine factors that influence maternal health care service utilization by women of reproductive ages (18-49 years) with a view of enhancing the
achievement of MDG number five (5).

1.4 Specific Objectives

On the basis of the study’s purpose, the objective of the study was to:

1. Find out the influence of socio-economic and demographic factors on utilization of maternal health care services.
2. Establish the facility-specific factors that influence the utilization of maternal health care services in Ganze district.
3. Establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care service utilization in Ganze district.

1.5 Research Questions

1. What is the influence of socio-economic and demographic factors on utilization of maternal health care services?
2. Why are some healthcare facilities utilized more than others by women of reproductive ages (18-49 years) seeking maternal health care services?
3. What is the influence of the preferences and perceptions of women of reproductive ages (18-49) with regard to ANC services offered at the healthcare facilities in Ganze district on maternal health care utilization?

1.6 Significance of the Study

The results of this study could be beneficial as it was envisaged to add to the existing body
of scientific knowledge on the factors that influence maternal health care service utilization and the challenges that women face as they seek maternal health care services. This may act as a springboard for further research in this area and thus bridge knowledge gaps and update scientific knowledge on this important topic.

To the government, Ministry of Health as well as other health providers, findings of this research may help them work towards policy and practical improvements in provision of maternal health care services thus reducing the number of maternal deaths consequently contributing to the attainment of MDG number 5.

Third, this research may help the government and other key health care stakeholders avoid wastage of resources because they will be able to know the determinants of maternal health care service utilization. Accordingly, appropriate and cost-effective intervention programmes can be designed and targeted to the areas with most needs. Significantly, this may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality and enhancement of reproductive health with desirable consequences on the health status of women and the population.

1.7 Scope and Limitations of the Study

1.7.1 Scope of the Study

The study was carried out in Ganze District of Kilifi County in the Coastal Region of Kenya.
1.7.2 Limitations of the Study

This was a survey research and as such attempted to understand study variables at one point in time. Accordingly, the study was limited in explaining causality and trends over time than a longitudinal or control group design on the determinants of maternal health care services utilization.

Due to ethical and legal considerations, the study only focused on women aged (18-49 years). Thus, the study was limited in that the views of women below the age of 18 years and above 49 years were not included in the study and thus research results cannot be generalized outside of the sampled population of women aged (18-49) years old.

The study was limited in that the researcher had to employ the services of an interpreter because some of the study respondents did not understand English and so interviews were conducted in either Kiswahili or Kigiryama.

1.8 Definition of Key Concepts used in the Study

**Antenatal care:** Care given to a pregnant woman from the time of conception to the onset of labour

**Distance:** The location of the health care facility in relation to the patient’s place of residence

**Grandmultiparae:** A woman who has given birth to five or more children

**Maternal Morbidity:** Is defined as “chronic and persistent ill-health occurring as a consequence of complications of pregnancy and child birth” (Ogunjuyigbe & Liasu, n.d.)
**Maternal Mortality or Maternal Death:** Is “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes” (“WHO | Maternal mortality ratio (per 100 000 live births),” n.d.)

**Multiparae:** A woman who has given birth to two or more children

**Nulliparae:** A woman who has never given birth to a child

**Parity:** Birth order in a nuclear family

**Postnatal care:** Care provided following childbirth to both the mother and the infant

**Primiparae:** A woman who has given birth to only one child

**Providers:** Health staff at the selected Maternal and Child Health (MCH) facilities serving in ANC at the time of the study and those who were available for interview

**Skilled Birth Attendant:** Is “an accredited health professional- such as a mid-wife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborns)” (World Health Organization, 2004b).

**Skilled Birth Attendance:** Process by which a pregnant woman and her baby are provided with adequate care during pregnancy, labour, birth and postpartum and immediate newborn periods (Graham et al., 2001).
**Trimester:** “One of the three divisions of three months each during pregnancy, in which different phases of foetal development take place” ("Trimester definition - MedicineNet - Health and Medical Information Produced by Doctors,” n.d.)

**Utilization of maternal health care services:** Utilization of maternal health care services in this study was described in relation to the requirements by World Health Organization (1994; 2004) which only considers it medically satisfactory when:

- Women receive antenatal care during the first trimester of their pregnancy period
- Women undertake 4 or more antenatal visits before delivery of their children
- Women are attended to at delivery by trained medical personnel/practitioner
- Women deliver in a health facility

**Waiting time:** The duration of time (minutes) a mother has to wait before he/she is attended to by a medical professional
CHAPTER TWO: LITERATURE REVIEW

2.1 Utilization of Health Care Services

Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems, or achieving a positive body image (Cockerham, 2012). In this discourse, health care utilization refers to the use of health care services by people (Awoyemi, Obayelu, & Opaluwa, 2011). Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries (Mekonnen & Mekonnen, 2002). Thus, in order for an individual to utilize health services, they must have both physical access to a health facility and the health facility must also be able to provide the required services; the patient must also be able to pay for the health care services offered either through cash or by use of health insurance or any third party means (Shauri, 2010).

The 2005/2006 Kenya National Health Accounts (KNHA) report notes that the top two “key challenges to achieving better health status in Kenya” are “inequitable access to health services” and “shortage of qualified health workers, especially those with appropriate skills” (Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009). Access to care has most often been considered as an expression of the time or monetary costs associated with obtaining medical care, such as waiting time to get an appointment or to see a doctor or medical practitioners once in their offices, and distance one has to cover (Aday & Andersen, 1977).
Some researchers place emphasis on the idea that access as a concept is best considered in the context of whether the people actually in need of health care receive it or not (Taylor et al., 1975). People should try to distinguish between access and availability. The latter is the presence of health care resources in a given locality/area. Even though information on the number of physicians in an area may be available, we may still not know the accessibility of such health care providers in terms of the patients ability to pay the fees they are charged, the lack of transportation or traffic congestion typical of the place, the barriers resulting from ethnic discrimination, or office hours that cannot accommodate the patient’s own needs or schedules (Aday & Andersen, 1977).

Utilization of health services is a complex behavioural phenomenon, related to the availability, quality and cost of services, social structure, health beliefs and characteristics of the users (Chakraborty, Ataharasul, Chowdhury, Bari, & Akhter, 2003; Ebuehi et al., 2006). More critical for this study, women’s utilization of maternal health care facilities is an important health issue with regard to the well being and survival of both the mother and the child during pregnancy, child birth and postpartum period and has implications on the maternal and child mortality rates in human society (Gazali et al., 2012; WHO, 2012).

In February 1987, three international organizations namely: United Nations Fund for Population Activities (UNFPA), the World Bank (WB), and World Health Organization (WHO) sponsored a global campaign in Nairobi in form of a conference to reduce maternal mortality. As a consequence, the Safe Motherhood Initiative (SMI) was adopted to reduce the high rate of women dying during pregnancy and childbirth. The event was
aimed at raising awareness about the numbers of women dying each year from complications of pregnancy and childbirth (Starrs, 2006).

The SMI recommended that all countries provide three types of maternity care services which are vital for all expectant women namely prenatal care, delivery care, and postnatal care (United Nations, 2000a). Prenatal care services include encouraging a woman with a normal pregnancy to make at least four visits to a skilled health attendant during her pregnancy (with more visits by women with pregnancy complications), and promoting information about maternal nutrition and iron supplements to reduce anaemia, underweight and under-nutrition among pregnant women and new mothers. To provide delivery care during childbirth, all member countries were recommended to promote deliveries in health facilities and to promote the attendance of skilled health personnel including a doctor and/or person(s) with midwifery skills who can diagnose and manage obstetrical complications as well as normal delivery (Pandey et al., 2011; Cohen, 1987).

More significantly to note in this thesis is that, while motherhood is often a positive and fulfilling experience, for many women it is associated with suffering, ill-health and sometimes even death (WHO, 2012). It is thus imperative that ways to mitigate factors responsible for low utilization of maternal services be developed. However, the development of effective strategies to curb maternal deaths hinges on the identification of factors responsible for low utilization of such services underscoring the need for the present research. Furthermore, even though such studies have been carried out in Kenya, no such study has been conducted so far in Ganze district.
2.2 Status of Health Care Utilization in the World

Although utilization is an important indicator of health seeking behaviour, health status, cost and quality of services, it is not necessarily guaranteed by the availability of health care facilities (Wamai, 2009). A report carried out by the World Health Organization (2010) in 39 countries reveals that in more than half of the 27 out of the 39 countries, utilization of health care facilities was only at public facilities and was skewed towards outpatient services. More so, in the Dominican Republic, Brazil, Nepal and the Philippines between 50-60% of hospitalizations were in public health care facilities (Saskena, Xu, Elovainio, & Perrot, 2010).

Health conditions are different for urban and rural areas. Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit et al., 2010). Indeed, a study carried out in Ethiopia shows that the coverage of maternity care services is very low and that utilization of maternal health care services is lowest in rural areas (Mekonnen & Mekonnen, 2002).

According to the findings of a study carried out in rural Zimbabwe on socio-economic status and health care utilization, all forms of health care tended to be utilized by those of high or medium-high socio-economic status rated (65%) of the study subjects. This clearly indicates that the socio-economic status of an individual affects his/her health care utilization behaviour. The report further shows that seventy-one (71%) percent of respondents utilizing health services were employed by the government, private sector (72%), the church (71%), Community Based Organizations (78%) and others (64%).
Health services tended to be utilized more by employed respondents. Only traditional health services were equally utilized by unemployed respondents accounting for 50% of the users (Kevany et al., 2012).

In Kenya, there is uneven distribution of health care facilities across the country’s eight regions. The central region has about double the number of facilities per population as compared to Nyanza and Western regions (Wamai, 2009). Health care utilization varies greatly across all the eight regions of the country. More precisely, North Eastern records the lowest health care utilization rate, with 63.4% of all those who reported being ill never seeking treatment in the health care facilities, which leaves only 36.6% seeking treatment whereas Nairobi region, which is the capital city of Kenya, having the highest rate (90.6%) of utilization.

According to the 2003 Kenya Household Expenditure and Utilization Survey (KHHEUS), of all those people reporting illness, 77.2% sought health care service thus leaving 22.8% not seeking health care service. It also shows an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people which translates to an annual utilization rate of 1.92 visits per person per year (Republic of Kenya, 2004).

It is important to mention that the urban population has a higher likelihood of visiting a health care facility (81.5%) when ill as compared to their rural counterparts (75.9%) despite the fact that the average cost for outpatient utilization in urban areas is twice that of rural areas (Republic of Kenya, 2004). Despite this scenario, people in the rural areas still don’t seek health care services very often. This indicates that cost still remains a barrier to utilization of health care facilities and services as health care costs (44%) and the long
distance to the health facility (18%) were cited as the main barriers to health care utilization by those who reported being ill (Republic of Kenya, 2004).

Females reportedly make 1.2 times as many outpatient visits per capita (2.1 visits per year) as did their male counterparts (1.7). Government facilities are utilized more for outpatient services accounting for 51% of the visits, private and mission facilities account for 27% and 8% of the visits respectively, while traditional healers account for a negligible proportion of services (1%). This disparity might be as a result of the distance one has to travel and the cost of seeking health care in the various facilities available (Republic of Kenya, 2004).

Some health facilities at the rural level lack essential resources and the basic assets available are either insufficient or dilapidated. Furthermore, most rural facilities do not even have wards to admit critically sick patients. Due to poor health infrastructure, patients walk for long distances to reach the available health care facilities. Despite the high demand from the community for health care services, most rural health facilities are still lagging behind in the delivery of services (Transparency International, 2011).

The lack of equipment and other core supplies has negative impacts on the performance of health facilities. Lack of adequate health facilities and poor infrastructure forces people to walk for long distances to seek health care services; leading to some patients resorting to alternative means of treatment. This has the potential of leading to underutilization of available health care facilities (Transparency International, 2011).
According to the Kilifi District Strategic Plan 2005-2010, there were 73 health facilities distributed throughout the district. The plan asserts that accessibility of health services was low and over one half (57%) of the population lived over five kilometres to the nearest health facility. The doctor - patient ratio was 1:100,000 population which is a manifestation of staff shortages in the area (The National Coordinating Agency for Population and Development, 2005).

Ganze district, like most rural areas in Kenya, has poor health service coverage and delivery (Transparency International, 2011). Most trained medical attendants including birth attendants prefer working in urban areas as opposed to rural areas and thus health facilities in rural areas are under-staffed (Epuu, 2010). This study was able to shed some light on the status of the health care system in Ganze District.

2.3 Global Trends in the Utilization of Maternal Health Care Services

Maternal and child health are both indicators to a society’s level of development as well as to the performance of the health care delivery system (Central Bureau of Statistics (CBS)[Kenya], Ministry of Health (MOH)[Kenya], & ORC Macro, 2004). A study carried out in Peru on the effects of education on utilization of maternal health care services shows that there is a strong positive relationship between education and the use of maternal health care services (Elo, 1992).

A woman’s autonomy or level of independence in decision making is important in explaining utilization of maternal and child health care services. Urban residence, and
husband’s education have all been found to have a positive relationship to antenatal care utilization (Woldemicael, 2007; Dairo & Owoyokun, 2010).

A cross sectional study in India by (T. R. Jat, Ng, & San Sebastian, 2011) on the factors affecting the use of maternal health services in Madhya Pradesh state found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services. Women in urban areas tended to use maternal health care services more than those living in the rural areas. The levels of skilled attendance at delivery and postnatal care decreased steadily with increased birth order (T. R. Jat et al., 2011). It was also found out that an increase in the education of the mother enhances the use of the three indicators of the use of maternal health services namely prenatal care, delivery care, and postnatal care. Finally, child parity seemed to affect the use of skilled attendance at delivery and postnatal care.

Another study by Mondal (2009) carried out in Bangladesh found out that the level of education (both of the wife and husband) increased the likelihood of seeking help from a qualified medical professional. Women who reside in urban areas had a higher odd of seeking medical assistance than those in rural areas (ibid). Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious taboos. Women from families with a high socio-economic status are more likely to receive treatment from a doctor or nurse.

From the above studies, we can be able to deduce that socio-economic status as indicated by, level of education (both of the wife and husband), place of residence and religion increase the probability that women of reproductive ages will utilize maternal health care
services. Interestingly though, no study has focused on whether the attitude of health care providers towards the patients affects maternal health care utilization. Additionally, no study has focused on the attitude of the health care practitioners towards their work and utilization of maternal healthcare services by pregnant women. It is within the confines of this study therefore to find out whether the attitude of health care providers towards their work and patients determines utilization of maternal health care services.

### 2.4 Maternal Health Care Utilization in Africa

A study carried out in Ethiopia on the utilization of maternal health care services found out that there was low coverage of maternity service in the country. The place of residence, woman’s education, marital status, religion, parity and number of children under five years were found to have an important influence on utilization of maternal health services by women of reproductive ages. There was high level of utilization of maternal health services among urban women compared with their rural counterparts (Mekonnen & Mekonnen, 2002).

Additionally, married women were observed to be more likely to use antenatal care than their unmarried counterparts. Religion was also found to be an important predictor of antenatal care utilization. Among urban women, utilization of antenatal care is higher for those with two or more children than for those with one child. On the other hand, utilization of delivery care services is lower for those with two or more children than those with one child (Mekonnen & Mekonnen, 2002).
In another study carried out in Ethiopia on factors influencing the use of maternal health care services, it was found out that education of women determines use of antenatal care in that utilization increased with education level. Religion also affects use of antenatal care in that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs. Marital status and religion also had an impact in determining the use of antenatal care (Mekonnen & Mekonnen, 2003; Mekonnen & Mekonnen 2002).

A qualitative study carried out in rural Gambia on access to emergency obstetric care found out that structural factors in maternal health care provision discourage women from seeking care. For instance, where pre-natal care was provided on specific days in each community during week days, it hinders other people from attending. There may exist difficulties in transportation, such as poor condition of the road, lack of readily available transport, inadequate means of transportation, poor provider attitude towards patients, fear of punishment by health care providers based on previous experiences or just gossip can lead to delays in the decision making process of visiting a health facility by patients (Cham et al., 2005).

A study carried out on the utilization of antenatal care services in a Nigerian teaching hospital found out that over two fifths (47%) of the women started attending antenatal clinic only in the third trimester of the pregnancy period despite the fact that antenatal care services in the state hospital that the study was carried out was offered free of charge (Peltzer & Ajegbomogun, 2005).
In another study conducted in Nigeria, the use of maternal health services was significantly related to the level of maternal education, maternal age and marital status. Higher use was positively related to knowledge of where the Primary Health Care (PHC) service was located. Respondents with more than 4 children underutilized available maternal health services and utilization of maternal health services by respondents was significantly related to satisfaction with quality of services received (Ebuehi et al., 2006). Women’s and husband’s education and place of residence have strong positive associations with health care utilization (Woldemicael, 2007).

In Africa, all the reviewed studies have focused on determinants of maternal health care utilization such as maternal education, religion, parity, marital status and residence. However, limited literature none has focused on whether distance from health care facility has an effect on the utilization of maternal health care services. Few studies have also been carried out to find out the effects of waiting time at the reception by the patients before being attended to and the utilization of the health facility. Thus, this underscores the need for the present study in trying to find out the influence of how far one resides from a health facility and utilization of the health facility and the effect of how long a mother waits before being attended to on the utilization of maternal health care. The study thus sought to know how socio-economic and demographic as well as facility specific factors influence utilization of Maternal Health Care Services (MHCS).

2.5 Utilization of Maternal Health Care Services in Kenya

The 2003 Kenya Demographic and Health Survey indicated that almost 90% of Kenyan women received antenatal care from a medical professional with 18% being attended to by
a doctor, 70% by a nurse or midwife while 10% received no antenatal care at all (Central Bureau of Statistics (CBS)[Kenya] et al., 2004).

In a study carried out in Kenya by Fotso et al., (2009), it was found out that women’s overall autonomy is insignificant in health seeking behaviour. Further, women with at least secondary education were more likely to deliver in a health facility in general or in an appropriate health facility compared to those with no education. The likelihood of delivering at a health facility in general and in the well equipped facilities in particular significantly decreases as parity increases.

Another study carried out using data from the 2003 KDHS found out that young women mostly used skilled professional assistance during delivery. Rural women were less likely to deliver with the assistance of either a Traditional Birth Attendant (TBA) or skilled professional. Women from rich households were more likely to deliver with a TBA or skilled professional. Educated women were more likely to deliver with assistance of skilled professionals as opposed to non-educated. Women with more than 2 children were less likely to deliver with the assistance of TBA or skilled professionals compared to those with 1 child (Ochako et al., 2011).

According to a study carried out in Nyanza region of Kenya, it was found out that the higher the parity, the greater the chances of a mother delivering at home. Conversely, health facility deliveries were greatest among births to lower parity women. A person’s level of education affects how a person utilizes the health facility. Rural residence is associated with higher likelihood of home deliveries where 63% of births occur at home. However, those residing in urban areas had a higher chance of health institution delivery.
with 78% births delivered in health care facilities. Lower economic status at home, medium and high economic status health institution, older mothers’ and young health institution also affects place of delivery with high chance of mothers delivering at home. In a nut shell, the study found out that the place of delivery is affected by parity, level of education, place or residence, economic status and age of the mother (Owino, n.d.).

From the reviewed literature, most studies globally, in Africa and Kenya have focused on the determinants of maternal health care utilization such as education, religion, parity and age but a limited number of studies have been carried out in Ganze district which is the study area. This therefore underscores the need for the present research which seeks to establish the determinants of maternal health care utilization in Ganze district in the Coastal Region of Kenya.

### 2.6 Summary of Research Literature on Maternal Health Care Utilization

In as much as most reviewed studies have focused on the determinants of maternal health care utilization and inform us of the effects of maternal education, religion, parity, marital status and place of residence on maternal health care service utilization, no such focus is evident in the literature on the rural district of Ganze. This underscores the need for the present research in trying to establish the factors associated with maternal health care utilization in Ganze.

Furthermore, all studies that have been reviewed in this work only concentrate on socio-demographic factors such as maternal education, religion, parity, marital status and place of residence on maternal health care service utilization but there is less focus on the effects of
the attitude of health care practitioners on the utilization of maternal health care services. Accordingly, the study attempted to find out the effects of the attitude of health care practitioners and utilization of maternal health care services. More so, limited attention was paid to whether the distance of a health care facility from a patient’s residence affects their utilization of maternal health care services. This study sought to fill this important gap in knowledge.

It is proper to note that limited focus was also given to the effect of waiting time before one was attended to by a medical practitioner in hospital and the utilization of maternal health care facility. The present study went a step further in trying to find out whether the amount of time one has to wait before being attended to by medical personnel has an impact on the utilization of maternal health care services.

At another level, some studies have dealt with challenges faced by expectant mothers as they seek maternal health care services but none enumerates the coping strategies these women use to respond to the challenges. For instance, a qualitative study carried out in rural Gambia found out that structural factors in maternal health care provision discourage women from seeking care (Cham et al., 2005). Despite these challenges that have been enumerated, we are not told what coping strategies these women use to address such challenges.

Finally, it is proper to also note that almost all the literature reviewed has focused on the socio-economic factors that affect maternal health care utilization overlooking facility specific factors, perceptions and preferences of women of child bearing ages that may also affect maternal health care utilization. The study sought to establish facility specific factors,
perceptions and preferences of women that affect maternal health care utilization with an aim of making recommendations to improve the state of maternal and child health in the study area.

2.7 Theoretical Framework

This study was understood and conducted within the framework of Symbolic Interactionism. Symbolic Interactionism is a micro level theoretical approach that focuses on social interactions in specific situations. It has roots in the thinking of Max Weber (1864-1920), a German Sociologist and George Herbert Mead who emphasized understanding a particular setting from the point of view of the people in it (Giddens & Sutton, 2009).

The core principles of social interaction theory include meaning, language and thought. Meaning arises in the process of interaction between people and are handled in and modified through an interpretive process used by the person in dealing with things he/she encounters. Language is the vehicle through which meanings that arise out of our thoughts are transported in social interactions.

This theory was helpful in trying to understand the meanings that people attach to certain symbols so that they seek maternal health care services. The interpretation that people derive from the symbols and maternal health care utilization enabled the researcher to come up with strategies to improve maternal health care utilization and thus reduce maternal and child mortality. In looking at the factors that influence maternal health care utilization, the
researcher adopted the Health Belief Model (HBM) embedded within the larger purview of Symbolic Interactionism perspective.

2.7.1 Symbolic Interactionism and Illness Behaviour

Illness is social and exploring the meanings that patients give to symptoms and illness becomes important. Patients are the first to recognise their illness and to decide to visit a medical practitioner, who then takes a medical history. Patients describe illness on what society teaches them and this affects the diagnosis (Laurence & Barbara G, 2007).

For this study, it was assumed that women of reproductive ages (18-49 years) must be able to draw meanings from the symptoms and attach meanings to those symptoms in order for them to be able to utilize the available maternal health care services. Borrowing from the symbolic interactionist perspective and because illness is social, the study tried to explain maternal health care utilization using the HBM.

2.7.2 The Health Belief Model

The model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions; these include susceptibility, seriousness, benefits and barriers to behaviour and cues to action (Glanz et al., 2008). The HBM suggests that preventive action taken by an individual to avoid a disease is due to the perception that they are susceptible and the occurrence of the disease would have some severe personal implications (Cockerham, 2012). Thus, women may only seek maternal health care services if they deem that the pregnancy they are carrying may have a likelihood of affecting them.
HBM makes an assumption that by taking a particular action, susceptibility (likelihood) would be reduced. However, the perception of the threat posed by disease is affected by modifying factors which are demographic, socio-psychological and structural variables that can influence both perception and the corresponding cues necessary to instigate action (Cockerham, 2012).

Action cues are required because while an individual may perceive that a given action will be effective in reducing the threat of disease, the action may not be taken if it is further defined as too expensive, too unpleasant or painful, too inconvenient, or perhaps too traumatic (Cockerham, 2012). The women may seek for health care because by so doing they feel that they have reduced the likelihood of them experiencing difficulties during the entire period of pregnancy.

The likelihood of action involves a weighing of the perceived benefits to action contrasted to the perceived barriers. Therefore it is believed that a stimulus in the form of an action cue is required to “trigger” the appropriate behaviour. Such a stimulus could either be internal (perception of bodily states) or external (interpersonal interaction, mass media communication, or personal knowledge of someone affected by the health problem) (Cockerham, 2012). Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.

The model assumes that if a person regards himself/herself susceptible to a condition, believes that the condition would have potentially serious consequences, believes that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believes the anticipated benefits of taking action
outweigh the barriers to (or costs of) action, one is likely to take action he or she believes will reduce their risks (Glanz et al., 2008).

Additionally, it is important to note that health seeking behaviour has been observed to be based upon the value of the perceived outcome (avoidance of personal vulnerability) and the expectation that preventive action would result in that outcome (Cockerham, 2012).

Finally, the theoretical framework informs this particular study on the basis of the five constructs that make up the HBM. Thus, women may only utilize maternal health care services if they feel that the pregnancy they are carrying may have a likelihood of affecting their wellbeing and that by so doing they feel that they will reduce the likelihood of them experiencing difficulties during the entire period of pregnancy. Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.
2.8 Conceptual Framework

A conceptual framework is a concise description of the phenomena under study accompanied by a graphic or visual depiction of the major variables of the study (Mugenda, 2008).

![Conceptual Framework Diagram]

*Figure 2.1: Conceptual Framework of the correlates of maternal Health Care utilization*
2.8.1 Behavioural Model of Health Services Utilization

The study utilized the behavioural model of health services utilization developed by Andersen and Newman (1973) to explain maternal health care utilization. It asserts that the utilization of health service is dependent on three sets of individual factors; predisposing factors, enabling resources and the illness levels of an individual (need for health service) (Andersen & Newman, 1973; Aday & Andersen, 1977; Andersen, 1995).

2.8.1.1 Predisposing factors

Predisposing factors reflect the fact that different people have a different likelihood/propensity to use health care services. They include demographic characteristics e.g. age and gender, the social structure which determines the social status of a person and his/her ability to cope with presenting problems in society. Social structure can be measured using indicators such as education, occupation, household size, number of previous pregnancies and health-related attitude. Health beliefs include attitudes, values and knowledge about the health and health services that might have an effect on the subsequent need and use of health services available (Andersen, 1995).

Looking at the study variables, the model helps in the analysis of the effects of the demographic variables which include; age, sex, marital status and parity on maternal health care utilization in the study area. This helps to understand why there are disparities in the utilization of maternal health care services. Socio-economic factors such as education level, income, occupation and family size help in knowing the social status of an individual and help in understanding how better the individual is equipped to deal with the health problem at hand. The cultural beliefs enable us to have a better understanding of the outlook towards
health and health services which might have an effect on the need and use for health care and health services among the study subjects.

2.8.1.2 Enabling Resources

Enabling resources deal with the means that make it necessary for individuals to utilize health care services even if they are predisposed to them e.g. income, access, and availability of health services. They may either be personal or community based and make health service resources available to individuals. Enabling conditions can be measured by indicators such as a person’s income, level of family insurance coverage or other source of third party payment for health care, whether or not the person has a regular source of health care, the nature of the regular source of care and the accessibility of the source of health care.

Community enabling characteristics include the amount of health facilities and personnel in a community. Thus, if resources are reasonably plentiful and can be used without queuing up they might be used more frequently. Analysing it from the economic viewpoint, one might expect people experiencing low prices for medical care to use more services. Other measures of community resources include region of the country and the rural urban nature of the community in which the family lives. These variables might be linked to utilization because of local norms concerning how medicine should be practiced or overriding community values which influence the behaviour of the individual living in the community (Andersen & Newman, 1973).
Focusing on service provider factors such as the availability of drugs, attitude of service providers, waiting time, availability of equipments and bed space all have an effect on how health care facilities will be used. All these service provider factors enable people utilize available health care facilities because if the services provided measure up to what the clients expect then they will utilize them. People’s occupation and income are also enabling factors for utilization of health care services because with a good income one is able to pay for the expenses incurred while seeking for care and one can also be able to buy health insurance policies which cover them whenever they fall ill and thus they can be able to seek for health care services. The quality of service offered and the effectiveness of the service provider also determine whether a patient will or will not utilize health care services. Where the services are effective patients will tend to utilize such services more.

2.8.1.3 Need

According to Andersen and Newman, the need factor is the most immediate cause of health service use (Andersen & Newman, 1973). An individual must perceive illness or the probability of it occurring for him/her to seek for health care. The levels of illness represent the most immediate cause for health service utilization. Perceived severity or number of episodes of diseases have a positive association with health care utilization. The model also makes the assumption of a clinical evaluation system because individuals seek care from formal medical systems.

Indicators of perceived illness includes the days that the individual is unable to function normally because the disease interferes with how he/she conducts his daily activities like going to work, going to school, playing with their peers or even taking the children to
school. Other measures of perceived illness include symptoms the individual experiences in a given time period and a self report of the general state of health, e.g. excellent, good, fair or poor. Evaluated illness measures are attempts to get at the actual illness problem that the individual is experiencing and the clinically judged severity of that illness. Under ideal circumstances included here would be a physical examination of the individual by a medical practitioner (R Andersen & Newman, 1973).

The need for utilization of health care services will be examined on the basis of how the disease interferes with the patients daily activities.
CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter provides details of the research methodology used during the study. It offers information on the study site, research design, sampling procedures, the target population, the data collection methods and tools, and finally analysis of data. Consideration is also given to logistical as well as ethical issues.

3.2 Site of the Study

This study was conducted in Ganze district which is one of the six districts in the larger Kilifi County. Ganze district lies on Latitude 3°32’0" North and Longitude 39°41’0" East. It borders Kaloleni district to the South and Bahari district to the East. Ganze district has three divisions namely Ganze, Bamba and Vitengeni; it has a total of 16 locations and 48 sub-locations.

According to the 2009 census report, Ganze district had an estimated total population of 117,074 people with the males accounting for 53,403 (45.6%) and females accounting for 63,671 (54.4%) of the total population. The district covers a total area of 2,779 Km². Ganze district is a semi arid area where horticultural crops are produced using drip irrigation system while food crops and livestock feeds are produced using water conservation structures (Ketiem et al., 2007).

3.3 Research Design

This is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The
researcher employed a cross-sectional survey research design in the collection of data for the proposed study because it can be used to collect data from many people at relatively low cost and relatively quickly. Survey research design is always used to collect information from the field at one point in time. A survey design entails data collection on more than one case and at a single point in time in order to collect both quantitative and qualitative information in connection with two or more variables which are often examined to detect patterns of association (Alan Bryman, 2012).

3.4 Target Population

The study focused on women of reproductive ages (18-49 years) in Ganze district which is made up of three divisions namely Ganze, Bamba and Vitengeni.

3.5 Study Population

The study population consisted of women (18-49 years) who had come for antenatal care and those bringing their babies born at last delivery to the primary health care centres for immunization and other maternal and child health related services.

3.6 Sample Size Determination and Sampling of Study Subjects

3.6.1 Sample Size Determination

According to Bailey (1982), 30 elements are considered by many as the minimum size of a sample. Other researchers opt for a minimum sample of 100 units while others opt for 200 (Chadwick et al., 1984). Thirty (30) respondents were picked from each of the six health care facilities providing maternal health care services in the study area.
3.6.2 Sampling Procedure

This study used triangulation of various sampling techniques with a view of ensuring a representative sample of study subjects was selected and studied. To ensure sample representation and to avoid biasness within the framework of triangulation, multi-stage sampling strategy was adopted.

In the first stage, purposive sampling technique was used to select Ganze district among the six districts that constitute Kilifi County. Ganze was selected because it is a rural area and only one sub-district hospital in the whole district, namely Bamba sub-district hospital. The nearest referral hospitals are in Kilifi and Malindi districts and women with complications have to be referred to either of the two facilities.

In stage two, the researcher considered to stratify Ganze district into three divisions namely Ganze, Bamba and Vitengeni. This was to ensure that there is sample representation from the whole district.

In the third stage, a list of all the health facilities that offer maternal health care services in the district was drawn. Two health care facilities that provide maternal health care services were selected using simple random sampling technique from each of the divisions making a total of six health care facilities.

Lastly, study subjects were selected using convenient sampling. The interviewer was at the health care facility and interviewed 30 subjects from each health care facility giving a total sample size of 180. There was oversampling of study respondents by 9 subjects giving a total sample size of 189.
3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion Criteria

- Subjects included in the study only comprised of women of reproductive ages (18-49 years).

- Only those women who: (i) brought their babies born at last delivery and (ii) those coming for delivery to the primary health care centres for ante natal care services and (iii) those coming for immunization services were eligible for the study.

- Only those respondents who gave an informed consent of participating in the study were interviewed after they had signed the consent form.

3.7.2 Exclusion Criteria

- Women seeking other health services other than maternal health care services from the primary health care centre were not interviewed.

- Women under the age of 18 years were not interviewed because of legal and ethical issues.

- Those women who did not consent to voluntarily participate in the study were not interviewed.

3.8 Data Collection Procedures and Tools

The study employed the use of the interview schedule as the primary tool of data collection because literacy levels in Ganze district were relatively low. Interviews were carried out on
a face to face basis with the respondents who did not know how to read and write and the responses generated from the interviewees were accurately recorded.

3.9 Data Analysis

The collected data from the field was edited, coded and classified into response categories; this was done with the help of the Statistical Package for Social Sciences (SPSS, version 20.0). Descriptive statistics were used to display the Socio-Demographic characteristics of study respondents and utilization of maternal health care services in Ganze District. Frequency tables were used to present the Socio-Demographic distribution of study respondents and pie charts and bar graphs were applied to aid in the visual appreciation of the Socio-Demographic characteristics.

The chi-square test was used to examine whether or not there exists a relationship between the categorical variables; and Binomial Logistic Regression was used to carry out inferential analysis on the determinants of maternal health care utilization due to their binary nature. Logistic regression was used to examine the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). In order to identify the factors that predict utilization of maternal health care services, Multivariate Logistic Regression (MLR) was therefore applied. All the independent variables that were identified as having an association at the bivariate level were included in the model and the significance level for all the statistical analysis was set at 95% (P≤.05) confidence level.
3.10 Ethical Considerations

Ethical clearance for the study was applied to and granted by the Ethical Review Committee (ERC), an agency of the National Commission for Science, Technology and Innovation (NACOSTI). Further, research clearance was also obtained from the Deputy County Commissioner Ganze Sub-County and the Kilifi County Research Coordination Committee to visit health care facilities in Ganze and conduct the study.

During the survey, the researcher explained the purpose of the study to the respondents. This was done to ensure that the respondents gave an informed consent for taking part in the study. Furthermore, this ensured cooperation from the respondents and it helped to avoid any suspicion on the part of the study subjects.

The researcher insisted on and adhered to voluntary participation of respondents in giving information relevant for the study to avoid any coercion in the data collection process. The researcher maintained confidentiality by ensuring that respondents’ information was used only for the purpose of the study and no names of respondents were displayed and that interview schedules were to be kept securely under lock and key.
CHAPTER FOUR: STUDY RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides results of data analysis from the 189 interviewed respondents in Ganze District guided by the research objectives as elucidated in Chapter One. The study over sampled by nine (9) respondents. From the study it is evident that more women were sampled from Bamba division (36.0%) than the other divisions in the district.

This analysis and discussion focuses on the following themes: socio-economic and demographic dimensions of the local community, facility specific factors and women’s preferences and perceptions of ANC services offered at the health care facilities in Ganze district with regard to their use of maternal health care services. The findings are presented in tabular format and figures that clearly show the variations in responses among study variables.

4.2 Socio-Demographic Dimension of Respondents

This section focuses on the different or diverse characteristics with a bearing on the utilization of maternal health services. For the purpose of this research, our key interest was to conduct an assessment of the following parameters towards utilization of maternal health care services; age of respondents, education levels, education levels of their spouses, marital status, income levels, parity and religion. These parameters were investigated and results are presented next.
4.2.1 Age of Respondents

Age of respondents is critical as a variable in this study as it sheds some light on not only the maturity of the study subjects but also ensuring that the selection of study participants remained ethical. Further, age was included because of the assumption that the older the respondents the more mature and experienced on maternal issues and decision making. Indeed, differential age among expectant mothers cannot be gainsaid when it comes to making important maternal decisions that may have value in enhancing maternal and child health. The distribution of respondents by age is aptly presented in Table 4.1.

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>70</td>
<td>37.0</td>
</tr>
<tr>
<td>23-27</td>
<td>55</td>
<td>29.1</td>
</tr>
<tr>
<td>28-32</td>
<td>42</td>
<td>22.2</td>
</tr>
<tr>
<td>33-37</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>38-42</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>48-52</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Findings in Table 4.1 indicate that out of the sampled (189), respondents over one third (37%) were between ages 18-22 years old. This clearly indicates that most women start giving birth at an early age. Of the sample, over one quarter (29%) were between the ages of 23-27 years and only 5% of the respondents were aged 38 years and above.

Early marriages and giving birth at early age exposes the women to high chances of not gaining higher education thus leading to over reliance on their spouses for all their needs consequently leading to financial dependence. Dependancy has implications for maternal
health care utilization probably because women will always have to ask for money whenever they want to visit the health facility during their clinic appointments. Subsequently, it may also lead to women not attending maternal health care clinic as expected especially if the clinics are in far off places because of lack of finances to pay for their bus fare. Consequently, this may result to low or poor maternal health care service utilization. Additionally, young single women may not attend maternal health care clinic because they may be trying to hide the pregnancy from their parents and relatives.

The low percentage (5%) of women aged 28 years and above attending antenatal clinic might probably be a result of them having gone through subsequent births and thus don’t find it necessary because they feel they have had more successful birth experiences without any complications. This might also be attributed to them having stopped giving birth. This finding corroborates those of Jat et al., (2011) who found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services compared to their older counterparts.

4.2.2 Marital Status

The Marital status of a person in this study was conceived to mean the civil state of an individual in relation to marriage laws of the country. This variable was deemed important in this study because it helps in determining how maternal and child health decisions are made in a largely patriarchal African society where it is assumed that all decisions in the homestead are to be made solely by male members of the family because they are the heads of their families. The distribution of respondents by their marital status is presented in Table 4.2.
Results in Table 4.2 depict that majority (90%) of the sampled respondents were married, only 7% were single, while 2% and 1% were widowed and separated respectively. Field observations showed that most of the respondents who were single were between ages 18-22 years old and either lived with their parents or relatives. The high (90%) number of respondents in marital union was expected because the study focused on women in their reproductive ages, many of whom were expected to be married due to societal expectations. Indeed, this finding corroborates those of Ebuehi et al (2006) and Mekonnen & Mekonnen (2002, 2003) who stated that marital status is related to utilization of maternal health services because married women were more likely to use antenatal care than their unmarried counterparts.

4.2.3 Religious Affiliation

Religion is herein conceived as a complete and acceptable system of set beliefs and practices that members of society adhere to. It is an institution that exercises social control among its members. Accordingly, affiliation to religious institution is one of the primary activities in society. Of importance in this study, is that religious affiliation may influence decisions on adoption of contraception, marriage, maternal and child health issues among
respondents. The distribution of respondents according to their religious affiliation is presented in Figure 4.1.

![Religious Affiliation](image)

**Figure 4.1: Distribution of respondents by Religious affiliation**

Figure 4.1 reveals that a half (50%) of the respondents were Christians, slightly over one tenth (12%) were Muslims, 1% subscribed to African Traditional Religions and slightly over one thirds (37%) reported that they were Atheists. This indicates that Ganze district is majorly a Christian community. Interestingly, 37% of the respondents don’t belong to any religion. This may be explained by the remote nature of the area which is compounded by lack of infrastructure and high levels of poverty. The poor state of infrastructure and poverty have probably delinked the community from accessing or being accessed by mainstream religious evangelists.

The higher (50%) number of respondents being Christians is a mirror of Kenya, which is predominantly Christian owing to aggressive penetration of Christian evangelists and size of the Christian faith which puts it at an advantage with regard to resources and numbers over other faiths in the country. The strength in resources and numbers might have enabled
Christian denominations to penetrate this remote area more than other faiths which had limited resources and small numbers of adherants. This finding may have an influence on maternal health care utilization in the study area in line with observations by (Mekonnen & Mekonnen, 2002, 2003; Mondal, 2009) have linked religion to the fact that it affects utilization of antenatal care. They demonstrated that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs and that Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious believes.

4.2.4 Education Level of Respondents

Education is one of the powerful drivers of social change in society in that those with higher levels of education seem to adopt new ideas and innovations faster than their counterparts with low levels of education. Thus, the education level of respondents is a critical variable in this study as it is indicative of a person’s level of understanding, access and uptake of information related to maternal and child health issues. Findings of the study on the level of education of respondents are presented in Table 4.3.

Table 4. 3: Percentage Distribution by respondents level of education

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non formal education</td>
<td>85</td>
<td>45.0</td>
</tr>
<tr>
<td>Some primary education</td>
<td>57</td>
<td>30.2</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>35</td>
<td>18.5</td>
</tr>
<tr>
<td>Some secondary education</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Secondary school completed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results in Table 4.3 indicate that out of the sampled (189) respondents, over two fifths (45.0%) had never gone to school, over one quarter (30.2%) had some primary education, with slightly less than a fifth (18.5%) reporting to have completed primary level of education. Those who reported to have either some secondary, completed secondary and others were only less than one tenth (6.3%).

From Table 4.3, it is apparent that the majority (93.7%) of the interviewed women of Ganze district were lowly educated. This finding may have an implication on the level of uptake of information on maternal and child health, adoption of maternal health care services and family planning. The levels of low education coupled with the culture and traditions of the community may compound the uptake of maternal health care services in an area. Further, the low levels of education in the area may have serious implications on other socio-economic opportunities such as securing lucrative employment and access to knowledge, especially on maternal health care services.

In fact, it has been shown that women of higher levels of education have a higher likelihood of fulfilling the requirements of the description of use of maternal health services as described by the WHO (1994; 2004). Such women have more capability to uptake new information on maternal health care practices than those with a low education background. Indeed, Elo (1992) reported that there is a strong positive relationship between education and the use of maternal health care services.
4.2.5 Education Level of Respondent’s Spouse

Owing to the aforementioned importance of the level of respondent education on the uptake of maternal health care services, it was prudent to investigate the combined effect of education on maternal health care utilization by including spousal education level in the matrix. More precisely, the education level of the respondent’s spouse was envisioned to be an important variable in this study because it may act as an enabling factor in the utilization of information concerning maternal and child health practices, access and uptake of such services. Findings on the education level of the respondent’s spouse are presented in Figure 4.2.

![Figure 4.2: Distribution of respondents spouse by level of education](image)

Figure 4.2 depicts that slightly over one fifth (20.5%) of the sampled respondents’ spouse had never gone to school, over half (56.5%) had either attained some form of or completed primary education, while over one quarter (28.8%) had either some form of or completed secondary school level of education and above. The level of education of the respondent’s
spouses indicates that there are educational differentials between male and female members of society in Ganze district. Level of education among the males is higher than that among the females. This finding is not a surprise to this study as it is a mirror of the situation in the country owing to the patriarchal nature of the society where boys have higher access to schooling opportunities than their female counterparts.

However, significant to mention is that spousal educational level may facilitate the utilization of maternal health care services because it enhances the capacity to access information that can be shared with the marital partner. Such sharing of useful information and knowledge, especially on maternal health may make the spouses see the importance of visiting maternal health care clinics for their ANC. Accordingly, such visits have the potential of bettering their health status and that of their unborn children. This finding is in tandem with those of Woldemicael (2007) and Dairo & Owoyokun (2010) when they reported that high maternal and husband’s education have a positive relationship to antenatal care utilization.

4.2.6 Respondents Source of Income

Respondents source of income in this study was conceived to mean the main livelihood strategy that respondents eke out a living by receiving money on a regular basis for work done at the end of every month. This variable was considered important as it helps to highlight the ability of respondents to pay for the cost of health care services offered. Findings on respondents’ source of income are presented in Table 4.4.
Table 4.4: Distribution of respondents by main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>Casual employee</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>107</td>
<td>59.4</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 9*

Table 4.4 depicts that almost three fifths (59.4%) of the respondents had no source of income clearly alluding to the fact that most of these women were financially dependent on their spouses. The high (59.4%) number of women having no source of income may probably be explained by the fact that women, as shown in Table 4.3, have very low levels of formal education. This means that their access to formal employment is low.

Indeed, the absence of prerequisites (education and skill training) to formal labour pushes women in Ganze out of formal means of livelihood where they can earn a regular income and attain financial independence that may enhance their access to maternal care. The foregoing may be explained by the patriarchal nature of the African society which favors boys over girls in education. In fact, women are seen as homemakers and as such have to stay at home and take care of their husbands and children whereas the husbands are expected to provide for the family.
4.2.7 Source of Income of Spouse

Respondents’ spouse’s source of income was considered as an important variable in this study as it acts as an enabling factor to utilization of maternal health care services. This is because the earned income can be used to cater for the necessary financial obligations that might be accrued in the process of seeking maternal health care services. Results on the respondents’ spouse’s source of income are presented in Table 4.5.

Table 4.5: Distribution of respondents by spousal main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>04</td>
<td>2.4</td>
</tr>
<tr>
<td>Government employee</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>18</td>
<td>11.0</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Casual employee</td>
<td>62</td>
<td>37.8</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>06</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>52</td>
<td>31.7</td>
</tr>
<tr>
<td>Not aware</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4.5 presents findings of respondents’ spouses’ source of income. Of the total respondents sampled (189), over one third (37.8%) of the respondents’ spouses were engaged in casual employment, meaning they do not earn a regular income. More than one quarter (31.7%) observed that their spouses have other sources of income other than the ones elucidated in the interview schedule. Simple observations during field work showed that most men in the area are engaged in charcoal burning. The high (37.8%) number of spouses being in casual employment means that there are times that they are out of a job and thus might not be able to always provide financially in case the wife wants to make an
ANC visit. This situation is compounded by observations made during field work that most women interviewees lived far away from the available maternal health care facilities. Accordingly, most of them reported walking as their main means of reaching the nearest health care facility. This finding confirms that of Simkhada et al., (2008) who posits that women’s employment affects antenatal care uptake.

4.2.8 Parity

Parity in this study was conceptualized to mean the birth order in a nuclear family. Parity was considered an important variable in this study because it aids in explaining the differentials in utilization rates of maternal health care services by the number of children one has. Findings of the study on parity are aptly presented in Figure 4.3.

Figure 4.3: Distribution of respondents by parity

Figure 4.3 indicates that slightly more than two fifths (43%) of the respondents were multiparous, more than one fifth (23%) were grandmultiparous, more than one tenth (15%) were primparous and slightly less than one fifth (19%) were nulliparous families.
Parity has an important influence on utilization of maternal health services by women of reproductive ages (Mekonnen & Mekonnen, 2002). The relationship between parity and utilization of maternal health care services in Ganze will be tested using Chi-square and regression analysis in the later sections of this thesis.

4.2.9 Decision to Seek Maternal Health Care

The variable on who makes the decision to seek maternal health care was conceived to be important for this study as it sheds some light on the decision making process between male and females in society. The level of autonomy in decision making among the women and its effects on utilization of certain services is also critical in the analysis of maternal health care services utilization. However, Given the patriarchal nature of Kenyan communities where men are considered the heads of the households and thus responsible for decision making and the fact that health care in the household is a role of the female gender, it was critical to include the variable to see the decision maker on matters of uptake of maternal health care services in Ganze.

Further, maternal health care does not only fall within the purview of gender roles where the women are expected to perform but it actually affects women only making its decision to uptake or not very critical for women despite the patriarchal nature of society. Data on who makes decision with regard to uptake of maternal health care services in Ganze will also help in understanding whether the autonomy of women in decision making affects their utilization of such services. Results of who makes decision to seek maternal health care services are presented in Figure 4.4.
Figure 4.4: Distribution of respondents by who makes decision to attend ANC clinic

Figure 4.4 depicts that slightly more than three fifths (61%) of the respondents, were found to make joint decisions on MCH, while only one quarter (25%) of women were observed make the decisions on their own. Less than one tenth (9%) of MCH decisions were observed to be made by the respondents spouse and (5%) of the times decisions are made by other people, either parents or relatives living with the respondent.

On one hand, the higher (61%) percentage citing joint decision making is a clear testimony of the growing gender empowerment and dynamic nature of society where women are gaining, albeit gradual, their social space as key players in decision making with regard to matters touching on their lives. This seems to happen regardless of the strong patriachal nature of the Kenyan society. On the other hand, the one quarter (25%) who said they make the decision themselves was expected in that health care and indeed, maternal health care decision making and uptake of its services are a preserve of women owing to the genderized roles in society, where health is classified as a domestic role to be undertaken by women. In fact, women’s autonomy in decision making has been reported by
Woldemicael (2007) as an important factor in explaining utilization of maternal and child health care services.

4.2.10 Hospital Deliveries

The number of hospital deliveries was considered to be a critical aspect in this study since it gives further insight into the utilization rates of institutional delivery services among the rural women of Ganze district. Findings with regard to this variable are presented in Figure 4.5.

![Hospital Deliveries](image_url)

*Figure 4. 5: Distribution of respondents by hospital deliveries*

Study findings presented in Figure 4.5 clearly indicate that of all (189) the respondents interviewed, only over two fifths (44%) had ever had hospital deliveries, while over half (56%) had never had any hospital deliveries. This finding corroborates those of the KDHS 2008-2009 which reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). Interestingly, this is happening regardless of the
understanding that increasing the proportions of delivery taking place in health facilities is important in reducing health risks to both the mother and her unborn child and consequently preventing both maternal and child mortality.

However, Ganze district being a rural area, 44% of the interviewed mothers having ever delivered in health facilities is quite high and somehow slightly contradicts the KDHS 2008-09 which indicate that only 35.4% of deliveries take place in health facilities in rural areas (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). The reason for the difference could be attributable to differences in the characteristics of the samples used in the two studies. Further, whereas the KDHS 2008-09 was a country wide study encompassing women from both urban and rural areas, this study focused only on Ganze which is a rural and poor district in Kilifi County.

4.2.11 Place of Delivery of Child at First Birth

The place of delivery of the first born child was considered an important variable in this study as it highlights the differentials in place of delivery due to the fear of child birth associated with prior birth experience of women in their second parity. This variable was included in the study because experiences of first birth may have a bearing on uptake or non-uptake of maternal health care services. Results of the place of delivery of child at first birth are presented in Table 4.6.
Table 4.6: Distribution of respondents by place of delivery of child born at first birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>53</td>
<td>34.9</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>81</td>
<td>53.3</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>02</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 37

Findings in Table 4.6 show that over half (53.3%) of the respondents had their first births at home (alone or with the help of a relative), while slightly more than one third (34.9%) had their first delivery in a health care facility with the help of a trained health professional. The over half (53.3%) of women of reproductive ages giving birth at home (alone or with the help of a relative) may probably be due to structural factors such as long distance to the hospital, poor road network and lack of transportation. This finding is consistent with that of Ochako et al (2011) and (Owino, n.d.) who reported that delivery with the aid of a TBA or skilled professional is less likely to happen among rural women. Accordingly, rural residence is largely associated with higher likelihood of home deliveries. The remote nature and poor infrastructural development in Ganze may aptly explain these disparities reported in the study.

### 4.2.12 Place of Delivery of Latest Child

Place of delivery of latest child was envisioned as an important variable in this study as it highlights the differentials in place of delivery between the first born child and subsequent deliveries. The assumption is that if the first child was born in a health care facility and the
experience was satisfactory to the mother, there are high chances that subsequent births would take place in health care facilities and vice versa. Results of the study with regard to this variable are presented in Table 4.7.

Table 4.7: Distribution of respondents by place of delivery of child born at latest birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>65</td>
<td>42.5</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>70</td>
<td>45.8</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>07</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Missing cases = 36*

Findings of the study in Table 4.7 depict that prior to the study, over two fifths (45.8%) of the women had delivered their latest child at home or with the help of a relative, while another over two fifths (42.5%) had been observed to have delivered in a hospital with the help of a trained health professional. In comparison with place of delivery of first birth as captured in Table 4.6, over half (53.3%) had their first births at home alone or with the help of a relative while slightly more than one third (34.9%) had their first delivery in a hospital with the help of a trained health professional.

The two sets of findings, Table 4.6 and Table 4.7, show interesting trends that, on one hand, there is a decline (from 53.3% to 45.8%) of women giving birth at home or with the help of a relative and, on the other hand, there is a subsequent increase (from 34.9% to 42.5%) of women who had their subsequent deliveries in a health care facility compared to their first birth. These findings are not a surprise to this study in that they show the gains
that are being made in enhancing deliveries in health care facilities and in the hands of professionals as envisioned by government policy and the MDGs, especially goal number five (5). In fact, the findings are inconsistent with those of Fotso et al (2009) and Mekonnen & Mekonnen (2002) who reported that health facility delivery decreases as parity increases. More specifically, they reported that those with two or more children have lower utilization of health care delivery care services, a fact refuted by the findings of this study.

4.2.13 Trimester Women Visited Health Facility During First Pregnancy

The concept trimester is used in this study to refer to divisions of three months during pregnancy that an expectant mother had started ANC visits. It is expected that women will start vising ANC services immediately they realise that they are expectant. The variable trimester in first pregnancy signify which month the interviewed women started ANC visits during their first pregnancy. This variable was considered important in this study as it sheds some light on how well women of child bearing ages utilize maternal health care services. The assumption being that they will start uptaking ANC services on the first month that they realise they are expectant. Findings of the study on trimester in first pregnancy are presented in Figure 4.6.
Figure 4.6 presents findings of the trimester that women started their antenatal visits during their first pregnancy. It is shown in Figure 4.7 that more than three fifths (65%) of the respondents had their first visit during the second trimester, one fifth (20%) had their first visit during the first trimester, less than one tenth (9%) had their first visit during the third trimester and only 6% never went for ANC visits during their first pregnancy. Findings are consistent with those of a study carried out in Ethiopia (Afework et al., 2014) which found out that majority (68.3%) of the women were observed to have started attending ANC during the second trimester.

This finding can further be explained by field observations where most women attributed having not had their first ANC visit due to the fact that they did not and still do not know when exactly they are supposed to make their first visit once they discover that they are expectant. The lack of knowledge on when to begin their ANC visits can probably be as a result of low levels of education among the women as captured in earlier findings of the study where only less than one fifth (6.3%) reported to have secondary education and
above. Lack of education denies these women opportunities to access information, including on health care and hence this impacts on uptake of health care services including maternal health care services.

4.2.14 Trimester Women Visited Health Facility During Latest Pregnancy

Trimester in this study was conceived, inter alia, to mean divisions of three months during pregnancy in which the respondents started using ANC services in their current pregnancy. This variable was considered important in this study first, because it sheds some light on how well women of child bearing ages utilize maternal health care services by focusing on the first month that they seek ANC services for their children at last birth. Second, it could provide comparative data with regard to which trimester, first or second, birth parity is associated with and third, whether there are dynamics in the process. Findings of the study on the trends for this variable are captured in Figure 4.7.

![Trimester latest pregnancy](image)

*Figure 4. 7: Distribution of respondents by trimester when one started ANC visits during latest pregnancy*
Figure 4.7 depicts that slightly less than one quarter (24%) had their first ANC visit for current pregnancy during the first trimester, more than three fifths (67%) had their first visit during the second trimester and less than one tenth (9%) had their first visit during the third trimester. The low (24%) percentage of women having their first visit during the first trimester might probably be attributed to lack of maternal health care education or structural factors such as long distances to the health facility and maternal health care services being offered at the health facility on certain days of the week only hence inconviniencing users.

Comparatively, women seeking ANC services during their first pregnancy, Figure 4.7 and women seeking ANC services during their latest pregnancy, Figure 4.8 show over three fifths 65% and 67% respectively appearing in the second trimester. Only a slight increase of 2% of women seeking ANC services in the second trimester of their current pregnancy can be observed. This can probably be attributed to the low levels of education and high poverty rates in the study area as adduced and implied in earlier findings of the study respectively. Low levels of education and high poverty rates makes it difficult for women to either realise they are pregnant in the first trimester because they are ignorant on ANC matters and may not be in a position to access or afford pregnancy testing kits respectively.

4.2.15 Distance to Health Care Facility

Distance to the health facility was considered as an important variable in this study as it provided an insight into the structural barriers that may exist in society in relation to utilization of maternal health care services. Considering the remote location and poverty rate (over 68%) in the county, especially in the study area, the inclusion of the variable was
both timely and significant for the study. Results of the study on this variable are presented in Figure 4.8.

Figure 4. 8: Distribution of respondents on their views whether distance to health facility is a concern

Findings in Figure 4.8 indicate that more than half (56.4%) of the studied women said that the distance to the health facility was a concern. Field observations show that they had to spend a lot of time on the way to and from hospital and this affected how they utilized maternal health care services. Thus, many stated that they only went to the hospital when they deemed it necessary. This study finding supports that of Cham et al (2005) who posits that delays in decision making process of visiting a health facility can be caused by structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport and inadequate means of transportation.

Figure 4.8 also shows that more than two fifths (43.6%) of the respondents observed that the distance to and from the health facility was not a hindrance to their utilization of maternal health care services. Findings from informal interviews with these women, health
professionals and community members reveal that most of these women were used to walking long distances. Indeed, they were so used to the long distances that whenever we asked some community members on our way to the health care facilities they would retort, "nihaha kare" (literary translated to mean it is just here). The "nihaha kare" could turn out to be kilometre(s) of walking as observed during field work. This can be interpreted to mean that they are used to the long distances such that their sense of distance or how far a place is may be blurred by their experiences and cultural perceptions of distance.

4.2.16 Means of Transport to Nearest Facility

Means of transport to the nearest health facility was considered an important variable of this study as it presented to us one of the challenges that the pregnant mothers may encounter as they seek maternal health care services in their respective health care facilities. The respondents were asked to report which was the most frequently used means of transport that they used to the nearest health facility during clinic visits for maternal health care services? Findings of the various means of transport utilized by the interviewed women are presented in Table 4.8.

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>141</td>
<td>76.2</td>
</tr>
<tr>
<td>Motorcycle boda boda</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td>Bicycle boda boda</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Own/family motorcycle</td>
<td>02</td>
<td>1.1</td>
</tr>
<tr>
<td>Own/family bicycle</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Public service vehicle</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 4*
Table 4.8 indicates that slightly more than three quarters (76.2%) of study respondents reported walking to the nearest health care facility while both motorcycle (boda boda) and public service vehicles accounted for (10.8%) respectively. The larger (76.2%) percentage of the respondents who were observed to be walking to the health care facility for ANC services despite the fact that they were expectant and whether or not they had complications was amazing in that the mean distance to the nearest health facility was observed to be 7.2 Kilometers, while the mean time taken walking to the health care facility was observed to be one hundred and eleven (111 minutes) minutes or approximately one hour and fifty one minutes (1H:51 M).

Notably, despite these long distances, women had probably no other option. The lack of alternative options was probably due to poverty and limited employment opportunities constraining their financial capabilities and thus a lack of means to pay for even public transportation or seek alternative health care facilities in the locality or in the neighbourhood. However, these findings are not a surprise to this study as they are consistent with those of Cham et al (2005) who reported that structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport, inadequate means of transportation can lead to delays in the decision making process of visiting a health care facility by patients.

4.2.17 Gender of Provider

The gender of the service provider was considered an important variable in this study because some cultures and religions only accept other women to be midwives and not men. This is regardless of the fact that it is until recently that the girl child has been given an
opportunity to go to school leading to differential education qualifications. Results on the gender of provider are presented in Figure 4.9.

Figure 4.9: Distribution of respondents by their preferred gender of provider

Results in Figure 4.9 clearly indicate that over half (53%) of the respondents had no particular preference for the gender of provider whilst over two fifths (42%) and less than one tenth (5%) said that they would want to be attended to by a female or male provider respectively.

The more than half (53%) of the respondents who said they had no particular preference for the gender of the provider may be explained first, by the recognition among respondents that providers are bound by a code of ethics and the fact that all staff undergo similar professional training and thus gender consideration does not compromise quality of care and competence among providers. Second, owing to the remote location of the district and the fact that there are limited choices of health care facilities, expectant women may not have opportunity to make choices of health care providers based on among other things gender and that they have to do with what is available.
As expected, Figure 4.9 shows that over two fifths (42%) of the respondents wanted to be attended to by female providers. Several factors can explain this. One respondent who preferred to be attended to by a female health care practitioner said that:

“*kuna mambo mengine huwezi mueleza mwanamume.....mwanamke ni bora haswa amabaye amezaa yuajua kila kitu hata si lazima umwelezee*”. (*Translated this means that there are some issues that you cannot open up to a man....women are better especially those who have given birth because they have experienced childbirth and so know everything so you don’t need to tell them everything*).

Another respondent who would like to be attended to by a female practitioner retorted that:

“*Muche dza mino*” (*Translated into english means that the female practitioner is a woman just like herself*).

Further, it is noted in Figure 4.9 that only 5% of the women would like to be attended to by a male health care provider. This is interesting and unexpected given the private and confidential nature of ANC procedures. This probably is because of the ethical confidence patients have of health care providers to handle private and confidential details regardless of gender differentials of their patients. More interestingly, two respondents among the 5% who said they would like to be attended to by a male health care provider retorted that:

“*mimi napenda sana huyo daktari awe mwanamume, hawa wa kike wana madharau sana.*” (*Translated into english means that she would like the midwife to be a male because the female ones are usually not so friendly*). To the contrary, another respondents observed
that “daktari wa kiume wanantia aibu” (Translated into english means that male practitioners make her shy).

4.2.18 Type of Provider

The type of provider was considered as a vital variable in this study as this may affect utilization of maternal health care services if the preferred type of provider by the mothers cannot be easily found in the facility. Results of the study on the type of preferred provider are presented in Figure 4.10.

![Preferred type of provider](image)

*Figure 4. 10: Distribution of respondents by their preferred type of provider*

Findings in Figure 4.10 indicate that slightly more than four fifths (80.9%) of the interviewed respondents prefer to be attended to by trained medical professionals such as Medical Doctors (53.4%), Midwives (14.8%) or Nurses (12.7%). Others preferred T.B.A’s (3.2%) or a combination of all the practitioners (3.7%) whilsts more than one tenth (12.2%) had no preference. Despite more than half (53.4%) of women preferring to be attended to
by a doctor, not even a single doctor has been posted to serve in the sub-district hospital, health center and dispensaries that serve the expansive district.

However, the high number of respondents (80.9%) who preferred to be attended to by a trained medical professional might be a result of the awareness that health professionals are better trained in handling the birth process and emergency cases should any arise in the process of child birth which is always a risky affair. The finding supports MDG’s objectives especially goal five (5) that strives to make sure that women of reproductive age bracket are attended to in health care facilities and by professionals. The fact that over four fifths (80.9%) of interviewed women cited the need to be attended to by professional doctors shows goodwill in what the world is striving to achieve on the part of women.

4.3 Bivariate Analysis

Various statistical tools have been used in this work to provide an in-depth insight on the relationships that exist between the studies’ dependent and independent variables. Bivariate analysis using Chi-square ($\chi^2$) statistic for the test of significance (i.e. goodness of fit) and Cross-tabulation was used to examine the relationship between Socio-Demographic characteristics of the study respondents and utilization of Maternal Health care services.

Further, this thesis uses the Contingency Coefficient (C) to provide a measure of association between the study variables. The rationale behind this is that Contingency Coefficient is appropriate for tables of any size (Mangal, 1987). The value of (C) is given by the formula:

$$C = \sqrt{\frac{\chi^2}{n + \chi^2}}$$

(Equation 4.1)
Where “n” is the sample size and “$\chi^2$” is the Chi-square value. Like $\gamma$ or phi and other coefficients of correlation, C has no limit (i.e. ±1). Its upper limit is dependent upon the number of categories (i.e. the size of the table). Like Chi-square ($\chi^2$), it does not have negative values (Mangal, 1987). For a table made up of an equal number of columns and rows (K×K), the upper limit of the Contingency Coefficient is given by the formula:

$$C_{(upper\ limit)} = \frac{\sqrt{K-1}}{K}$$  \hspace{1cm} \text{(Equation 4.2)}

Thus, for a 2×2 table, it is 0.7, for a 3×3 table $\sqrt{2}/3=0.82$ and for a 4×4 table $\sqrt{3}/4 = 0.87$, e.t.c. However, when the number of columns and rows differ in a table, to calculate the upper limit, the smaller number is taken as K.

Important to note in this thesis is that all the analysis in this work have been conducted using version 20.0 of the Statistical Package for Social Sciences (SPSS), with all the associations/relationships being tested at 95.0% confidence interval.

4.3.1 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Place of Delivery

In this series of bivariate analyses, using Chi-square and Contingency Coefficient, a number of socio-economic characteristics were tested for their influence on the utilization of MHCS. Results of analysis based on Chi-square statistics and Contingency Coefficient for each independent variable and dependent variable have been presented, interpreted and discussed.
Discussion of findings of analysis was done with a view to integrate the results within the existing framework of knowledge in research literature reviewed in Chapter Two of this thesis. In this regard, the discussion of results in this section will draw from the Chi-square and Contingency Coefficient analyses of various Socio-Demographic characteristics (independent variable(s) and place of delivery (dependent variable) in the order in which they are reflected in Table 4.9.

Findings in Table 4.9 shed some light, inter alia, on the relationship between Socio-Demographic Characteristics (SDC) of the respondents and Place of Delivery (PoD). The presentation of the results of analysis follows next.

From Table 4.9, an attempt is made to show whether there exists a relationship between age and use of health facilities for delivery. It is observed that women aged 28 years and above had the highest (54.5%) percentage of users who delivered in health care facilities. Further, women aged below 28 years accounted for over half (54.2%) of all home deliveries with women aged 28 years and above accounting for (4.5%) of all deliveries that took place either at the T.B.A’s clinic or on the way to hospital. Contrary to our expectations, women aged 28 years and above had more (54.5%) health facility deliveries than young women who accounted for only (40%) of health facility deliveries.
Table 4.9: Relationship between Socio-Demographic Characteristics of respondents and Place of Delivery

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Health Facility</th>
<th>Home</th>
<th>T.B.A’s clinic &amp; on the way to hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>54.2</td>
<td>5.3</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>40.9</td>
<td>4.5</td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>54.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>36.2</td>
<td>5.8</td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>45.0</td>
<td>15.0</td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>57.5</td>
<td>12.5</td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>20.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>60.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>58.1</td>
<td>2.3</td>
</tr>
<tr>
<td>Respondents Education Level (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>64.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>41.2</td>
<td>5.9</td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>59.4</td>
<td>6.2</td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>54.4</td>
<td>5.1</td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>43.3</td>
<td>6.7</td>
</tr>
<tr>
<td>Respondents’ income (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>55.9</td>
<td>8.8</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>52.6</td>
<td>10.5</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>55.3</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Note: p values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)
Overall, age was not significantly associated with place of delivery ($\chi^2=1.539; \text{df}=2; p=.463; C=.100$). Moreover, the relationship was found to be weak as indicated by the value of $C$ (0.10). A review of literature shows that the findings of the study do not concur with the findings of studies carried out in Nigeria, Uganda and Ethiopia by (Adamu, 2011; Anyait et al., 2012; Teferra et al., 2012; Daniels et al., 2013; Wolelie et al., 2014; Abeje et al., 2014) who contended that age of women of reproductive age was significantly associated with institutional delivery service utilization.

Results in Table 4.9, also show that more than half (54.6%) of married women gave birth at home with three quarters (75.0%) of mothers who are either single, separated, divorced or widowed delivering in a health facility. Interestingly, women who are either single, divorced separated or widowed have a high likelihood (75.0%) of having a health facility delivery than married women. Nonetheless, the relationship between marital status and the place of delivery was not significant ($\chi^2=5.043 \text{ df}=2 P=.056 C=.191$). This finding is in agreement with other studies from Ethiopia and Uganda (Assfaw & Sebastian, 2010; Anyait et al., 2012) who affirmed that marital union does not influence place of delivery.

Findings in Table 4.9 reveal further that more than half (58.0%) of Christians delivered in a health facility whereas more respondents with no religion and from non-Christian religions delivered at home and in a T.B.A’s clinic or on the way to a health facility. Indeed, religion was significantly associated with place of delivery ($\chi^2=21.384; \text{df}=4; p=0.001; C=0.350$). Hence we conclude that religion has a significant influence on utilization of maternal health care services. The findings concur with that of Adamu (2011) in Nigeria who contended that religion had a significant association with institutional delivery with Christian women
more likely to deliver in health facilities. Hence we conclude that religion has a significant
influence on utilization of maternal health care services.

Data in Table 4.9 reveals that slightly more than three quarters (75.9%) of the Primiparae
women had health facility deliveries with less than a tenth (2.3%) of Grandmultiparae
women delivering either at the T.B.A’s clinic or on the way to hospital. This suggests that
lower parity women have a high (75.9%) likelihood of taking hospital deliveries. This
finding confirms that parity has an influence on women’s place of delivery. These may be
probably women in their first pregnancy and that they are being cautious of perceived risks
that are associated with childbirth. Indeed, parity was significantly associated with place of
delivery ($\chi^2=18.216; \text{df}=4; p=0.001; C=0.326$). The study’s findings are consistent with
those of (Assfaw & Sebastian, 2010). The findings also confirm those of (Tsegay et al.,
2013) who contended that parity is an important determinant of place of delivery.

Table 4.9 also depicts that all (100%) women who had secondary and above level of
education delivered in a health care facility. Further, more than three fifths (64.2%) of
women with no level of education were observed to have had home deliveries. This finding
could be explained by the fact that women with a high education level have the capability
to uptake information about maternal health care services subsequently leading to
utilization of such services. As reported by (Elo, 1992; Tura & G/Mariam, 2008; Gupta et
al., 2010; Adamu, 2011; Anyait et al., 2012; Daniels et al., 2013; Abeje et al., 2014; Ayele
et al., 2014; Odo & Shifti, 2014; Wolelie et al., 2015) maternal education level is a critical
aspect in the utilization of maternal institutionalized delivery services.
Indeed, maternal education was significantly related to the place of delivery ($\chi^2=13.612$; df=4; $p=0.009$; C=0.286). These findings are in tandem with those of (Woldemicael, 2007) and also confirm those of (Teferra et al., 2012) who posited that there is a positive relationship between maternal education and place of delivery.

Findings in Table 4.9 depict that half (50.0%) of women whose husbands had secondary and above level of education had hospital deliveries with slightly less than three fifths (59.4%) of women who were married to men with no formal education having their deliveries at home alone or assisted by a relative. This finding may be explained by the fact that husbands' education may act as an enabling factor in ensuring the mother receives quality care during childbirth as the husband has knowledge on maternal health issues. This finding suggests that women married to men with a high educational level are more likely to deliver in a health facility than those women married to men with no formal education.

However, spousal education level was not significantly associated with place of delivery ($\chi^2=1.860$; df=4; $Pp=0.762$; C=0.114). Apparently, this finding is contrary to those of (Woldemicael, 2007); Gupta et al., 2010; Anyait et al., 2012; Teferra et al., 2012; Ayele et al., 2014; Wolelie et al., 2014; Prasad, 2014; Odo & Shifti, 2014; Abeje et al., 2014) who contended that spousal education level is significantly associated with maternal health care utilization in institutional setups.

Results in Table 4.9 depict that three fifths (60%) of women who earned 4,000 shillings and above had hospital deliveries with more than half (55.9%) of women earning less than 4,000 shillings having home deliveries. The high number of women earning 4,000 shillings
and above having health facility deliveries with only (35.3%) of women earning less than 4,000 shillings having health facility deliveries could be as a result of the costs involved. As reported by Tura & Mariam, (2008) and maternal income has an influence on utilization of institutional delivery services. However, maternal income was not significantly associated with place of delivery ($\chi^2=4.129$, df=2, p=0.127; C=0.267).

From Table 4.9, it is evident that less than one tenth (5.3%) and more than half (55.3%) of women whose spouses earned 4,000 shillings and above delivered either at the T.B.A’s clinic or on their way to hospital or at home respectively. Further, slightly more than one third (36.8%) of women whose spouses earned less than 4,000 shillings had health facility deliveries. As expected, women whose husbands earned 4,000 shillings and above were bound to have more health facility deliveries because this acts as an enabling factor than their counterparts married to husbands who earn less than 4,000 shillings. This could be explained by the fact that they have resources that they could use in the course of seeking institutional delivery services as opposed to their counterparts who may not be able to access institutional delivery services due to shortage or lack of needed resources. However, spousal income level was not significantly associated with place of delivery ($\chi^2=0.539$; df=2; p=0.764; C=0.097). Hence we conclude that spousal income level has no relationship with place of delivery.

4.3.2 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Antenatal Care

Table 4.10 shows the relationship between Socio-Demographic Characteristics and Antenatal care. In this set of tests, the researcher first makes an attempt to determine
whether a relationship exists between age and number of ANC visits made to the clinic before delivery.

Findings in Table 4.10 show that women aged 28 years and above were found to be more likely (90.9 %) to make 4 visits and above to the ANC clinic. More than one third (37.7%) of young women below 28 years were observed to make less than the required four visits to the ANC clinic prior to delivery of child born at last birth. A possible explanation for why less than two fifths (37.7%) of women below age 28 years made less than the required four visits could be as a result of lack of information on the required number and timing of visits to the ANC clinic. As reported by Anchang-Kimbi et al., (2014), young age (less than 20 years) is a significant risk factor associated with fewer clinic visits (less than 4).

Indeed, maternal age was significantly associated with the number of ANC visits ($\chi^2=7.063; \text{df}=1; \text{p}=0.008; \text{C}=0.190$). These findings are consistent with those of Banda, (2013), Tsegay et al., (2013) and Anchang-Kimbi et al., (2014), that maternal age has an influence on number of ANC visits hence we conclude that maternal age significantly influences number of ANC visits women make before delivery.
Table 4.10: Relationship between Socio-Demographic characteristics of respondents and number of ANC visits

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>&lt;4 visits</th>
<th>4 Visits and above</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td>7.063</td>
<td>1</td>
<td>.008**</td>
<td>.190</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>37.7</td>
<td>62.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>9.1</td>
<td>90.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td>7.747</td>
<td>1</td>
<td>.005**</td>
<td>.198</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>31.2</td>
<td>68.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>63.2</td>
<td>36.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td>7.674</td>
<td>2</td>
<td>.022*</td>
<td>.198</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>38.3</td>
<td>61.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>8.7</td>
<td>91.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>37.5</td>
<td>62.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td>24.609</td>
<td>3</td>
<td>.001**</td>
<td>.339</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
<td>69.4</td>
<td>30.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae</td>
<td>24.1</td>
<td>75.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>28.4</td>
<td>71.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>23.3</td>
<td>76.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education Level (%)</td>
<td>4.237</td>
<td>2</td>
<td>.120</td>
<td>.148</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>27.1</td>
<td>72.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>39.1</td>
<td>60.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td>6.133</td>
<td>2</td>
<td>.047*</td>
<td>.186</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>29.9</td>
<td>70.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>46.2</td>
<td>53.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td>1.242</td>
<td>1</td>
<td>.265</td>
<td>.136</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>26.8</td>
<td>73.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td>.255</td>
<td>1</td>
<td>.613</td>
<td>.059</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>19.0</td>
<td>81.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>24.5</td>
<td>75.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values*: $p \leq 0.05$ **: $p \leq 0.01$

Findings in Table 4.10 show that more than three fifths (68.8%) of married women made four visits and above, while slightly more than three fifths (63.2%) of women who were single, separated, widowed or divorced made less than four visits before delivery of their
latest child. The above findings suggest that married women have a higher likelihood of having four visits and above than unmarried women. This could be attributed to the fact that they get maternal services support from their spouses either in form of maternal care information, social or financial support. The finding of this study that male spouses had higher level of education than their wives further strengthen the support that women receive for ANC services during pregnancy.

Indeed, marital status was significantly associated with ANC visits (\( \chi^2 = 7.747; \) df=1; p=0.005; C=0.198). This finding is consistent with that of a study carried out in India by Gupta et al., (2010) and also confirms that of Anchang-Kimbi et al., (2014) who stated that being single is a significant risk factor associated with fewer clinic visits (less than 4).

Table 4.10 further depicts that majority (91.3%) of women who profess Islam and African Traditional Religion (ATR) made four visits and above, while more than one third (38.3%) of Christian women had less than four visits to the clinic before birth of their latest child. These findings show that women who profess Islam and African Traditional Religion have a high likelihood (91.3%) of having made four visits and above. Indeed, religion was significantly associated with ANC visits (\( \chi^2 = 7.674; \) df=2; P=0.022; C=0.198). The study finding corroborates that of Adamu, (2011) who contends that religion has an influence on number of ANC visits.

Findings in Table 4.10 reveal that more than three fifths (69.4%) of Nulliparae women made less than four visits, while slightly more than three quarters (76.7%) of grand Multiparae women made four and above ANC visits. This finding can be possibly explained by the fact that women of a higher parity have had previous birth experiences.
which might have been occasioned by a complication warranting them to make all the required visits to avert any complication that may arise. Indeed, parity was significantly associated with ANC visits ($\chi^2=24.609; \text{df}=3; \text{P}=0.001; \text{C}=0.339$). This finding is in agreement with that of Banda, (2013) who reported that parity is significantly associated with number of visits to the ANC clinic.

Table 4.10 further depicts that slightly less than three quarters (72.9%) of women with no formal education made four visits and above with one half (50.0%) of women with secondary education and above making 4 visits and above. The high (72.9%) number of women with no formal education having had more than four ANC visits and half (50%) of women with secondary education or more having less than four visits could be explained by the fact that most respondents knew about maternal health care services irrespective of their educational status. This suggests that existence of informal means such as radio and television among others could be significant sources of information in educating women of reproductive ages as opposed to formal education only. As argued by Banda, (2013), education level does not seem to influence number of ANC visits to the clinic but those with secondary education were more likely to make more visit to the ANC clinic. In essence, this finding contradicts that of Banda (2013) where more (72.9%) women with no formal education were observed to have had four visits and above.

Further, maternal education is associated with improved health, women empowerment and reduction of gender disparities. However, the relationship between maternal education level and ANC visits was not significant ($\chi^2=4.237; \text{df}=2; \text{P}=0.120; \text{C}=0.148$). This study finding contradict those of (Elo, 1992; Chakraborty et al., 2003; Woldemicael, 2007; Gupta et al.,
2010) who reported that maternal education has a significant bearing on the number of ANC visits.

Results in Table 4.10 also show that four fifths (80%) of women married to men with no formal education made four visits and above, while more than two fifths (46.2%) of women whose spouses had secondary and above level of education made less than four visits. Interestingly, respondents who utilized the services more had spouses with lower levels of education as compared to those who did not utilize them. This could be attributed to the fact that use of antenatal care is not limited to formal education only. Further, Maternity services are now free and there is massive awareness creation by the Ministry of Health (MoH) on utilization of MHCS in the rural areas, in addition to other initiatives such as the Beyond Zero Campaign by the First Lady Margaret Kenyatta.

Indeed, spousal education level was significantly associated with number of ANC visits ($\chi^2=6.133; \text{df}=2; p=0.047; C=0.186$). This study finding corroborate those of Woldemicael, (2007; and Daniels et al., (2013) when they contended that spousal educational level was associated with 4 and above antenatal visits.

Findings of the study in Table 4.10 also show that slightly less than three quarters (73.2%) of women who earned 4,000 shillings and above four visits and above with two fifths (40.0%) of women earning below 4,000 shillings making less than four visits. This finding could be explained on the basis of the Output Based Approach (OBA) program which aims to improve access, equity and uptake of quality reproductive health services to economically disadvantaged women. The women purchase the vouchers at a subsidized price of 100 shillings which entitles them to access reproductive health services such as
Safe Motherhood (SMH), Family Planning (FP) and Gender Based Violence (GBV) recovery services free of charge.

Maternal income was not significantly associated with number of ANC visits ($\chi^2 = 1.242; \text{df}=1; p=0.265; C=0.136$). Notably, this finding is not in tandem with that of Gupta et al., (2010) when they contended that maternal income had a significant influence on the number of ANC visits.

Finally, results in Table 4.10 depict that slightly more than four fifths (81.0%) of women whose spouses earned less than 4,000 shillings made four ANC visits or more compared with (75.5%) of women whose spouses earned 4,000 shillings and above. This finding could be explained by the fact that the Government of Kenya (GoK) abolished maternity fees in all public health facilities through a presidential decree on 1st June 2013 ("MaternalNewbornHealthCare_Kenya_Oct2013.pdf," n.d.). However, spousal income level was not significantly associated with the number of ANC visits ($\chi^2 = 0.255; \text{df}=1; p=0.613; C=0.059$). Hence we conclude that spousal income level does not influence the number of ANC visits the woman makes during pregnancy.

**4.3.3 Relationship between Socio-Demographic Characteristics and Utilization of Skilled Birth Attendance (SBA)**

Table 4.11 shows the relationship between Socio-Demographic Characteristics and use of Skilled Birth Attendants services. In this study, an attempt was made to understand the relationship between age and Utilization of Skilled Birth Attendance.
Results of analysis in Table 4.11 indicate that slightly less than three fifths (59.5%) of women aged below 28 years did not have SBA service at birth of their latest child while more than half (54.5%) of the women aged 28 years and above had SBA service during their latest birth. This could be explained by the fact that marriage is seen as a sacred institution in the African set up and thus getting children before marriage was a sign of lack of morals. Accordingly, many young women who were not married ran away from their parent’s home and went to give birth elsewhere.

The relationship between age and SBA service was not significant ($\chi^2=1.530; \text{df}=1; p=0.216; \text{C}=0.099$). This finding contradicts those of Daniels et al., (2013) when they contended that use of SBA was more associated with the youth.

Table 4.11 shows that slightly more than three fifths (60.3%) of married women did not have SBA of child born at last birth, while three quarters (75.0%) of women who were unmarried had SBA services. Being married means one has a partner who could take care of them and that is why most respondents had no skilled attendance at birth, while being unmarried makes one to seek SBA services in case labour pains commence when they are all alone at home. Indeed, marital status was significantly associated with SBA services ($\chi^2=5.634; \text{df}=1; p=0.018; \text{C}=0.188$). This study’s finding is consistent with that of Daniels et al., (2013) that marital status has a significant association with SBA with single mothers more likely to seek SBA.
Table 4.11: Relationship between Socio-Demographic characteristics of respondents and use of a Skilled Birth Attendant (SBA)

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Skilled Attendance</th>
<th>Unskilled Attendance</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td>1.530</td>
<td>1</td>
<td>.216</td>
<td>.099</td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>59.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>45.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td>5.634</td>
<td>1</td>
<td>.018*</td>
<td>.188</td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>60.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td>13.463</td>
<td>2</td>
<td>.001**</td>
<td>.284</td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>42.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>73.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td>16.951</td>
<td>2</td>
<td>.001**</td>
<td>.316</td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>24.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>67.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education Level (%)</td>
<td></td>
<td></td>
<td>12.934</td>
<td>2</td>
<td>.002**</td>
<td>.279</td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>69.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>47.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td>1.590</td>
<td>1</td>
<td>.451</td>
<td>.106</td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>65.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>59.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td>3.113</td>
<td>1</td>
<td>.078</td>
<td>.233</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td>.037</td>
<td>1</td>
<td>.847</td>
<td>.025</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>63.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Results in Table 4.11 show that less than three fifths (58.0%) of Christians had skilled attendance at birth, while three fifths (60.0%) of women who belong to Islam and African Traditional Religion had no skilled attendance at birth of child born at last birth. Christian women tend to use SBA more (58.0%) than women who profess Islam and ATR who report (60.0%) utilization of unskilled attendance at birth. According to Stenlund, (2012) women belonging to religions other than Islam have higher odds of delivering with assistance of SBA’s. Indeed, religion was significantly associated with use of SBA services ($\chi^2=13.463; \text{df}=2; p=0.001; C=0.284$). This finding corroborates that of Stenlund, (2012) who contended that women belonging to other religions had higher odds of delivering with assistance of SBA’s than those of Islamic faith.

Further, findings in Table 4.11 indicate that slightly more than three quarters (75.9%) of Primiparae women had skilled attendance services at birth during latest birth, while more than three fifths (67.9%) of Multiparae women had no skilled attendance during latest birth. Lower parity women are more likely to use SBA than higher parity women because higher parity women have experience due to previous births. As reported by Worku et al., (2013), women who had births for the first time were more likely to use Skilled Birth Attendance services. Indeed, parity was significantly associated with Skilled Birth Attendance ($\chi^2=16.951; \text{df}=2; p=0.001; C=0.316$). The study’s finding is consistent with those of (Ochako et al., 2011; Kabakyenga et al., 2012; Worku et al., 2013) who contended that parity has a strong bearing on utilization of SBA.

Table 4.11 also depicts that slightly less than one third (30.9%) of women with no formal education had skilled attendance at birth with all women with secondary and higher
education level background having skilled attendance at birth. Education exposes women to information and knowledge on the importance of utilization of SBA and thus skilled birth attendance increases with secondary education and above. According to (Kabakyenga et al., 2012), women with secondary education and above are more likely to use SBA’s than those with lower levels of education. Indeed, maternal education was significantly associated with Skilled Birth Attendance ($\chi^2=12.934$; df=2; p=0.002; C=0.279). This finding is in tandem with those of (Ochako et al., 2011; Worku et al., 2013) who reported that maternal education has a significant bearing on use of SBA.

Table 4.11 further indicates that half (50.0%) of women whose spouses had secondary and higher level of education had skilled attendance services at birth, while more women (65.6%) whose spouses had no formal education had no access to skilled services at delivery. Spousal education level acts as an enabling factor for utilization of SBA. However, spousal education level was not significantly associated with Skilled Birth Attendance ($\chi^2=1.590$; df=1; p=0.451; C=0.106). The finding contradicts those of Daniels et al., (2013) when they reported that spousal educational level was significantly associated with assistance at delivery by a trained medical personnel.

Results in Table 4.11 also indicated that three fifths (60.0%) of women who earned more than 4,000 shillings had skilled attendance at birth, while more than three fifths (64.7%) of the women who earned less than 4,000 shillings did not have skilled attendance during the birth of their current child. Maternal income was not significantly associated with Skilled Birth Attendance ($\chi^2=3.113$; df=1; p=0.078; C=0.233). The study finding is inconsistent with that of Stenlund (2012) who contended that women belonging to the poor and poorest
wealth groups are more likely to receive unskilled assistance than their counterparts in the richest and richer wealth groups.

Results in Table 4.11 show that more than three fifths (63.2%) of women whose spouses earned less than 4,000 shillings did not receive skilled attendance at birth while (60.5%) of those whose spouses earned more than 4,000 shillings received skilled attendance at birth. These proportions are about the same. Hence, spousal income level is not significantly associated with Skilled Birth Attendance ($\chi^2=0.037; \text{df}=1; p=0.847; C=0.025$). Hence we conclude that spousal income level does not have a significant association with use of SBA.

4.3.4 Relationship between Socio-Demographic Characteristics and utilization of maternal health care services as measured by Trimester women sought ANC care

Table 4.12 shows that none of the Socio-Demographic characteristics had a significant association with trimester in which women sought ANC care.

Age ($\chi^2=.001; \text{df}=1; p=.982; C=.002$) and marital status ($\chi^2=.224; \text{df}=1; p=.636; C=.042$) were not significantly associated with trimester the woman started ANC visits. These findings are inconsistent with those of (Daniels et al., 2013) who stated that age and marital status plays a significant role in use of ANC services within the first trimester. Religion was not significantly associated with trimester ($\chi^2=.941; \text{df}=2; p=.625; C=.086$). These findings are inconsistent with those of (Olayinka, Joel, & Bukola, 2012) who contended that there was a relationship between religion and trimester women started their ANC visits.
Table 4.12: Relationship between Socio-Demographic Characteristics and Trimester women sought ANC care

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>1st Trimester</th>
<th>2nd &amp; 3rd Trimesters</th>
<th>$\chi^2$</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td>.001</td>
<td>1</td>
<td>.982</td>
<td>.002</td>
</tr>
<tr>
<td>Below 28 years</td>
<td>24.0</td>
<td>76.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>23.8</td>
<td>76.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td>.224</td>
<td>1</td>
<td>.636</td>
<td>.042</td>
</tr>
<tr>
<td>Married</td>
<td>24.6</td>
<td>75.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>18.2</td>
<td>81.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td>.941</td>
<td>2</td>
<td>.625</td>
<td>.086</td>
</tr>
<tr>
<td>Christianity</td>
<td>21.1</td>
<td>78.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>28.3</td>
<td>71.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td>.302</td>
<td>2</td>
<td>.860</td>
<td>.049</td>
</tr>
<tr>
<td>Nullipara</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>28.6</td>
<td>71.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multipara</td>
<td>22.4</td>
<td>77.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultipara</td>
<td>26.2</td>
<td>73.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education Level (%)</td>
<td></td>
<td></td>
<td>.803</td>
<td>2</td>
<td>.669</td>
<td>.080</td>
</tr>
<tr>
<td>No formal education</td>
<td>26.3</td>
<td>73.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>20.8</td>
<td>79.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>0.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td>.842</td>
<td>2</td>
<td>.656</td>
<td>.085</td>
</tr>
<tr>
<td>No formal education</td>
<td>31.0</td>
<td>69.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>24.2</td>
<td>75.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td>.899</td>
<td>1</td>
<td>.343</td>
<td>.136</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>22.6</td>
<td>77.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td>.089</td>
<td>1</td>
<td>.765</td>
<td>.042</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>17.6</td>
<td>82.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>21.2</td>
<td>78.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01

Additionally, Parity was not significantly associated with trimester women started their ANC visits ($\chi^2=.302$; df=2; p=.860; C=.049). These findings are inconsistent with those of
(Daniels et al., 2013) who contended that parity has a bearing on trimester that women start receiving antenatal care.

Maternal education was not significantly associated with trimester ($\chi^2=0.803; \text{df}=2; p=0.669; C=0.080$). The study findings are consistent with those of (Daniels et al., 2013) who stated that education level did not have a significant relationship with use of ANC during the first trimester. In addition, spousal education was not significantly associated with trimester ($\chi^2=0.842; \text{df}=2; p=0.656; C=0.085$). The study findings are contrary to those of (Daniels et al., 2013) who contended that spousal education level was associated with trimester women start receiving antenatal care.

Maternal income ($\chi^2=0.899; \text{df}=1; p=0.343; C=0.136$) and spousal income ($\chi^2=0.089; \text{df}=1; p=0.765; C=0.042$) were not significantly associated with the trimester they started ANC visits.

### 4.3.5 Women’s Preference and Perception of ANC Services Offered at the Healthcare Facilities

Results from Table 4.13 indicate that, more than four fifths (80%) of women visiting a dispensary, a health centre or a sub-district hospital reported being happy with the facility space, neatness and adequacy of privacy that was provided. Of women visiting both categories of facilities, less than a tenth (6.4%) of them preferred being attended to by a male provider with more than two fifths (45.6%) of those visiting the dispensary preferring a female health care provider and those attending health centres and sub-district hospital accounting for less than two fifths (35.9%) preference of female health care provider. This
could possibly be explained by either cultural issues surrounding child birth in the community.

Table 4. 13: Women’s preference and perception of ANC services offered in the health facilities

<table>
<thead>
<tr>
<th></th>
<th>Dispensary (n= 125)</th>
<th>Health Centre + Sub district hospital (n= 64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waiting time (minutes)</strong></td>
<td>Mean</td>
<td></td>
<td><strong>0.010</strong></td>
</tr>
<tr>
<td></td>
<td>39.08</td>
<td>54.61</td>
<td><strong>0.010</strong></td>
</tr>
<tr>
<td><strong>Happy with waiting time (%)</strong></td>
<td></td>
<td></td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Yes</td>
<td>99.2</td>
<td>85.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with facility space (%)</strong></td>
<td></td>
<td></td>
<td><strong>0.301</strong></td>
</tr>
<tr>
<td>Yes</td>
<td>83.2</td>
<td>88.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.8</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with neatness (%)</strong></td>
<td></td>
<td></td>
<td><strong>0.327</strong></td>
</tr>
<tr>
<td>Yes</td>
<td>93.6</td>
<td>89.1</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6.4</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td><strong>Adequate privacy (%)</strong></td>
<td></td>
<td></td>
<td><strong>0.208</strong></td>
</tr>
<tr>
<td>Yes</td>
<td>92.0</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred gender of provider (%)</strong></td>
<td></td>
<td></td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Male</td>
<td>6.4</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45.6</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>48.0</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred type of provider (%)</strong></td>
<td></td>
<td></td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Doctor</td>
<td>53.6</td>
<td>53.1</td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>12.0</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td>20.8</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Traditional Birth Attendant</td>
<td>4.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>A combination</td>
<td>4.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>5.6</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td><strong>Would you come back to this facility (%)</strong></td>
<td></td>
<td></td>
<td><strong>0.129</strong></td>
</tr>
<tr>
<td>Yes</td>
<td>91.2</td>
<td>93.8</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.6</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>7.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td><strong>Will you recommend this facility to others (%)</strong></td>
<td></td>
<td></td>
<td><strong>0.413</strong></td>
</tr>
<tr>
<td>Yes</td>
<td>96.8</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.4</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *:* $p \leq 0.05$ **:* $p \leq 0.01$
Table 4.13 further presents women’s preferences and perceptions of ANC services that are offered at the dispensaries, health centres and sub-district hospital in Ganze District. More than 90% of women attending dispensaries or either health centre or sub-district hospital reported that they would return to the same health facility or would recommend it to others. The mean waiting time in the health centre and sub-district hospital per visit was significantly higher (54.61 minutes) than that in the dispensaries (39.08 minutes). Contrary to expectations, more (99.2%) women were happy with the waiting time at the dispensaries compared to health centres and sub-district hospitals (85.9%), with the latter being higher in the health care delivery system hierarchy in the country.

Results in Table 4.13 show that more than two fifths (48.0%) of women at the dispensaries had no preference on the preferred gender of provider with slightly more than three fifths (60.9%) at the health centres and sub-district hospitals having no preference for gender of health provider. This could be attributed to the fact that both are trained professionals as supported by field interviews and observations. Findings show that half (50%) of women visiting both set of facilities preferred being attended to by a doctor with only 1.6% of those visiting health centres and sub-district hospitals preferring TBA’s as opposed to 4% of those visiting the dispensary. There is a significant relationship between category of facility and waiting time (p=0.010) and the preferred type of provider (p=0.001).

4.3.6 Proportion of women who felt reassured about common pregnancy related concerns by health care providers

Study findings on reassurance patterns that women received from their providers about common pregnancy related issues are avidly presented in Table 4.14. Overall, among the
women who attended either a health facility or sub-district hospital, slightly more than four fifths (83%) felt reassured about the position of the baby and that of their own health. However, 87.8% of women who visited dispensaries did not receive information about the size of their unborn baby with more than three fifths (62.7%) receiving information about foetal abnormality. More than three fifths (68.3%) of our total sample who visited the dispensary had received information about the position of the baby, over three fifths (62.6%) on foetal abnormality and over four fifths (82.9%) on mothers own health and those who visited either a health centre or a sub-district hospital had received information about the position of the baby (83.9%), size of the baby (58.1%), foetal abnormality (67.7%) and mothers own health (87.1%) and felt reassured except that only (12.2%) of those who visited dispensaries received information on the size of their babies.

Significantly, those women visiting either a health centre or a sub-district hospital feel much more reassured about the four highlighted pregnancy related complications than those visiting the dispensaries. Women visiting a health centre or a sub-district hospital were significantly associated with receiving information about the position of the baby (p=0.23) and the size of the baby (p=0.001). These findings corroborate those of a study carried out in Gambia by Jallow et al., (2012) which observed that category or type of health facility had a bearing on receiving information about position and size of the unborn baby with women attending private health facilities likely to receive such information than those attending public health facilities.
Table 4.14: Proportion of women who were reassured about common pregnancy related concerns by their service providers

<table>
<thead>
<tr>
<th></th>
<th>Women who felt reassured</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dispensary (n= 125)</td>
<td>Health Centre + Sub district hospital (n= 64)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Position of the baby (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>68.3</td>
<td>83.9</td>
<td></td>
<td>.023*</td>
<td>.164</td>
</tr>
<tr>
<td>No</td>
<td>31.7</td>
<td>16.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size of the baby (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12.2</td>
<td>58.1</td>
<td></td>
<td>.001**</td>
<td>.436</td>
</tr>
<tr>
<td>No</td>
<td>87.8</td>
<td>41.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foetal abnormality (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>62.6</td>
<td>67.7</td>
<td></td>
<td>.491</td>
<td>.051</td>
</tr>
<tr>
<td>No</td>
<td>37.4</td>
<td>32.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mother’s own health (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>82.9</td>
<td>87.1</td>
<td></td>
<td>.461</td>
<td>.054</td>
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<tr>
<td>No</td>
<td>17.1</td>
<td>12.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p \leq 0.05 **: p \leq 0.01

However, no significant relationship exists between receiving information on foetal abnormality (p=0.491) and mothers own health (p=0.461) and the category of health facility one visits. This finding is inconsistent with that of Jallow et al., (2012) who contended that category of facility had a significant association with receiving information about foetal abnormality and the heath of the mother during the pregnancy term. Thus, findings in Table 4.14 clearly show that women of reproductive age (18-49) in Ganze District would prefer to visit either a health centre or a sub-district hospital owing to reassurance they get concerning complications to their unborn children and that of their own health.
4.4: Logistic Regression Analyses

Binomial logistic regression was undertaken because it examines the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). Binomial logistic regression was undertaken for the three dependent variables: Place of Delivery, Number of ANC visits to the clinic before birth of current child and Skilled Birth Attendance which is without doubt the single most critical intervention in reducing maternal mortalities and morbidities (Mpembeni et al., 2007).

In this part of the analysis, only five socio-demographic variables were included in the model: age, marital status, religion, education and parity. The rationale behind this is that preliminary analysis showed that only these five socio-demographic variables were significant either at the bivariate and multivariate level of analysis.

4.4.1 Binary Logistic Regression on Socio-Demographic Characteristics and Institutional Delivery Service Utilization

In Table 4.15 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization of Institutional Delivery services. Results from Table 4.15 indicate that except for mother’s age and level of education, all the selected socio-demographic characteristics are significant predictors of utilization of institutional delivery services in Ganze district.
From Table 4.15, it is evident that Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) likely to have institutional delivery service utilization than Primiparae women. Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) likely to have institutional delivery service utilization than Primiparae women. Institutional delivery service utilization was also more common among women belonging either to Islam, ATR and those women who professed no religion (AOR 3.091, **p≤0.01**).
95% CI, 1.447-6.602, p=0.004). The probability was much less for women who were unmarried (AOR 0.170, 95% CI 0.039-0.749, p= 0.019).

4.4.2 Regression on Socio-Demographic Characteristics and Number of ANC Visits

In Table 4.16 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the number of ANC visits made to the clinic.

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>189</td>
<td>1.766</td>
<td>0.844</td>
<td>4.384</td>
<td>1</td>
<td>5.849</td>
<td>(1.120-30.553)</td>
<td>0.036*</td>
</tr>
<tr>
<td>Below28 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>189</td>
<td>-1.320</td>
<td>0.573</td>
<td>5.297</td>
<td>1</td>
<td>0.267</td>
<td>(0.087-0.822)</td>
<td>0.021*</td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>189</td>
<td>0.080</td>
<td>0.362</td>
<td>0.048</td>
<td>1</td>
<td>1.083</td>
<td>(0.533-2.199)</td>
<td>0.826</td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>189</td>
<td>-0.153</td>
<td>0.407</td>
<td>0.141</td>
<td>1</td>
<td>0.859</td>
<td>(0.387-1.906)</td>
<td>0.708</td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td>189</td>
<td>1.872</td>
<td>.577</td>
<td>10.515</td>
<td>1</td>
<td>6.499</td>
<td>(2.097-20.145)</td>
<td>0.001**</td>
</tr>
<tr>
<td>Nulliparae®</td>
<td>36</td>
<td>1.3605</td>
<td>3</td>
<td></td>
<td></td>
<td>3.605</td>
<td>(1.429-9.602)</td>
<td>0.003**</td>
</tr>
<tr>
<td>Primiparae</td>
<td>29</td>
<td>1.508</td>
<td>0.481</td>
<td>9.841</td>
<td>1</td>
<td>4.516</td>
<td>(1.761-11.585)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722</td>
<td>(1.129-12.273)</td>
<td>0.031*</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

® - Reference category; Note: p values *:p≤ 0.05 **: p≤ 0.01
Results from Table 4.16 indicate that mother’s age, marital status and parity are significant predictors of the number of ANC visits women will make before delivery in Ganze district.

From Table 4.16, it is evident that women aged above 28 years (AOR 5.849, 95% CI 1.120-30.553, p=0.036) and those who were single, separated, divorced and widowed (AOR 0.267, 95% CI 0.087-0.822, p=0.021) were more likely to make four or more antenatal visits to the clinic before delivery of their latest child. Further, parity was found to have a significant impact on the number of ANC visits with Primiparae women being six times (AOR 6.499, 95% CI 2.097-20.145, p=0.001) more likely to make four or more ANC visits than Nulliparae women; Multiparae women being five times (AOR 4.516, 95% CI 1.761-11.585, p=0.002) likely to make four or more visits than Nulliparae women and lastly Grandmultiparae women being four times (AOR 3.722, 95% CI 1.129-12.273, p=0.031) likely to make four or more visits to the ANC clinic than Nulliparae women.

4.4.3 Binary Logistic Regression on Socio-Demographic Characteristics and Skilled Assistance during Delivery

In Table 4.17 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization skilled attendance during delivery. Results from Table 4.17 indicate that apart from mother’s age educational status, all other selected socio-demographic characteristics are significant predictors of utilization of skilled assistance during delivery in Ganze district.
Table 4.17: Binary Logistic Regression results with odds ratios and 95% confidence interval for Skilled Assistance during Delivery

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td></td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td>0.330</td>
</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae®</td>
<td>29</td>
<td>1.915</td>
<td>0.549</td>
<td>12.301</td>
<td>2</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td>(1.618-21.668)</td>
<td>0.007**</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Missing cases = 36 © - Reference category; Note: p values *: p ≤ 0.05 **: p ≤ 0.01

Table 4.17 depicts that Muslim women, those who believed in ATR and who professed no religion were three times (AOR 3.091, 95% CI 1.447-6.602, p=0.004) more likely to use the assistance of a Skilled Birth Attendant than Christian women. Further, women who were unmarried were (AOR 0.170, 95% CI 0.039-0.749, p=0.019) less likely to use the assistance of a Skilled Birth Attendant. Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) more likely to use a Skilled Birth Attendant than
Primiparae women and Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) more likely to use a Skilled Birth Attendant during birth than Primiparae women.

4.4.4 Binary Logistic Regression on Socio-Demographic Characteristics and
Trimester women started attending ANC clinic

In Table 4.18 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the trimester that women started making ANC visits to the clinic. Results from Table 4.18 indicate that all selected socio-demographic characteristics are not significant predictors of the timing that women start making ANC visits to the clinic in Ganze district.

Table 4. 18: Binary Logistic Regression results with odds ratios and 95% confidence interval for Trimester women started attending ANC clinic

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at most recent birth</td>
<td>125</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038</td>
<td>(0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Below28 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>125</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474</td>
<td>(0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>125</td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789</td>
<td>(0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>125</td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1</td>
<td>1.326</td>
<td>(0.516-0.558)</td>
<td>0.558</td>
</tr>
<tr>
<td>No formal education</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some formal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results in Table 4.18 show that there exists no significant relationship between the socio-demographic characteristics of the respondents and the trimester that they first started attending ANC clinic. However, women aged above 28 years (AOR 1.038, 95% CI 0.306-3.515, p=0.952) and those who were unmarried (AOR 1.474, 95% CI 0.296-7.344, p=0.636) were one time more likely to make their first visit to the ANC clinic during the first trimester of their pregnancy. Multiparae women (AOR 1.708, 95% CI 0.284-10.295, p=0.559) were two times more likely to make their first ANC visit during the first trimester than Primiparae women with Grandmultiparae women (AOR 1.438, 95% CI 0.207-9.997, p=0.714) being one more time likely to make their first ANC visit during the first trimester than Primiparae women.

<table>
<thead>
<tr>
<th>Parity</th>
<th>125</th>
<th>3.410</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primiparae®</td>
<td>0.423</td>
<td>2</td>
</tr>
<tr>
<td>Multiparae</td>
<td>0.536</td>
<td>0.916</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>0.363</td>
<td>0.989</td>
</tr>
</tbody>
</table>

Missing cases =64 ☰ - Reference category; Note: p values *: p≤ 0.05 **: p≤ 0.01
CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary
This section presents a summary of the comparison of results of the relationship between the socio-demographic characteristics of the study respondents and variables used to measure the utilization of MHCS at both the Bivariate and Multivariate Logistic Regression Analyses to try and find out what determines utilization of maternal healthcare services in Ganze district. The findings of this study as shown in Table 5.1, Table 5.2, Table 5.3 and Table 5.4 confirm that the four indicators of utilization of maternal health care services are affected differently by the various socio-demographic characteristics in the entire Ganze district at the bivariate and multivariate levels of analyses. Further, the differences in the utilization of the different maternal health care services as espoused by the two levels of analyses will enable us to clearly focus on what should be done in an effort to improve utilization levels.

5.1.1 Comparison of results of relationship between socio-demographic characteristics and institutional service delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses
Table 5.1 shows the relationship of all the socio-demographic characteristics of the respondents with institutional delivery service utilization both at the Bivariate and Multivariate levels of analyses to find out what predicts institutional delivery service utilization.
Table 5.1: Comparison of results of relationship between Socio-Demographic characteristics and Institutional Service Delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>1.539</td>
<td>0.463</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.043</td>
<td>0.056</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>21.384</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Respondents education</td>
<td>13.612</td>
<td><strong>0.009</strong></td>
</tr>
<tr>
<td>Parity</td>
<td>18.216</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: p values *: p $\leq 0.05$ **: p $\leq 0.01$

Findings in Table 5.1, interestingly show that while at the Bivariate level analysis, maternal education was significantly (p=0.009) related to institutional delivery services utilization, at the Multivariate level analysis it has no significant bearing on the utilization of the institutional delivery services (p=0.330). This is not to imply that education is not an important predictor of institutional delivery service utilization at all since it exposes women to access and knowledge on maternal health issues. This finding could be attributed in the way the variable education was coded and it could also be explained by the fact that there has been massive campaigns by the GoK and MoH in sensitizing the population about the importance of utilization of maternal health care services to avert the dangers that are associated with pregnancy and child birth through other media such as the radio, television and even the chiefs ‘barazas’. Marital status of the mothers is insignificant (p=0.056) at the bivariate level analysis but proves to be significant (p=0.019) at the multivariate level analysis. Religion and Parity of the mothers were found to be both significant at the bivariate and multivariate levels of analyses.
5.1.2 Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.2 shows the relationship of all the socio-demographic characteristics of the respondents and number of ANC visits that women make to the health facilities both at the Bivariate and Multivariate levels of analyses to find out what predicts the number of ANC visits that mothers make to the health facility.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>7.063</td>
<td><strong>0.008</strong></td>
</tr>
<tr>
<td>Marital Status</td>
<td>7.747</td>
<td><strong>0.005</strong></td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>7.674</td>
<td><strong>0.022</strong></td>
</tr>
<tr>
<td>Respondents’ education</td>
<td>4.237</td>
<td>0.120</td>
</tr>
<tr>
<td>Parity</td>
<td>24.609</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01

From Table 5.2, it is interesting to note that despite the fact we expected education to be a significant determinant of the number of ANC visits that mothers make to the clinic due to access and use of knowledge on maternal health issues acquired during formal education, maternal education is insignificant both at the Bivariate and Multivariate level analyses. Further, while religious affiliation is significant at the Bivariate level (p=0.022), it is insignificant (p=0.826) at the Multivariate level analysis after controlling for the effects of the other variables under study.

Age of the mothers, marital status and parity prove to be significant at the 95.0%
confidence interval both at the Bivariate and Multivariate level analyses as shown in Table 5.2. The study found out that mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the number of visits they make to the health facility at the Multivariate regression analysis level as indicated by these findings.

5.1.3 Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendants at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.3 shows the relationship of all the socio-demographic characteristics of the respondents and the use of Skilled Birth Attendants (SBA) both at the Bivariate and Multivariate levels of analyses to find out what predicts utilization of Skilled Birth Attendants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>1.530</td>
<td>0.216</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.634</td>
<td>\textbf{0.018*}</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>13.463</td>
<td>\textbf{0.001**}</td>
</tr>
<tr>
<td>Respondents education</td>
<td>12.934</td>
<td>\textbf{0.002**}</td>
</tr>
<tr>
<td>Parity</td>
<td>16.951</td>
<td>\textbf{0.001**}</td>
</tr>
</tbody>
</table>

Note: p values \( *: p \leq 0.05 \) \( **: p \leq 0.01 \)

From Table 5.3, apart from the age of the mothers; marital status, religious affiliation, maternal education, and parity all prove to be significant at the 95.0% confidence interval at the Bivariate level of analysis. However, while marital status, religious affiliation and parity still prove to be significant at the Multivariate level of analysis and thus strongly
predicting the utilization of Skilled Birth Attendants, but maternal education does not.

5.1.4 Comparison of results of relationship between Socio-Demographic characteristics and trimester mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.4 shows the relationship of all the socio-demographic characteristics of the respondents and the trimester that mothers started attending ANC clinic both at the Bivariate and Multivariate levels of analysis to find out what predicts utilization of maternal health care services.

Table 5.4: Comparison of results of relationship between Socio-Demographic characteristics and trimester that mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>0.001</td>
<td>0.982</td>
</tr>
<tr>
<td>Marital Status</td>
<td>0.224</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>0.941</td>
<td>0.625</td>
</tr>
<tr>
<td>Respondents education</td>
<td>0.803</td>
<td>0.669</td>
</tr>
<tr>
<td>Parity</td>
<td>0.302</td>
<td>0.860</td>
</tr>
</tbody>
</table>

Note: p values *: p \leq 0.05 **: p \leq 0.01

From Table 5.4, it is evident that all the socio-demographic characteristics have no significant bearing on the trimester that women start attending antenatal clinic for their check-ups both at the Bivariate and Multivariate levels of analyses.

5.2 Conclusion

The findings of this study confirm that a woman’s marital status, religious affiliation and parity are strong predictors of institutional delivery service utilization. Further, mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the
number of visits that the mothers make to the health facility and lastly marital status, religious affiliation and parity strongly predict utilization of SBA’s. In addition, Parity proved to be a strong predictor of utilization of almost all the four maternal health care services apart from trimester that women started attending ANC clinic as it predicts their utilization both at the bivariate and multivariate level analysis at 95.5% confidence interval.

More women who are unmarried, those affiliated to non-Christian faiths, low parity women and those aged 28 years and above utilize maternal health care services more.

5.3 Recommendations

Evidence from this study enables making of suggestions and recommendations in three vital areas. First, the findings have some implications on the formulation of public health policies that will lower maternal morbidities and mortalities by improving utilization of MHCS. Second, it has practical implications on public health care practice and lastly it has implications for further research to uncover whatever has not been researched on in this study and others and thus update sociological knowledge on this important topic to help reduce maternal morbidities and mortality.

5.3.1 Recommendations for Policy

1. It is recommended from the findings of this study that stakeholders in maternal health care such as the National and County governments and the Civil Society Organizations make deliberate policies that will involve women aged 28 years and above as role models to sensitize other women on the importance of making the required number of ANC visits.
2. Policy provisions can also be developed by county governments and the civil society organizations to enhance women utilization of maternal health care services through an incentive and reward system to those women who make the required ANC visits and deliver in institutional care or under SBA supervision.

3. It is recommended that the national government come up with a policy that will ensure that maternal health care services are provided in most public health care facilities on a daily basis and not on specific days so that expectant women can access the services whenever they need them.

4. Further, deliberate policy should be formulated to encourage county governments to have ANC facilities at sub county levels. Alternatively, it can be a matter of policy, especially at the county government level that most health facilities should have at least a delivery room and trained personnel to provide an opportunity for expectant women to access professional ANC services and deliver under the care of professional staff. Such a policy will enhance women delivery under professional care reducing maternal morbidity and mortality and that of their new born babies.

5. It is recommended through the Ministry of Education, Science and Technology that the government strengthen affirmative action as a matter of policy to ensure that girl child education is prioritised in order to improve educational standards of women. This is envisioned as a long term policy strategy that will provide them with avenues and opportunities of acquiring information about use and importance of utilizing maternal health care services.
6. It is recommended that public health policy on awareness on the importance of utilization of institutional delivery service be initiated with a clear focus on high parity women, women with low education levels and women who professed Islam and ATR. Such a policy strategy can be a panacea for ensuring enhanced utilization of institutional delivery to this segment of the population especially in the study area.

5.3.2 Recommendations for Practice

1. With regards to the prevailing pattern of late and irregular antenatal clinic attendance, it is recommended that there be awareness creation by maternal health care stakeholders such as governments and NGOs on (ANC timing) when mothers should commence their ANC visits and the number of visits they should make until they give birth.

2. It is recommended that there be awareness creation by the National and County governments, NGOs and FBOs on the importance of using institutional delivery service or skilled midwifery assistance/skilled birth attendance at every child birth as it helps in reducing maternal and child deaths.

3. It is recommended to health and development workers that improving community awareness and perception on skilled providers and their care through community meetings by targeting women who prefer non skilled health care providers and those who lack awareness on the importance of utilization of maternal health care
services to themselves and their unborn children will help in reducing maternal and child deaths.

4. It is recommended that a doctor be posted to serve in the district as most mothers said they would like to be attended to by a trained medical doctor and only Clinical Officers and nurses were found at their work stations during the study period.

5. It is recommended that at least one ambulance should be supplied to the district and it be stationed at a central facility where it can easily coordinate in case maternal emergencies occur.

6. It is recommended that efforts be made by the health providers to ensure patients privacy during ANC and delivery care is kept to improve institutional delivery thus enhancing utilization of a major maternal health care service thus reducing maternal mortality.

5.3.3 Recommendations for Further Research

1. Given the high maternal morbidity and mortality not only in the study area but in Kenya and the region, it is prudent for researchers to understand the why with regard to the persistency of the problem and the how best can governments and the civil society mitigate the problem.

2. It is recommended that further research be carried out to establish why is it that women who profess Islam make the required (four and more) number of ANC visits but rarely have Institutional delivery service utilization.
3. More research is also needed to bring out the rural urban differential in not only maternal health care utilization but the differential factors with significance influence on ANC visits and institutional delivery.

4. Further research is also prudent to focus on other determinants of maternal health care utilization not considered in this study. Understanding the multiplicity of factors with an influence on maternal health care utilization is key in the development of interventions that will work in reducing maternal morbidity and mortality including that of their infants.
REFERENCES


Appendix 1: Consent Form

CONSENT FORM

PART 1: INFORMATION SHEET

I am Stanley Wechuli Wanjala a postgraduate student at Pwani University registration number C50/PUC/2098/11 and E-mail address: (stanleywanjala@gmail.com) supervised by Professor Halimu Suleiman Shauri- E-mail address hshauri@yahoo.com. I am carrying out a research titled “Determinants of Maternal Health care Utilization in Ganze District, Kilifi County of Kenya.” I am going to give you information about all what the research entails and invite you to be part of this research as a respondent. If you have any questions later, you can ask.

Purpose of research

Maternal and child health are key health issues in the world. The reason I am doing this research is to find out the factors that affect utilization of maternal health care services and to establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care utilization in Ganze district. By so doing, I will be able to advice the government and other health stakeholders on best practices in maternal health and help in policy formulation.

The reason why I am inviting you to be a respondent is because I am inviting all women between the ages of 18-49 years to participate in this research. Your participation in this research is entirely voluntary- It is your choice whether to participate or not.

The information that you give during this research will be kept confidential. Information about you that will be collected during the research will be put away and no one but the researcher (I) will be able to see it. Any information on you will have a number on it instead of your name for confidentiality purposes. You can ask any questions regarding the study or your participation in this study.

PART 2: CERTIFICATE OF CONSENT

I have read the foregoing information or it has been read to me. I have had the opportunity to ask questions about it and any questions that have been asked have been answered to my satisfaction.

I consent voluntarily to participate as a respondent in this research.

Name of participant: ____________________________________________________________

Signature of participant: ________________________________________________________

Date: ________________________________________________________________________
Appendix 2: Interview Schedule

DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN GANZE DISTRICT, KILIFI COUNTY OF KENYA

INTERVIEW SCHEDULE

Dear respondent,
Please answer the questions to the best of your understanding. Your cooperation in this study is highly appreciated and all the information you provide will be treated with utmost confidentiality. Thank you for your cooperation.

Name of Health Facility: __________________________ ________________________
Category of Facility: [ ] Dispensary [ ] Health Centre [ ] Sub-District Hospital [ ] District Hospital
Ownership: [ ] Government [ ] Private for Profit [ ] Faith Based [ ] NGO/CBO
Division: _________________________________________ ______________________
Location: _________________________________________ _____________________
Sub-Location: _____________________________________ ______________________

PART I: SOCIO - DEMOGRAPHIC CHARACTERISTICS

Q1. Could you please tell me your age?
   a) 18-22 years [ ]
   b) 23-27 years [ ]
   c) 28-32 years [ ]
   d) 33-37 years [ ]
   e) 38-42 years [ ]
   f) 43-47 years [ ]
   g) 48-52 years [ ]

Q2. What is your marital status?
   a) Single [ ]
   b) Married [ ]
   c) Divorced [ ]
   d) Widowed [ ]
   e) Separated [ ]
   f) Other (State)____________________________

Q3. What is your religious affiliation?
   a) Christian (Catholic) [ ]
   b) Christian (Protestant) [ ]
   c) Christian (SDA) [ ]
   d) Jewish [ ]
   e) Muslim [ ]
   f) Hindu [ ]
g) African Traditional Religion

Q4. What is your level of education?
   a) Non Formal Education
   b) Some primary education
   c) Primary school Completed
   d) Some Secondary education
   e) Secondary school completed
   f) University (Bachelors)
   g) Other (State) ________________________________

Q5. If married, or in a stable relationship, could you kindly state your spouse’s level of education?
   a) Non Formal Education
   b) Some primary education
   c) Primary school Completed
   d) Some Secondary education
   e) Secondary school completed
   f) University (Bachelors)
   g) Other (State) ________________________________

Q6 (a) If have some level of education, have you undergone any formal professional training since completion/dropping out of school?
   a) Yes
   b) No
   (b) If Yes State which one(s)
       ________________________________
       ________________________________
       ________________________________

Q7. What is your main source of income?
   a) Farming
   b) Government employee
   c) Employment private sector
   d) Employment NGO/CBO
   e) Employment FBO
   f) Small business person
   g) Casual Employee
   h) No source of income at the moment
   i) Other (State) ________________________________

Q8. What would you consider as the main source of income for your spouse/partner?
   a) Farming
   b) Government employee

---

1 Traditional Religion include nominal Christian religions such as Akorino, Legio Maria, Roho Msalabwa, Dini ya Msambwa etc
Q9. What is your average monthly earning from all your sources of income?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8000 to 10,000 [ ]
   f) 10,0000 to 12,000 [ ]
   g) 12001 to 14000 [ ]
   h) 14001 to 16000 [ ]
   i) 16000 to 18000 [ ]
   j) 18001 to 20000 [ ]
   k) KShs. 20001 or more (State amount) ____________________________

Q10. What is the approximate average monthly earnings of your spouse or partner from all the sources?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8000 to 10,000 [ ]
   f) 10,0000 to 12,000 [ ]
   g) 12001 to 14000 [ ]
   h) 14001 to 16000 [ ]
   i) 16000 to 18000 [ ]
   j) 18001 to 20000 [ ]
   k) KShs. 20001 or more (State amount) ____________________________

Q11. (a) How many children do you have in total? (Indicate number by Gender)
      Males: ___________ Females: ___________ Total: ___________
      (b) Could you kindly indicate their age beginning from the eldest to this one?
<table>
<thead>
<tr>
<th>Child number</th>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q 12. Who makes the decision for you to seek maternal health care?**
- Self [  ]
- Husband [  ]
- Husband and me [  ]
- If other explain___________________________

**SECTION B: KNOWLEDGE OF ANC**

**Q1. How did you first know about ANC?**
- Through friends [  ]
- School [  ]
- Hospital [  ]
- Others [  ]

**Q2. Are you aware of the services rendered at ANC Clinic?**
- Yes [  ]
- No [  ]

**Q3. ANC helps detect complications during pregnancy**
- Yes [  ]
- No [  ]

**Q4. ANC helps reduce maternal mortality and morbidity**
- Yes [  ]
- No [  ]

**SECTION C: ACCESS TO REPRODUCTIVE HEALTHCARE**

**Q1. Have you ever delivered any of your children in the hospital?**
- Yes [  ]
- No [  ]
Q2. Kindly indicate the place of birth of your children beginning from the first born to the last born. (1=Hospital with the help of a trained health professional; 2=Home with the help of Traditional Birth Attendant; 3= At home alone or with the help of a relative; 4=At the Traditional Birth Attendants special clinic/home; 5= On the way to hospital with the help of a stranger/relative; 6=Other (State))

<table>
<thead>
<tr>
<th>Child number</th>
<th>Place of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
</tbody>
</table>

Q3. (a) Reflecting back on your first pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one) ________________________________ ______________________

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)
___________________________________________________ ______________________
___________________________________________________ ______________________
___________________________________________________ ______________________

(c) How many visits did you make to the ante natal clinic before the delivery of your first born child?
___________________________________________________ ______________________

(d) How many visits did you make to the post natal clinic after the delivery of your first born child?

Q4. (a) Reflecting back on your last pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one) ________________________________ ______________________

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)
___________________________________________________ ______________________
___________________________________________________ ______________________
(c) How many visits did you make to the ante natal clinic before your latest delivery?
___________________________________________________

(c) How many visits did you make to the post natal clinic after your latest delivery?
___________________________________________________

Q5. How far is the nearest clinic offering maternal health services? *(How long does it take for an adult to walk to the facility?)* NB: one Kilometre may require 15 minutes of walk.
___________________________________________________

Q6. In your view, is the distance to the facility a concern? *(Explain your answer)*
Yes [  ]
No [  ]
Reason:
___________________________________________________

Q7. In your view, is the attitude of the health care providers a concern? *(Explain your answer)*
Yes [  ]
No [  ]
Reason:
___________________________________________________

Q8. In your view, does your religion influence how you seek ANC services? *(Explain your answer)*
Yes [  ]
No [  ]
Reason:
___________________________________________________

Q9. When visiting the nearest health facility during your pregnancy clinic appointments, what was the predominant means of transport used? *(Probe for cost and duration in minutes to facility)*

<table>
<thead>
<tr>
<th>Means</th>
<th>Tick one used</th>
<th>Cost (KShs.)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Motorcycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bicycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Own/family Motorcycle
5. Own/family bicycle
6. Private car/vehicle
7. Public Service vehicle
8. Other (State)_____________

Q10. In the facility you visited (for those who did not visit, the nearest healthcare facility), what maternal healthcare services does that facility offer? (Kindly indicate whether those attending received the services)

<table>
<thead>
<tr>
<th>Service</th>
<th>Availability</th>
<th>Received service in last pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasound services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11. During your last visit to the maternal health care facility, did you receive information on the following services?

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foetal abnormality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your health status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q12.(i) are you aware of family planning methods?
   a) Yes [ ]
b) No [  ]
(ii) Have you ever used any family planning method?
   a) Yes [  ]
   b) No [  ]
   (iii) If YES which method have you used? (Probe whether he is currently using the method)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Ever Used</th>
<th>Currently Using</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pills (Postinor 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IUD (intrauterine device)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Norplant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Condoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sexual Abstinence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Tubal ligation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Calendar/safe days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13. (i) Have you ever stopped using any of the family planning methods at any one time?
   Yes [  ]
   No [  ]
   (ii) If you have ever stopped, kindly provide reason for your decision

________________________________________________________________________
________________________________________________________________________

Q14 Are you aware of any taboos related to child birth in your community?
   Yes [  ]
   No [  ]

If yes, list them
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

b) Do you believe in these taboos?
   Yes [  ]
   No [  ]

If yes, which taboos do you believe in?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Perceptions: Maternal and Child health practices

Q1. When visiting the nearest health facility during your pregnancy clinic appointments, how many minutes did you wait before the healthcare provider attended to you?

Q2. Are you happy with the time you spent with the healthcare provider during your appointments?
   - Yes [ ]
   - No [ ]

   a) If yes, why?

   b) If No, would you prefer to have?
   - A lot more time [ ]
   - A little more time [ ]
   - Time is about right [ ]

   b) Are you happy with the facility space?
   - Yes [ ]
   - No [ ]

   Explain______________________________________________________________________________

   c) Are you happy with the facility neatness?
   - Yes [ ]
   - No [ ]

   Explain______________________________________________________________________________

   d) Who is your preferred gender of provider?
   - Male [ ]
   - Female [ ]
   - No preference [ ]

   Explain______________________________________________________________________________

   e) Who is your preferred type of provider?
   - Doctor [ ]
   - Nurse [ ]
Midwife [ ]
Traditional Birth Attendant [ ]
A combination [ ]
No preference [ ]

Explain__________________________________________________________________________

f) Would you come back to this facility?
Yes [ ]
No [ ]
Don’t know [ ]
Give reasons for your answer
__________________________________________________________________________

__g) Will you recommend this facility to others?
Yes [ ]
No [ ]
Don’t know [ ]
Give reasons for your answer
__________________________________________________________________________

Q3. Are you happy with the privacy that you were accorded during the consultation with the health care provider?
Yes [ ]
No [ ]

Q4. How would you rate the following services that you received at the health facility?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good 1</th>
<th>Good 2</th>
<th>Fair 3</th>
<th>Poor 4</th>
<th>Very poor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of food served</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reception upon arrival at the health facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude of medical personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of equipments/facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q5. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your first visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good 1</th>
<th>Good 2</th>
<th>Fair 3</th>
<th>Poor 4</th>
<th>Very poor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>Very good</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very poor</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------</td>
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<td>------</td>
<td>------</td>
<td>-----------</td>
</tr>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q6. If you were given another option (healthcare facility) in your first visit, would you have still attended this facility?
   - Yes [ ]
   - No [ ]

Explain__________________________________________________________

Q7. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your last visit?
<table>
<thead>
<tr>
<th>Service</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
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<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q8. If you were given another option (healthcare facility) in your last visit, would you have still attended this facility?

Yes [ ]
No [ ]

Explain_______________________________________________________________

Q9. Any additional comments

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Thank you for your cooperation.
Appendix 3: Certificate of Ethical Approval

NACOSTI ACCREDITED

ETHICS REVIEW COMMITTEE
ACCREDITED BY THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY
AND INNOVATION (NACOSTI, KENYA)

CERTIFICATE OF
ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:
Mr. Stanley Wechuli Wanja la

REFERENCE NO:
ERC/MA/003/2014

ENTITLED:
Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya

TO BE UNDERTAKEN AT:
Ganze, Kilifi, Kenya

FOR THE PROPOSED PERIOD OF RESEARCH
HAS BEEN APPROVED BY THE ETHICS REVIEW COMMITTEE
AT ITS SITTING HELD AT PWANI UNIVERSITY, KENYA
ON THE 15TH DAY OF JANUARY 2014

CHAIRMAN

SECRETARY

LAY MEMBER

15 JAN 2014
Appendix 4: Graduate School Research Authorization

Pwani UNIVERSITY
SCHOOL OF GRADUATE STUDIES
P.O. Box 195 - 80100
KILIFI, KENYA

Ref: PU/SGS/PRAL/83/vol.1

16th January, 2014

Mr. Stanley W. Wanjala
School of Humanities and Social Sciences
PWANI UNIVERSITY

SUBJECT: RESEARCH AUTHORIZATION

Following approval of your Masters research proposal by the Ethics Review Committee on 15th January, 2014, we hereby write to formally grant authorization for you to conduct research for a Master’s thesis entitled “Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya.”

You are advised to collect your original Certificate of Ethical Approval from the Ethics Review Committee office.

We wish you all the best as you embark on this critical stage of your Masters programme.

Yours faithfully,

[Signature]
Prof. Mlawa C. Mwatate
DEAN, SCHOOL OF GRADUATE STUDIES

Cc:
✓ Deputy Vice Chancellor (ASA)
✓ Dean, School of Humanities and Social Sciences
✓ Chairman, Social Sciences
Appendix 5: Research Authorization from Department of Health

COUNTY GOVERNMENT OF KILIFI
DEPARTMENT OF HEALTH
KILIFI COUNTY HOSPITAL

Telephone (041) 7522777
Fax: (041) 7522025
Email: kdh@komri-wellcome.org

When Replying/Telephoning quote
Ref No.: ST.1/38/VOL.1/

OFFICE OF THE MEDICAL
SUPERINTENDENT
KILIFI COUNTY HOSPITAL
P. O. Box 9 - 80108
KILIFI
DATE: 31st March, 2014

Stanley Wechuli Wanjala
Pwani University
PO Box 195-80108
Kilifi County,
KENYA

Dear Mr Stanley. W. Wanjala,

RE: AUTHORIZATION TO CARRY OUT STUDY IN GANZE

The research committee of health Kilifi has received your request to carry out a study on “Determinants of Maternal Care Service Utilization in Ganze District, Kilifi County of Kenya”.

After going through the proposal, we grant you approval to proceed with your research. This should not exceed a time period of 90 days. Please note you can always ask for an extension, should you need it.

Upon completion of the study, you will be required to share your results with the County Health Management Team.

Good luck!

Dr Barbara Mambo, Chairperson
Kilifi County Research Coordination Committee
KILIFI

Cc:
The Executive Secretary of Health- KILIFI COUNTY
The Director of Health Services-KILIFI COUNTY
Appendix 6: Map of Ganze District
DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN
GANZE DISTRICT, KILIFI COUNTY OF KENYA

STANLEY WECHULI WANJALA

C50/PUC/2098/11

A thesis submitted in partial fulfilment of the requirements for the Degree of Master
of Arts of Pwani University

© August, 2015
DECLARATION

Declaration by the Student

This thesis is my original work and has not been presented for a degree in any other University or any other award

Signature.........................................             Date..........................................

Stanley Wechuli Wanjala
C50/PUC/2098/2011

Declaration by the Supervisors

We confirm that that the work reported in this thesis was carried out by the candidate under our supervision. No part of this Thesis may be reproduced without the prior written permission of the author and/or Pwani University

Signature.........................................             Date..........................................

Prof. Halimu Suleiman Shauri; PhD
Sociologist; Department of Social Sciences
(Pwani University)

Signature.........................................             Date..........................................

Dr. Francis Wokabi; PhD
Philosopher; Department of Philosophy and Religious Studies
(Pwani University)
DEDICATION

This thesis is dedicated to the pillars of my life: God, my adoring parents who remain my source of inspiration, my siblings and fiancée.
ACKNOWLEDGEMENT

First, my heartfelt gratitude to my supervisors: Prof. Dr. Halimu Suleiman Shauri and Dr. Francis Gikonyo Wokabi. Thank you for your sage advice, guidance, encouragement and intellectual input from the initial to the final stage of this thesis development that enabled me to have an in-depth understanding of the subject under study. To my parents, thanks for the never ending love and unwavering support. My fiancée Yvonne Kuhnke, thanks for your unconditional love, encouragement and understanding even on days that you could not get my full attention. My colleague Bonventure Obeka, your constructive and insightful criticism, collaboration and willingness to assist when called upon have been tremendous assets. My colleagues and lecturers in the Department of Social Sciences, study respondents and medical staff from health facilities in Ganze District, thank you for making the study possible.
ABSTRACT

Maternal health care service utilization is an important health issue related to both maternal and child survival as it reduces maternal mortality and morbidity as well as improving the well being of mothers and their children before, during and after birth. Considering low utilization of maternal health care service especially in Sub-Saharan Africa, understanding what determines utilization becomes important. This study set out to examine determinants of maternal health care service utilization by women of reproductive ages (18-49 years) with a view to enhancing the achievement of Millennium Development Goal (MDG) number five (5). Four dependent variables: place of delivery, antenatal care, skilled attendance at birth and trimester women attended Antenatal Clinic (ANC) as well as six independent variables representing predisposing characteristics (mothers age at birth, marital status, religion, educational attainment, parity) and enabling factors (husbands educational attainment, income levels) were selected. Survey research design was used in data collection and the main data collection tool was an interview schedule. Multi-stage cluster sampling was used in sampling the health care facilities and convenient sampling was used to sample the respondents. Both descriptive and inferential statistics such as logistic regression analysis were applied to the analysis of the collected data. The key findings of the study show that religion, parity and maternal education were significant predictors of women’s place of delivery. Further, maternal age, marital status, and parity were found to be significantly associated with the number of ANC visits women make to the clinic. Marital status, religion and parity are all related to use of a skilled Birth Attendant at birth. Parity emerged to be the strongest predictor among all the other indicators of maternal health care service utilization considered in the study. In conclusion, the study was able to find out factors that affect utilization of maternal health care services in Ganze district thus achieving the study objective. Strategies to promote the utilization of Maternal Health Care Services should thus focus on the relevant predictors established in the models based on the binomial regression analyses. The findings of the study may help the Ministry of Health, policy makers and health related agencies and stakeholders to design appropriate and cost-effective intervention programmes targeting areas with most needs. This may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality while enhancing reproductive health and resource efficiency. Lastly, this study aims at stimulating further research in this area, thus bridging knowledge gaps and updating scientific knowledge on this important topic.
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List of Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

ATR – African Traditional Religion

ANC – Antenatal Care

CBS – Central Bureau of Statistics

ERC – Ethical Review Committee

FBO – Faith Based Organization

GDP – Gross Domestic Product

GoK – Government of Kenya

HBM - Health Belief Model

HIV – Human Immunodeficiency Virus

KDHS – Kenya Demographic and Health Survey

KHHEUS – Kenya Household Expenditure and Utilization Survey

KNBS – Kenya National Bureau of Statistics

KNHA - Kenya National Health Accounts

MDG’s – Millennium Development Goals

MHCS – Maternal Healthcare Services

MLR – Multivariate Logistic Regression
MoH – Ministry of Health

NACOSTI – National Commission for Science, Technology and Innovation

NCAPD- National Coordinating Agency for Population and Development

NGO – Non-Governmental Organization

OBA- Output Based Approach

PHC- Primary Health Care

PNC – Postnatal Care

POD – Place of Delivery

SBA – Skilled Birth Attendant

SDC – Social Demographic Characteristics

SMI – Safe Motherhood Initiative

SPSS – Statistical Package for Social Sciences

TBA – Traditional Birth Attendant

TI- Transparency International

UN – United Nations

UNFPA – United Nations Fund for Population Activities

UNICEF – United Nations International Children’s Emergency Fund
WB – World Bank

WHO – World Health Organization
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Three out of the eight Millennium Development Goals (MDG’s) relate to health. Goal number four is aimed at reducing child mortality rates, goal number six focuses on combating HIV/AIDS, malaria and other diseases and goal number five, which is the focus of this study, is aimed at improving maternal health by reducing maternal mortality by three quarters (75%) and achieving universal access to reproductive health between 1990 and 2015. This goal is monitored by two indices namely: maternal mortality ratio and proportion of births attended by skilled health personnel.

Globally, in the year 2008, there were an estimated 358,000 maternal deaths and of this, the developing world accounted for (355,000) or 99% (WHO, UNICEF, UNFPA, & The World Bank, 2010). These figures have financial implications for the health sector of affected countries. On the one hand, high income countries with high standards of living spend an average of 7.0% of Gross Domestic Product (GDP) on health and on the other hand, low income countries, with low standards of living, spend an average of only 4.2% on the health sector (Cieza & Holm, 2010). Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit, Dolea, & Braichet, 2010).

In the year 2000, 251,000 maternal deaths occurred in Africa and 40% of the deliveries were attended by a Skilled Birth Attendant (World Health Organization, 2005). Sub-
Saharan Africa accounted for slightly more than half (270,000) of the maternal deaths in 2005. An increase in maternal deaths over the years can be observed. Nearly three fifths (204,000) of the maternal deaths in 2008 occurred in the sub-Saharan Africa (WHO et al., 2010). Though there is a slight drop in maternal mortality rates from 2005-2008, the number is still high.

Kenya is one of the countries that suffered 65% of maternal deaths in 2008. It accounted for 7,900 (2.2%) of the global maternal deaths (WHO et al., 2010). According to the 2008-09 Kenya Demographic and Health Survey (KDHS) maternal mortality in Kenya remains high at 7.9% as only 44% of births are managed by health professionals and 43% are delivered in health facilities. These statistics clearly show that over half (56%) of deliveries are done by non-professionals and more than half (57%) of deliveries are done outside healthcare facilities. Between the periods 2003 – 2008/09, there was a rise in maternal mortality rates in Kenya from 0.6% to 0.8%, indicating an increase of 0.2% (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). This is not a good indication especially that MDG number five aims at improving maternal health care.

According to an official in the Ministry of Public Health, (Masha Joseph, 2011), quoted in the Standard Newspaper of Wednesday 11th May 2011, only 44% of deliveries in the Coastal Region are done in hospitals with many pregnant women relying on Traditional Birth Attendants (TBAs), while about 70% of 170,000 women still give birth at home. The Kilifi District Strategic Plan 2005-2010 points out that accessibility of health services was low and over half (57%) of the population lived over five kilometres to the nearest health facility (National Coordinating Agency for Population and Development, 2005). It is
against this background that a study of the determinants of maternal health care utilization in Ganze district in Kilifi County, Coastal Region of Kenya was mooted.

1.2 Statement of the Problem

The MDG’s are fresh in our minds and we have approached 2015. Millennium Development Goal number five, in particular, was aimed at reducing maternal mortality rate by 75.0% between 1990 and 2015 and to achieve universal access to reproductive health. The fact that the KDHS 2008-2009 reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities is a clear indication that there is underutilization of maternal health care professionals and facilities in the country, especially in the rural areas. What determines maternal health utilization therefore needs to be understood to improve this situation with a view of achieving MDG number five. In fact, it is very clear throughout the literature reviewed that there is a dearth of recent data on the determinants of maternal health care utilization. This is despite the fact that maternal healthcare services utilization is essential for the enhancement of maternal and child health. Accordingly, little was known about the current magnitude of use and factors influencing the use of maternal healthcare services, especially in Ganze district where the study was conducted. This study therefore examined the factors that determined the utilization of maternal health care service in Ganze district in Kilifi County, Coastal Region of Kenya.

1.3 Purpose of the Study

The purpose of the study was to examine factors that influence maternal health care service utilization by women of reproductive ages (18-49 years) with a view of enhancing the
achievement of MDG number five (5).

1.4 Specific Objectives

On the basis of the study’s purpose, the objective of the study was to:

1. Find out the influence of socio-economic and demographic factors on utilization of maternal health care services.
2. Establish the facility-specific factors that influence the utilization of maternal health care services in Ganze district.
3. Establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care service utilization in Ganze district.

1.5 Research Questions

1. What is the influence of socio-economic and demographic factors on utilization of maternal health care services?
2. Why are some healthcare facilities utilized more than others by women of reproductive ages (18-49 years) seeking maternal health care services?
3. What is the influence of the preferences and perceptions of women of reproductive ages (18-49) with regard to ANC services offered at the healthcare facilities in Ganze district on maternal health care utilization?

1.6 Significance of the Study

The results of this study could be beneficial as it was envisaged to add to the existing body
of scientific knowledge on the factors that influence maternal health care service utilization and the challenges that women face as they seek maternal health care services. This may act as a springboard for further research in this area and thus bridge knowledge gaps and update scientific knowledge on this important topic.

To the government, Ministry of Health as well as other health providers, findings of this research may help them work towards policy and practical improvements in provision of maternal health care services thus reducing the number of maternal deaths consequently contributing to the attainment of MDG number 5.

Third, this research may help the government and other key health care stakeholders avoid wastage of resources because they will be able to know the determinants of maternal health care service utilization. Accordingly, appropriate and cost-effective intervention programmes can be designed and targeted to the areas with most needs. Significantly, this may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality and enhancement of reproductive health with desirable consequences on the health status of women and the population.

1.7 Scope and Limitations of the Study

1.7.1 Scope of the Study

The study was carried out in Ganze District of Kilifi County in the Coastal Region of Kenya.
1.7.2 Limitations of the Study

This was a survey research and as such attempted to understand study variables at one point in time. Accordingly, the study was limited in explaining causality and trends over time than a longitudinal or control group design on the determinants of maternal health care services utilization.

Due to ethical and legal considerations, the study only focused on women aged (18–49 years). Thus, the study was limited in that the views of women below the age of 18 years and above 49 years were not included in the study and thus research results cannot be generalized outside of the sampled population of women aged (18–49) years old.

The study was limited in that the researcher had to employ the services of an interpreter because some of the study respondents did not understand English and so interviews were conducted in either Kiswahili or Kigiryama.

1.8 Definition of Key Concepts used in the Study

**Antenatal care:** Care given to a pregnant woman from the time of conception to the onset of labour

**Distance:** The location of the health care facility in relation to the patient’s place of residence

**Grandmultiparae:** A woman who has given birth to five or more children

**Maternal Morbidity:** Is defined as “chronic and persistent ill-health occurring as a consequence of complications of pregnancy and childbirth” (Ogunjuyigbe & Liasu, n.d.)
Maternal Mortality or Maternal Death: Is “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes” (“WHO | Maternal mortality ratio (per 100 000 live births),” n.d.)

Multiparae: A woman who has given birth to two or more children

Nulliparae: A woman who has never given birth to a child

Parity: Birth order in a nuclear family

Postnatal care: Care provided following childbirth to both the mother and the infant

Primiparae: A woman who has given birth to only one child

Providers: Health staff at the selected Maternal and Child Health (MCH) facilities serving in ANC at the time of the study and those who were available for interview

Skilled Birth Attendant: Is “an accredited health professional- such as a mid-wife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborns)” (World Health Organization, 2004b).

Skilled Birth Attendance: Process by which a pregnant woman and her baby are provided with adequate care during pregnancy, labour, birth and postpartum and immediate newborn periods (Graham et al., 2001).
**Trimester:** “One of the three divisions of three months each during pregnancy, in which different phases of foetal development take place” ("Trimester definition - MedicineNet - Health and Medical Information Produced by Doctors," n.d.)

**Utilization of maternal health care services:** Utilization of maternal health care services in this study was described in relation to the requirements by World Health Organization (1994; 2004) which only considers it medically satisfactory when:

- Women receive antenatal care during the first trimester of their pregnancy period
- Women undertake 4 or more antenatal visits before delivery of their children
- Women are attended to at delivery by trained medical personnel/practitioner
- Women deliver in a health facility

**Waiting time:** The duration of time (minutes) a mother has to wait before he/she is attended to by a medical professional
2.1 Utilization of Health Care Services

Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems, or achieving a positive body image (Cockerham, 2012). In this discourse, health care utilization refers to the use of health care services by people (Awoyemi, Obayelu, & Opaluwa, 2011). Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries (Mekonnen & Mekonnen, 2002). Thus, in order for an individual to utilize health services, they must have both physical access to a health facility and the health facility must also be able to provide the required services; the patient must also be able to pay for the health care services offered either through cash or by use of health insurance or any third party means (Shauri, 2010).

The 2005/2006 Kenya National Health Accounts (KNHA) report notes that the top two “key challenges to achieving better health status in Kenya” are “inequitable access to health services” and “shortage of qualified health workers, especially those with appropriate skills” (Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009). Access to care has most often been considered as an expression of the time or monetary costs associated with obtaining medical care, such as waiting time to get an appointment or to see a doctor or medical practitioners once in their offices, and distance one has to cover (Aday & Andersen, 1977).
Some researchers place emphasis on the idea that access as a concept is best considered in the context of whether the people actually in need of health care receive it or not (Taylor et al., 1975). People should try to distinguish between access and availability. The latter is the presence of health care resources in a given locality/area. Even though information on the number of physicians in an area may be available, we may still not know the accessibility of such health care providers in terms of the patients ability to pay the fees they are charged, the lack of transportation or traffic congestion typical of the place, the barriers resulting from ethnic discrimination, or office hours that cannot accommodate the patient’s own needs or schedules (Aday & Andersen, 1977).

Utilization of health services is a complex behavioural phenomenon, related to the availability, quality and cost of services, social structure, health beliefs and characteristics of the users (Chakraborty, Ataharasul, Chowdhury, Bari, & Akhtar, 2003; Ebuehi et al., 2006). More critical for this study, women’s utilization of maternal health care facilities is an important health issue with regard to the well being and survival of both the mother and the child during pregnancy, child birth and postpartum period and has implications on the maternal and child mortality rates in human society (Gazali et al., 2012; WHO, 2012).

In February 1987, three international organizations namely: United Nations Fund for Population Activities (UNFPA), the World Bank (WB), and World Health Organization (WHO) sponsored a global campaign in Nairobi in form of a conference to reduce maternal mortality. As a consequence, the Safe Motherhood Initiative (SMI) was adopted to reduce the high rate of women dying during pregnancy and childbirth. The event was
aimed at raising awareness about the numbers of women dying each year from complications of pregnancy and childbirth (Starrs, 2006).

The SMI recommended that all countries provide three types of maternity care services which are vital for all expectant women namely prenatal care, delivery care, and postnatal care (United Nations, 2000a). Prenatal care services include encouraging a woman with a normal pregnancy to make at least four visits to a skilled health attendant during her pregnancy (with more visits by women with pregnancy complications), and promoting information about maternal nutrition and iron supplements to reduce anaemia, underweight and under-nutrition among pregnant women and new mothers. To provide delivery care during childbirth, all member countries were recommended to promote deliveries in health facilities and to promote the attendance of skilled health personnel including a doctor and/or person(s) with midwifery skills who can diagnose and manage obstetrical complications as well as normal delivery (Pandey et al., 2011; Cohen, 1987).

More significantly to note in this thesis is that, while motherhood is often a positive and fulfilling experience, for many women it is associated with suffering, ill-health and sometimes even death (WHO, 2012). It is thus imperative that ways to mitigate factors responsible for low utilization of maternal services be developed. However, the development of effective strategies to curb maternal deaths hinges on the identification of factors responsible for low utilization of such services underscoring the need for the present research. Furthermore, even though such studies have been carried out in Kenya, no such study has been conducted so far in Ganze district.
2.2 Status of Health Care Utilization in the World

Although utilization is an important indicator of health seeking behaviour, health status, cost and quality of services, it is not necessarily guaranteed by the availability of health care facilities (Wamai, 2009). A report carried out by the World Health Organization (2010) in 39 countries reveals that in more than half of the 27 out of the 39 countries, utilization of health care facilities was only at public facilities and was skewed towards outpatient services. More so, in the Dominican Republic, Brazil, Nepal and the Philippines between 50-60% of hospitalizations were in public health care facilities (Saskena, Xu, Elovainio, & Perrot, 2010).

Health conditions are different for urban and rural areas. Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit et al., 2010). Indeed, a study carried out in Ethiopia shows that the coverage of maternity care services is very low and that utilization of maternal health care services is lowest in rural areas (Mekonnen & Mekonnen, 2002).

According to the findings of a study carried out in rural Zimbabwe on socio-economic status and health care utilization, all forms of health care tended to be utilized by those of high or medium-high socio-economic status rated (65%) of the study subjects. This clearly indicates that the socio-economic status of an individual affects his/her health care utilization behaviour. The report further shows that seventy-one (71%) percent of respondents utilizing health services were employed by the government, private sector (72%), the church (71%), Community Based Organizations (78%) and others (64%).
Health services tended to be utilized more by employed respondents. Only traditional health services were equally utilized by unemployed respondents accounting for 50% of the users (Kevany et al., 2012).

In Kenya, there is uneven distribution of health care facilities across the country’s eight regions. The central region has about double the number of facilities per population as compared to Nyanza and Western regions (Wamai, 2009). Health care utilization varies greatly across all the eight regions of the country. More precisely, North Eastern records the lowest health care utilization rate, with 63.4% of all those who reported being ill never seeking treatment in the health care facilities, which leaves only 36.6% seeking treatment whereas Nairobi region, which is the capital city of Kenya, having the highest rate (90.6%) of utilization.

According to the 2003 Kenya Household Expenditure and Utilization Survey (KHHEUS), of all those people reporting illness, 77.2% sought health care service thus leaving 22.8% not seeking health care service. It also shows an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people which translates to an annual utilization rate of 1.92 visits per person per year (Republic of Kenya, 2004).

It is important to mention that the urban population has a higher likelihood of visiting a health care facility (81.5%) when ill as compared to their rural counterparts (75.9%) despite the fact that the average cost for outpatient utilization in urban areas is twice that of rural areas (Republic of Kenya, 2004). Despite this scenario, people in the rural areas still don’t seek health care services very often. This indicates that cost still remains a barrier to utilization of health care facilities and services as health care costs (44%) and the long
distance to the health facility (18%) were cited as the main barriers to health care utilization by those who reported being ill (Republic of Kenya, 2004).

Females reportedly make 1.2 times as many outpatient visits per capita (2.1 visits per year) as did their male counterparts (1.7). Government facilities are utilized more for outpatient services accounting for 51% of the visits, private and mission facilities account for 27% and 8% of the visits respectively, while traditional healers account for a negligible proportion of services (1%). This disparity might be as a result of the distance one has to travel and the cost of seeking health care in the various facilities available (Republic of Kenya, 2004).

Some health facilities at the rural level lack essential resources and the basic assets available are either insufficient or dilapidated. Furthermore, most rural facilities do not even have wards to admit critically sick patients. Due to poor health infrastructure, patients walk for long distances to reach the available health care facilities. Despite the high demand from the community for health care services, most rural health facilities are still lagging behind in the delivery of services (Transparency International, 2011).

The lack of equipment and other core supplies has negative impacts on the performance of health facilities. Lack of adequate health facilities and poor infrastructure forces people to walk for long distances to seek health care services; leading to some patients resorting to alternative means of treatment. This has the potential of leading to underutilization of available health care facilities (Transparency International, 2011).
According to the Kilifi District Strategic Plan 2005-2010, there were 73 health facilities distributed throughout the district. The plan asserts that accessibility of health services was low and over one half (57%) of the population lived over five kilometres to the nearest health facility. The doctor-patient ratio was 1:100,000 population which is a manifestation of staff shortages in the area (The National Coordinating Agency for Population and Development, 2005).

Ganze district, like most rural areas in Kenya, has poor health service coverage and delivery (Transparency International, 2011). Most trained medical attendants including birth attendants prefer working in urban areas as opposed to rural areas and thus health facilities in rural areas are under-staffed (Epuu, 2010). This study was able to shed some light on the status of the health care system in Ganze District.

2.3 Global Trends in the Utilization of Maternal Health Care Services

Maternal and child health are both indicators to a society’s level of development as well as to the performance of the health care delivery system (Central Bureau of Statistics (CBS)[Kenya], Ministry of Health (MOH)[Kenya], & ORC Macro, 2004). A study carried out in Peru on the effects of education on utilization of maternal health care services shows that there is a strong positive relationship between education and the use of maternal health care services (Elo, 1992).

A woman’s autonomy or level of independence in decision making is important in explaining utilization of maternal and child health care services. Urban residence, and
husband’s education have all been found to have a positive relationship to antenatal care utilization (Woldemicael, 2007; Dairo & Owoyokun, 2010).

A cross sectional study in India by (T. R. Jat, Ng, & San Sebastian, 2011) on the factors affecting the use of maternal health services in Madhya Pradesh state found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services. Women in urban areas tended to use maternal health care services more than those living in the rural areas. The levels of skilled attendance at delivery and postnatal care decreased steadily with increased birth order (T. R. Jat et al., 2011). It was also found out that an increase in the education of the mother enhances the use of the three indicators of the use of maternal health services namely prenatal care, delivery care, and postnatal care. Finally, child parity seemed to affect the use of skilled attendance at delivery and postnatal care.

Another study by Mondal (2009) carried out in Bangladesh found out that the level of education (both of the wife and husband) increased the likelihood of seeking help from a qualified medical professional. Women who reside in urban areas had a higher odd of seeking medical assistance than those in rural areas (ibid). Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious taboos. Women from families with a high socio-economic status are more likely to receive treatment from a doctor or nurse.

From the above studies, we can be able to deduce that socio-economic status as indicated by, level of education (both of the wife and husband), place of residence and religion increase the probability that women of reproductive ages will utilize maternal health care
services. Interestingly though, no study has focused on whether the attitude of health care providers towards the patients affects maternal health care utilization. Additionally, no study has focused on the attitude of the health care practitioners towards their work and utilization of maternal healthcare services by pregnant women. It is within the confines of this study therefore to find out whether the attitude of health care providers towards their work and patients determines utilization of maternal health care services.

2.4 Maternal Health Care Utilization in Africa

A study carried out in Ethiopia on the utilization of maternal health care services found out that there was low coverage of maternity service in the country. The place of residence, woman’s education, marital status, religion, parity and number of children under five years were found to have an important influence on utilization of maternal health services by women of reproductive ages. There was high level of utilization of maternal health services among urban women compared with their rural counterparts (Mekonnen & Mekonnen, 2002).

Additionally, married women were observed to be more likely to use antenatal care than their unmarried counterparts. Religion was also found to be an important predictor of antenatal care utilization. Among urban women, utilization of antenatal care is higher for those with two or more children than for those with one child. On the other hand, utilization of delivery care services is lower for those with two or more children than those with one child (Mekonnen & Mekonnen, 2002).
In another study carried out in Ethiopia on factors influencing the use of maternal health care services, it was found out that education of women determines use of antenatal care in that utilization increased with education level. Religion also affects use of antenatal care in that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs. Marital status and religion also had an impact in determining the use of antenatal care (Mekonnen & Mekonnen, 2003; Mekonnen & Mekonnen 2002).

A qualitative study carried out in rural Gambia on access to emergency obstetric care found out that structural factors in maternal health care provision discourage women from seeking care. For instance, where pre-natal care was provided on specific days in each community during week days, it hinders other people from attending. There may exist difficulties in transportation, such as poor condition of the road, lack of readily available transport, inadequate means of transportation, poor provider attitude towards patients, fear of punishment by health care providers based on previous experiences or just gossip can lead to delays in the decision making process of visiting a health facility by patients (Cham et al., 2005).

A study carried out on the utilization of antenatal care services in a Nigerian teaching hospital found out that over two fifths (47%) of the women started attending antenatal clinic only in the third trimester of the pregnancy period despite the fact that antenatal care services in the state hospital that the study was carried out was offered free of charge (Peltzer & Ajegbomogun, 2005).
In another study conducted in Nigeria, the use of maternal health services was significantly related to the level of maternal education, maternal age and marital status. Higher use was positively related to knowledge of where the Primary Health Care (PHC) service was located. Respondents with more than 4 children underutilized available maternal health services and utilization of maternal health services by respondents was significantly related to satisfaction with quality of services received (Ebuehi et al., 2006). Women’s and husband’s education and place of residence have strong positive associations with health care utilization (Woldemicael, 2007).

In Africa, all the reviewed studies have focused on determinants of maternal health care utilization such as maternal education, religion, parity, marital status and residence. However, limited literature none has focused on whether distance from health care facility has an effect on the utilization of maternal health care services. Few studies have also been carried out to find out the effects of waiting time at the reception by the patients before being attended to and the utilization of the health facility. Thus, this underscores the need for the present study in trying to find out the influence of how far one resides from a health facility and utilization of the health facility and the effect of how long a mother waits before being attended to on the utilization of maternal health care. The study thus sought to know how socio-economic and demographic as well as facility specific factors influence utilization of Maternal Health Care Services (MHCS).

2.5 Utilization of Maternal Health Care Services in Kenya

The 2003 Kenya Demographic and Health Survey indicated that almost 90% of Kenyan women received antenatal care from a medical professional with 18% being attended to by
a doctor, 70% by a nurse or midwife while 10% received no antenatal care at all (Central Bureau of Statistics (CBS)[Kenya] et al., 2004).

In a study carried out in Kenya by Fotso et al., (2009), it was found out that women’s overall autonomy is insignificant in health seeking behaviour. Further, women with at least secondary education were more likely to deliver in a health facility in general or in an appropriate health facility compared to those with no education. The likelihood of delivering at a health facility in general and in the well equipped facilities in particular significantly decreases as parity increases.

Another study carried out using data from the 2003 KDHS found out that young women mostly used skilled professional assistance during delivery. Rural women were less likely to deliver with the assistance of either a Traditional Birth Attendant (TBA) or skilled professional. Women from rich households were more likely to deliver with a TBA or skilled professional. Educated women were more likely to deliver with assistance of skilled professionals as opposed to non-educated. Women with more than 2 children were less likely to deliver with the assistance of TBA or skilled professionals compared to those with 1 child (Ochako et al., 2011).

According to a study carried out in Nyanza region of Kenya, it was found out that the higher the parity, the greater the chances of a mother delivering at home. Conversely, health facility deliveries were greatest among births to lower parity women. A person’s level of education affects how a person utilizes the health facility. Rural residence is associated with higher likelihood of home deliveries where 63% of births occur at home. However, those residing in urban areas had a higher chance of health institution delivery
with 78% births delivered in health care facilities. Lower economic status at home, medium and high economic status health institution, older mothers’ and young health institution also affects place of delivery with high chance of mothers delivering at home. In a nutshell, the study found out that the place of delivery is affected by parity, level of education, place or residence, economic status and age of the mother (Owino, n.d.).

From the reviewed literature, most studies globally, in Africa and Kenya have focused on the determinants of maternal health care utilization such as education, religion, parity and age but a limited number of studies have been carried out in Ganze district which is the study area. This therefore underscores the need for the present research which seeks to establish the determinants of maternal health care utilization in Ganze district in the Coastal Region of Kenya.

### 2.6 Summary of Research Literature on Maternal Health Care Utilization

In as much as most reviewed studies have focused on the determinants of maternal health care utilization and inform us of the effects of maternal education, religion, parity, marital status and place of residence on maternal health care service utilization, no such focus is evident in the literature on the rural district of Ganze. This underscores the need for the present research in trying to establish the factors associated with maternal health care utilization in Ganze.

Furthermore, all studies that have been reviewed in this work only concentrate on socio-demographic factors such as maternal education, religion, parity, marital status and place of residence on maternal health care service utilization but there is less focus on the effects of
the attitude of health care practitioners on the utilization of maternal health care services. Accordingly, the study attempted to find out the effects of the attitude of health care practitioners and utilization of maternal health care services. More so, limited attention was paid to whether the distance of a health care facility from a patient’s residence affects their utilization of maternal health care services. This study sought to fill this important gap in knowledge.

It is proper to note that limited focus was also given to the effect of waiting time before one was attended to by a medical practitioner in hospital and the utilization of maternal health care facility. The present study went a step further in trying to find out whether the amount of time one has to wait before being attended to by medical personnel has an impact on the utilization of maternal health care services.

At another level, some studies have dealt with challenges faced by expectant mothers as they seek maternal health care services but none enumerates the coping strategies these women use to respond to the challenges. For instance, a qualitative study carried out in rural Gambia found out that structural factors in maternal health care provision discourage women from seeking care (Cham et al., 2005). Despite these challenges that have been enumerated, we are not told what coping strategies these women use to address such challenges.

Finally, it is proper to also note that almost all the literature reviewed has focused on the socio-economic factors that affect maternal health care utilization overlooking facility specific factors, perceptions and preferences of women of child bearing ages that may also affect maternal health care utilization. The study sought to establish facility specific factors,
perceptions and preferences of women that affect maternal health care utilization with an aim of making recommendations to improve the state of maternal and child health in the study area.

2.7 Theoretical Framework

This study was understood and conducted within the framework of Symbolic Interactionism. Symbolic Interactionism is a micro level theoretical approach that focuses on social interactions in specific situations. It has roots in the thinking of Max Weber (1864-1920), a German Sociologist and George Herbert Mead who emphasized understanding a particular setting from the point of view of the people in it (Giddens & Sutton, 2009).

The core principles of social interaction theory include meaning, language and thought. Meaning arises in the process of interaction between people and are handled in and modified through an interpretive process used by the person in dealing with things he/she encounters. Language is the vehicle through which meanings that arise out of our thoughts are transported in social interactions.

This theory was helpful in trying to understand the meanings that people attach to certain symbols so that they seek maternal health care services. The interpretation that people derive from the symbols and maternal health care utilization enabled the researcher to come up with strategies to improve maternal health care utilization and thus reduce maternal and child mortality. In looking at the factors that influence maternal health care utilization, the
researcher adopted the Health Belief Model (HBM) embedded within the larger purview of Symbolic Interactionism perspective.

2.7.1 Symbolic Interactionism and Illness Behaviour

Illness is social and exploring the meanings that patients give to symptoms and illness becomes important. Patients are the first to recognise their illness and to decide to visit a medical practitioner, who then takes a medical history. Patients describe illness on what society teaches them and this affects the diagnosis (Laurence & Barbara G, 2007).

For this study, it was assumed that women of reproductive ages (18-49 years) must be able to draw meanings from the symptoms and attach meanings to those symptoms in order for them to be able to utilize the available maternal health care services. Borrowing from the symbolic interactionist perspective and because illness is social, the study tried to explain maternal health care utilization using the HBM.

2.7.2 The Health Belief Model

The model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions; these include susceptibility, seriousness, benefits and barriers to behaviour and cues to action (Glanz et al., 2008). The HBM suggests that preventive action taken by an individual to avoid a disease is due to the perception that they are susceptible and the occurrence of the disease would have some severe personal implications (Cockerham, 2012). Thus, women may only seek maternal health care services if they deem that the pregnancy they are carrying may have a likelihood of affecting them.
HBM makes an assumption that by taking a particular action, susceptibility (likelihood) would be reduced. However, the perception of the threat posed by disease is affected by modifying factors which are demographic, socio-psychological and structural variables that can influence both perception and the corresponding cues necessary to instigate action (Cockerham, 2012).

Action cues are required because while an individual may perceive that a given action will be effective in reducing the threat of disease, the action may not be taken if it is further defined as too expensive, too unpleasant or painful, too inconvenient, or perhaps too traumatic (Cockerham, 2012). The women may seek for health care because by so doing they feel that they have reduced the likelihood of them experiencing difficulties during the entire period of pregnancy.

The likelihood of action involves a weighing of the perceived benefits to action contrasted to the perceived barriers. Therefore it is believed that a stimulus in the form of an action cue is required to “trigger” the appropriate behaviour. Such a stimulus could either be internal (perception of bodily states) or external (interpersonal interaction, mass media communication, or personal knowledge of someone affected by the health problem) (Cockerham, 2012). Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.

The model assumes that if a person regards himself/herself susceptible to a condition, believes that the condition would have potentially serious consequences, believes that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believes the anticipated benefits of taking action
outweigh the barriers to (or costs of) action, one is likely to take action he or she believes will reduce their risks (Glanz et al., 2008).

Additionally, it is important to note that health seeking behaviour has been observed to be based upon the value of the perceived outcome (avoidance of personal vulnerability) and the expectation that preventive action would result in that outcome (Cockerham, 2012).

Finally, the theoretical framework informs this particular study on the basis of the five constructs that make up the HBM. Thus, women may only utilize maternal health care services if they feel that the pregnancy they are carrying may have a likelihood of affecting their wellbeing and that by so doing they feel that they will reduce the likelihood of them experiencing difficulties during the entire period of pregnancy. Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.
2.8 Conceptual Framework

A conceptual framework is a concise description of the phenomena under study accompanied by a graphic or visual depiction of the major variables of the study (Mugenda, 2008).

Figure 2.1: Conceptual Framework of the correlates of maternal Health Care utilization
2.8.1 Behavioural Model of Health Services Utilization

The study utilized the behavioural model of health services utilization developed by Andersen and Newman (1973) to explain maternal health care utilization. It asserts that the utilization of health service is dependent on three sets of individual factors: predisposing factors, enabling resources and the illness levels of an individual (need for health service) (Andersen & Newman, 1973; Aday & Andersen, 1977; Andersen, 1995)

2.8.1.1 Predisposing factors

Predisposing factors reflect the fact that different people have a different likelihood/propensity to use health care services. They include demographic characteristics e.g. age and gender, the social structure which determines the social status of a person and his/her ability to cope with presenting problems in society. Social structure can be measured using indicators such as education, occupation, household size, number of previous pregnancies and health-related attitude. Health beliefs include attitudes, values and knowledge about the health and health services that might have an effect on the subsequent need and use of health services available (Andersen, 1995).

Looking at the study variables, the model helps in the analysis of the effects of the demographic variables which include; age, sex, marital status and parity on maternal health care utilization in the study area. This helps to understand why there are disparities in the utilization of maternal health care services. Socio-economic factors such as education level, income, occupation and family size help in knowing the social status of an individual and help in understanding how better the individual is equipped to deal with the health problem at hand. The cultural beliefs enable us to have a better understanding of the outlook towards
health and health services which might have an effect on the need and use for health care and health services among the study subjects.

2.8.1.2 Enabling Resources

Enabling resources deal with the means that make it necessary for individuals to utilize health care services even if they are predisposed to them e.g. income, access, and availability of health services. They may either be personal or community based and make health service resources available to individuals. Enabling conditions can be measured by indicators such as a person’s income, level of family insurance coverage or other source of third party payment for health care, whether or not the person has a regular source of health care, the nature of the regular source of care and the accessibility of the source of health care.

Community enabling characteristics include the amount of health facilities and personnel in a community. Thus, if resources are reasonably plentiful and can be used without queuing up they might be used more frequently. Analysing it from the economic viewpoint, one might expect people experiencing low prices for medical care to use more services. Other measures of community resources include region of the country and the rural urban nature of the community in which the family lives. These variables might be linked to utilization because of local norms concerning how medicine should be practiced or overriding community values which influence the behaviour of the individual living in the community (Andersen & Newman, 1973).
Focusing on service provider factors such as the availability of drugs, attitude of service providers, waiting time, availability of equipments and bed space all have an effect on how health care facilities will be used. All these service provider factors enable people utilize available health care facilities because if the services provided measure up to what the clients expect then they will utilize them. People’s occupation and income are also enabling factors for utilization of health care services because with a good income one is able to pay for the expenses incurred while seeking for care and one can also be able to buy health insurance policies which cover them whenever they fall ill and thus they can be able to seek for health care services. The quality of service offered and the effectiveness of the service provider also determine whether a patient will or will not utilize health care services. Where the services are effective patients will tend to utilize such services more.

2.8.1.3 Need

According to Andersen and Newman, the need factor is the most immediate cause of health service use (Andersen & Newman, 1973). An individual must perceive illness or the probability of it occurring for him/her to seek for health care. The levels of illness represent the most immediate cause for health service utilization. Perceived severity or number of episodes of diseases have a positive association with health care utilization. The model also makes the assumption of a clinical evaluation system because individuals seek care from formal medical systems.

Indicators of perceived illness includes the days that the individual is unable to function normally because the disease interferes with how he/she conducts his daily activities like going to work, going to school, playing with their peers or even taking the children to
school. Other measures of perceived illness include symptoms the individual experiences in a given time period and a self report of the general state of health, e.g. excellent, good, fair or poor. Evaluated illness measures are attempts to get at the actual illness problem that the individual is experiencing and the clinically judged severity of that illness. Under ideal circumstances included here would be a physical examination of the individual by a medical practitioner (R Andersen & Newman, 1973).

The need for utilization of health care services will be examined on the basis of how the disease interferes with the patients daily activities.
CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter provides details of the research methodology used during the study. It offers information on the study site, research design, sampling procedures, the target population, the data collection methods and tools, and finally analysis of data. Consideration is also given to logistical as well as ethical issues.

3.2 Site of the Study

This study was conducted in Ganze district which is one of the six districts in the larger Kilifi County. Ganze district lies on Latitude 3°32'0" North and Longitude 39°41'0" East. It borders Kaloleni district to the South and Bahari district to the East. Ganze district has three divisions namely Ganze, Bamba and Vitengeni; it has a total of 16 locations and 48 sub-locations.

According to the 2009 census report, Ganze district had an estimated total population of 117,074 people with the males accounting for 53,403 (45.6%) and females accounting for 63,671 (54.4%) of the total population. The district covers a total area of 2,779 Km$^2$. Ganze district is a semi arid area where horticultural crops are produced using drip irrigation system while food crops and livestock feeds are produced using water conservation structures (Ketiem et al., 2007).

3.3 Research Design

This is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The
researcher employed a cross-sectional survey research design in the collection of data for the proposed study because it can be used to collect data from many people at relatively low cost and relatively quickly. Survey research design is always used to collect information from the field at one point in time. A survey design entails data collection on more than one case and at a single point in time in order to collect both quantitative and qualitative information in connection with two or more variables which are often examined to detect patterns of association (Alan Bryman, 2012).

### 3.4 Target Population

The study focused on women of reproductive ages (18-49 years) in Ganze district which is made up of three divisions namely Ganze, Bamba and Vitengeni.

### 3.5 Study Population

The study population consisted of women (18-49 years) who had come for antenatal care and those bringing their babies born at last delivery to the primary health care centres for immunization and other maternal and child health related services.

### 3.6 Sample Size Determination and Sampling of Study Subjects

#### 3.6.1 Sample Size Determination

According to Bailey (1982), 30 elements are considered by many as the minimum size of a sample. Other researchers opt for a minimum sample of 100 units while others opt for 200 (Chadwick et al., 1984). Thirty (30) respondents were picked from each of the six health care facilities providing maternal health care services in the study area.
3.6.2 Sampling Procedure

This study used triangulation of various sampling techniques with a view of ensuring a representative sample of study subjects was selected and studied. To ensure sample representation and to avoid biasness within the framework of triangulation, multi-stage sampling strategy was adopted.

In the first stage, purposive sampling technique was used to select Ganze district among the six districts that constitute Kilifi County. Ganze was selected because it is a rural area and only one sub-district hospital in the whole district, namely Bamba sub-district hospital. The nearest referral hospitals are in Kilifi and Malindi districts and women with complications have to be referred to either of the two facilities.

In stage two, the researcher considered to stratify Ganze district into three divisions namely Ganze, Bamba and Vitengeni. This was to ensure that there is sample representation from the whole district.

In the third stage, a list of all the health facilities that offer maternal health care services in the district was drawn. Two health care facilities that provide maternal health care services were selected using simple random sampling technique from each of the divisions making a total of six health care facilities.

Lastly, study subjects were selected using convenient sampling. The interviewer was at the health care facility and interviewed 30 subjects from each health care facility giving a total sample size of 180. There was oversampling of study respondents by 9 subjects giving a total sample size of 189.
3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion Criteria

- Subjects included in the study only comprised of women of reproductive ages (18-49 years).

- Only those women who: (i) brought their babies born at last delivery and (ii) those coming for delivery to the primary health care centres for ante natal care services and (iii) those coming for immunization services were eligible for the study.

- Only those respondents who gave an informed consent of participating in the study were interviewed after they had signed the consent form.

3.7.2 Exclusion Criteria

- Women seeking other health services other than maternal health care services from the primary health care centre were not interviewed.

- Women under the age of 18 years were not interviewed because of legal and ethical issues.

- Those women who did not consent to voluntarily participate in the study were not interviewed.

3.8 Data Collection Procedures and Tools

The study employed the use of the interview schedule as the primary tool of data collection because literacy levels in Ganze district were relatively low. Interviews were carried out on
a face to face basis with the respondents who did not know how to read and write and the responses generated from the interviewees were accurately recorded.

3.9 Data Analysis

The collected data from the field was edited, coded and classified into response categories; this was done with the help of the Statistical Package for Social Sciences (SPSS, version 20.0). Descriptive statistics were used to display the Socio-Demographic characteristics of study respondents and utilization of maternal health care services in Ganze District. Frequency tables were used to present the Socio-Demographic distribution of study respondents and pie charts and bar graphs were applied to aid in the visual appreciation of the Socio-Demographic characteristics.

The chi-square test was used to examine whether or not there exists a relationship between the categorical variables; and Binomial Logistic Regression was used to carry out inferential analysis on the determinants of maternal health care utilization due to their binary nature. Logistic regression was used to examine the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). In order to identify the factors that predict utilization of maternal health care services, Multivariate Logistic Regression (MLR) was therefore applied. All the independent variables that were identified as having an association at the bivariate level were included in the model and the significance level for all the statistical analysis was set at 95% (P≤.05) confidence level.
3.10 Ethical Considerations

Ethical clearance for the study was applied to and granted by the Ethical Review Committee (ERC), an agency of the National Commission for Science, Technology and Innovation (NACOSTI). Further, research clearance was also obtained from the Deputy County Commissioner Ganze Sub-County and the Kilifi County Research Coordination Committee to visit health care facilities in Ganze and conduct the study.

During the survey, the researcher explained the purpose of the study to the respondents. This was done to ensure that the respondents gave an informed consent for taking part in the study. Furthermore, this ensured cooperation from the respondents and it helped to avoid any suspicion on the part of the study subjects.

The researcher insisted on and adhered to voluntary participation of respondents in giving information relevant for the study to avoid any coercion in the data collection process. The researcher maintained confidentiality by ensuring that respondents’ information was used only for the purpose of the study and no names of respondents were displayed and that interview schedules were to be kept securely under lock and key.
CHAPTER FOUR: STUDY RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides results of data analysis from the 189 interviewed respondents in Ganze District guided by the research objectives as elucidated in Chapter One. The study over sampled by nine (9) respondents. From the study it is evident that more women were sampled from Bamba division (36.0%) than the other divisions in the district.

This analysis and discussion focuses on the following themes: socio-economic and demographic dimensions of the local community, facility specific factors and women’s preferences and perceptions of ANC services offered at the health care facilities in Ganze district with regard to their use of maternal health care services. The findings are presented in tabular format and figures that clearly show the variations in responses among study variables.

4.2 Socio-Demographic Dimension of Respondents

This section focuses on the different or diverse characteristics with a bearing on the utilization of maternal health services. For the purpose of this research, our key interest was to conduct an assessment of the following parameters towards utilization of maternal health care services; age of respondents, education levels, education levels of their spouses, marital status, income levels, parity and religion. These parameters were investigated and results are presented next.
4.2.1 Age of Respondents

Age of respondents is critical as a variable in this study as it sheds some light on not only the maturity of the study subjects but also ensuring that the selection of study participants remained ethical. Further, age was included because of the assumption that the older the respondents the more mature and experienced on maternal issues and decision making. Indeed, differential age among expectant mothers cannot be gainsaid when it comes to making important maternal decisions that may have value in enhancing maternal and child health. The distribution of respondents by age is aptly presented in Table 4.1.

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>70</td>
<td>37.0</td>
</tr>
<tr>
<td>23-27</td>
<td>55</td>
<td>29.1</td>
</tr>
<tr>
<td>28-32</td>
<td>42</td>
<td>22.2</td>
</tr>
<tr>
<td>33-37</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>38-42</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>48-52</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Findings in Table 4.1 indicate that out of the sampled (189), respondents over one third (37%) were between ages 18-22 years old. This clearly indicates that most women start giving birth at an early age. Of the sample, over one quarter (29%) were between the ages of 23-27 years and only 5% of the respondents were aged 38 years and above.

Early marriages and giving birth at early age exposes the women to high chances of not gaining higher education thus leading to over reliance on their spouses for all their needs consequently leading to financial dependence. Dependancy has implications for maternal
health care utilization probably because women will always have to ask for money whenever they want to visit the health facility during their clinic appointments. Subsequently, it may also lead to women not attending maternal health care clinic as expected especially if the clinics are in far off places because of lack of finances to pay for their bus fare. Consequently, this may result to low or poor maternal health care service utilization. Additionally, young single women may not attend maternal health care clinic because they may be trying to hide the pregnancy from their parents and relatives.

The low percentage (5%) of women aged 28 years and above attending antenatal clinic might probably be a result of them having gone through subsequent births and thus don’t find it necessary because they feel they have had more successful birth experiences without any complications. This might also be attributed to them having stopped giving birth. This finding corroborates those of Jat et al., (2011) who found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services compared to their older counterparts.

4.2.2 Marital Status

The Marital status of a person in this study was conceived to mean the civil state of an individual in relation to marriage laws of the country. This variable was deemed important in this study because it helps in determining how maternal and child health decisions are made in a largely patriarchal African society where it is assumed that all decisions in the homestead are to be made solely by male members of the family because they are the heads of their families. The distribution of respondents by their marital status is presented in Table 4.2.
Table 4.2: Percentage distribution by respondents marital status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>Married</td>
<td>170</td>
<td>89.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Results in Table 4.2 depict that majority (90%) of the sampled respondents were married, only 7% were single, while 2% and 1% were widowed and separated respectively. Field observations showed that most of the respondents who were single were between ages 18-22 years old and either lived with their parents or relatives. The high (90%) number of respondents in marital union was expected because the study focused on women in their reproductive ages, many of whom were expected to be married due to societal expectations. Indeed, this finding corroborates those of Ebuehi et al (2006) and Mekonnen & Mekonnen (2002, 2003) who stated that marital status is related to utilization of maternal health services because married women were more likely to use antenatal care than their unmarried counterparts.

4.2.3 Religious Affiliation

Religion is herein conceived as a complete and acceptable system of set beliefs and practices that members of society adhere to. It is an institution that exercises social control among its members. Accordingly, affiliation to religious institution is one of the primary activities in society. Of importance in this study, is that religious affiliation may influence decisions on adoption of contraception, marriage, maternal and child health issues among
respondents. The distribution of respondents according to their religious affiliation is presented in Figure 4.1.

**Figure 4.1: Distribution of respondents by Religious affiliation**

Figure 4.1 reveals that a half (50%) of the respondents were Christians, slightly over one tenth (12%) were Muslims, 1% subscribed to African Traditional Religions and slightly over one thirds (37%) reported that they were Atheists. This indicates that Ganze district is majorly a Christian community. Interestingly, 37% of the respondents don’t belong to any religion. This may be explained by the remote nature of the area which is compounded by lack of infrastructure and high levels of poverty. The poor state of infrastructure and poverty have probably delinked the community from accessing or being accessed by mainstream religious evangelists.

The higher (50%) number of respondents being Christians is a mirror of Kenya, which is predominantly Christian owing to aggressive penetration of Christian evangelists and size of the Christian faith which puts it at an advantage with regard to resources and numbers over other faiths in the country. The strength in resources and numbers might have enabled
Christian denominations to penetrate this remote area more than other faiths which had limited resources and small numbers of adherants. This finding may have an influence on maternal health care utilization in the study area in line with observations by (Mekonnen & Mekonnen, 2002, 2003; Mondal, 2009) have linked religion to the fact that it affects utilization of antenatal care. They demonstrated that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs and that Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious believes.

**4.2.4 Education Level of Respondents**

Education is one of the powerful drivers of social change in society in that those with higher levels of education seem to adopt new ideas and innovations faster than their counterparts with low levels of education. Thus, the education level of respondents is a critical variable in this study as it is indicative of a person’s level of understanding, access and uptake of information related to maternal and child health issues. Findings of the study on the level of education of respondents are presented in Table 4.3.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non formal education</td>
<td>85</td>
<td>45.0</td>
</tr>
<tr>
<td>Some primary education</td>
<td>57</td>
<td>30.2</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>35</td>
<td>18.5</td>
</tr>
<tr>
<td>Some secondary education</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Secondary school completed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results in Table 4.3 indicate that out of the sampled (189) respondents, over two fifths (45.0%) had never gone to school, over one quarter (30.2%) had some primary education, with slightly less than a fifth (18.5%) reporting to have completed primary level of education. Those who reported to have either some secondary, completed secondary and others were only less than one tenth (6.3%).

From Table 4.3, it is apparent that the majority (93.7%) of the interviewed women of Ganze district were lowly educated. This finding may have an implication on the level of uptake of information on maternal and child health, adoption of maternal health care services and family planning. The levels of low education coupled with the culture and traditions of the community may compound the uptake of maternal health care services in an area. Further, the low levels of education in the area may have serious implications on other socio-economic opportunities such as securing lucrative employment and access to knowledge, especially on maternal health care services.

In fact, it has been shown that women of higher levels of education have a higher likelihood of fulfilling the requirements of the description of use of maternal health services as described by the WHO (1994; 2004). Such women have more capability to uptake new information on maternal health care practices than those with a low education background. Indeed, Elo (1992) reported that there is a strong positive relationship between education and the use of maternal health care services.
4.2.5 Education Level of Respondent’s Spouse

Owing to the aforementioned importance of the level of respondent education on the uptake of maternal health care services, it was prudent to investigate the combined effect of education on maternal health care utilization by including spousal education level in the matrix. More precisely, the education level of the respondent’s spouse was envisioned to be an important variable in this study because it may act as an enabling factor in the utilization of information concerning maternal and child health practices, access and uptake of such services. Findings on the education level of the respondent’s spouse are presented in Figure 4.2.

![Level of education of spouse](image)

*Figure 4.2: Distribution of respondents spouse by level of education*

Figure 4.2 depicts that slightly over one fifth (20.5%) of the sampled respondents’ spouse had never gone to school, over half (56.5%) had either attained some form of or completed primary education, while over one quarter (28.8%) had either some form of or completed secondary school level of education and above. The level of education of the respondent’s
spouses indicates that there are educational differentials between male and female members of society in Ganze district. Level of education among the males is higher than that among the females. This finding is not a surprise to this study as it is a mirror of the situation in the country owing to the patriarchal nature of the society where boys have higher access to schooling opportunities than their female counterparts.

However, significant to mention is that spousal educational level may facilitate the utilization of maternal health care services because it enhances the capacity to access information that can be shared with the marital partner. Such sharing of useful information and knowledge, especially on maternal health may make the spouses see the importance of visiting maternal health care clinics for their ANC. Accordingly, such visits have the potential of bettering their health status and that of their unborn children. This finding is in tandem with those of Woldemicael (2007) and Dairo & Owoyokun (2010) when they reported that high maternal and husband’s education have a positive relationship to antenatal care utilization.

4.2.6 Respondents Source of Income

Respondents source of income in this study was conceived to mean the main livelihood strategy that respondents eke out a living by receiving money on a regular basis for work done at the end of every month. This variable was considered important as it helps to highlight the ability of respondents to pay for the cost of health care services offered. Findings on respondents’ source of income are presented in Table 4.4.
Table 4.4: Distribution of respondents by main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>Casual employee</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>107</td>
<td>59.4</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 9*

Table 4.4 depicts that almost three fifths (59.4%) of the respondents had no source of income clearly alluding to the fact that most of these women were financially dependent on their spouses. The high (59.4%) number of women having no source of income may probably be explained by the fact that women, as shown in Table 4.3, have very low levels of formal education. This means that their access to formal employment is low.

Indeed, the absence of prerequisites (education and skill training) to formal labour pushes women in Ganze out of formal means of livelihood where they can earn a regular income and attain financial independence that may enhance their access to maternal care. The foregoing may be explained by the patriarchal nature of the african society which favors boys over girls in education. In fact, women are seen as homemakers and as such have to stay at home and take care of their husbands and children whereas the husbands are expected to provide for the family.
4.2.7 Source of Income of Spouse

Respondents spouse’s source of income was considered as an important variable in this study as it acts as an enabling factor to utilization of maternal health care services. This is because the earned income can be used to cater for the necessary financial obligations that might be accrued in the process of seeking maternal health care services. Results on the respondents spouse’s source of income are presented in Table 4.5.

Table 4.5: Distribution of respondents by spousal main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>04</td>
<td>2.4</td>
</tr>
<tr>
<td>Government employee</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>18</td>
<td>11.0</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Casual employee</td>
<td>62</td>
<td>37.8</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>06</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>52</td>
<td>31.7</td>
</tr>
<tr>
<td>Not aware</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 25*

Table 4.5 presents findings of respondents spouses source of income. Of the total respondents sampled (189), over one third (37.8%) of the respondents spouses were engaged in casual employment, meaning they do not earn a regular income. More than one quarter (31.7%) observed that their spouses have other sources of income other than the ones elucidated in the interview schedule. Simple observations during field work showed that most men in the area are engaged in charcoal burning. The high (37.8%) number of spouses being in casual employment means that there are times that they are out of a job and thus might not be able to always provide financially incase the wife wants to make an
ANC visit. This situation is compounded by observations made during field work that most women interviewees lived far away from the available maternal health care facilities. Accordingly, most of them reported walking as their main means of reaching the nearest health care facility. This finding confirms that of Simkhada et al., (2008) who posits that women’s employment affects antenatal care uptake.

4.2.8 Parity

Parity in this study was conceptualized to mean the birth order in a nuclear family. Parity was considered an important variable in this study because it aids in explaining the differentials in utilization rates of maternal health care services by the number of children one has. Findings of the study on parity are aptly presented in Figure 4.3.

![Parity](image)

*Figure 4.3: Distribution of respondents by parity*

Figure 4.3 indicates that slightly more than two fifths (43%) of the respondents were multiparous, more than one fifth (23%) were grandmultiparous, more than one tenth (15%) were primiparous and slightly less than one fifth (19%) were nulliparous families.
Parity has an important influence on utilization of maternal health services by women of reproductive ages (Mekonnen & Mekonnen, 2002). The relationship between parity and utilization of maternal health care services in Ganze will be tested using Chi-square and regression analysis in the later sections of this thesis.

4.2.9 Decision to Seek Maternal Health Care

The variable on who makes the decision to seek maternal health care was conceived to be important for this study as it sheds some light on the decision making process between male and females in society. The level of autonomy in decision making among the women and its effects on utilization of certain services is also critical in the analysis of maternal health care services utilization. However, Given the patriarchal nature of Kenyan communities where men are considered the heads of the households and thus responsible for decision making and the fact that health care in the household is a role of the female gender, it was critical to include the variable to see the decision maker on matters of uptake of maternal health care services in Ganze.

Further, maternal health care does not only fall within the purview of gender roles where the women are expected to perform but it actually affects women only making its decision to uptake or not very critical for women despite the patriarchal nature of society. Data on who makes decision with regard to uptake of maternal health care services in Ganze will also help in understanding whether the autonomy of women in decision making affects their utilization of such services. Results of who makes decision to seek maternal health care services are presented in Figure 4.4.
Figure 4.4 depicts that slightly more than three fifths (61%) of the respondents, were found to make joint decisions on MCH, while only one quarter (25%) of women were observed make the decisions on their own. Less than one tenth (9%) of MCH decisions were observed to be made by the respondents spouse and (5%) of the times decisions are made by other people, either parents or relatives living with the respondent.

On one hand, the higher (61%) percentage citing joint decision making is a clear testimony of the growing gender empowerment and dynamic nature of society where women are gaining, albeit gradual, their social space as key players in decision making with regard to matters touching on their lives. This seems to happen regardless of the strong patriarchal nature of the Kenyan society. On the other hand, the one quarter (25%) who said they make the decision themselves was expected in that health care and indeed, maternal health care decision making and uptake of its services are a preserve of women owing to the genderized roles in society, where health is classified as a domestic role to be undertaken by women. In fact, women’s autonomy in decision making has been reported by
Woldemicael (2007) as an important factor in explaining utilization of maternal and child health care services.

### 4.2.10 Hospital Deliveries

The number of hospital deliveries was considered to be a critical aspect in this study since it gives further insight into the utilization rates of institutional delivery services among the rural women of Ganze district. Findings with regard to this variable are presented in Figure 4.5.

![Hospital Deliveries](chart)

**Figure 4. 5: Distribution of respondents by hospital deliveries**

Study findings presented in Figure 4.5 clearly indicate that of all (189) the respondents interviewed, only over two fifths (44%) had ever had hospital deliveries, while over half (56%) had never had any hospital deliveries. This finding corroborates those of the KDHS 2008-2009 which reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). Interestingly, this is happening regardless of the
understanding that increasing the proportions of delivery taking place in health facilities is important in reducing health risks to both the mother and her unborn child and consequently preventing both maternal and child mortality.

However, Ganze district being a rural area, 44% of the interviewed mothers having ever delivered in health facilities is quite high and somehow slightly contradicts the KDHS 2008-09 which indicate that only 35.4% of deliveries take place in health facilities in rural areas (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). The reason for the difference could be attributable to differences in the characteristics of the samples used in the two studies. Further, whereas the KDHS 2008-09 was a country wide study encompassing women from both urban and rural areas, this study focused only on Ganze which is a rural and poor district in Kilifi County.

4.2.11 Place of Delivery of Child at First Birth

The place of delivery of the first born child was considered an important variable in this study as it highlights the differentials in place of delivery due to the fear of child birth associated with prior birth experience of women in their second parity. This variable was included in the study because experiences of first birth may have a bearing on uptake or non-uptake of maternal health care services. Results of the place of delivery of child at first birth are presented in Table 4.6.
Table 4. 6: Distribution of respondents by place of delivery of child born at first birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>53</td>
<td>34.9</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>81</td>
<td>53.3</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>02</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 37

Findings in Table 4.6 show that over half (53.3%) of the respondents had their first births at home (alone or with the help of a relative), while slightly more than one third (34.9%) had their first delivery in a health care facility with the help of a trained health professional. The over half (53.3%) of women of reproductive ages giving birth at home (alone or with the help of a relative) may probably be due to structural factors such as long distance to the hospital, poor road network and lack of transportation. This finding is consistent with that of Ochako et al (2011) and (Owino, n.d.) who reported that delivery with the aid of a TBA or skilled professional is less likely to happen among rural women. Accordingly, rural residence is largely associated with higher likelihood of home deliveries. The remote nature and poor infrastructural development in Ganze may aptly explain these disparities reported in the study.

4.2.12 Place of Delivery of Latest Child

Place of delivery of latest child was envisioned as an important variable in this study as it highlights the differentials in place of delivery between the first born child and subsequent deliveries. The assumption is that if the first child was born in a health care facility and the
experience was satisfactory to the mother, there are high chances that subsequent births would take place in health care facilities and vice versa. Results of the study with regard to this variable are presented in Table 4.7.

Table 4.7: Distribution of respondents by place of delivery of child born at latest birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>65</td>
<td>42.5</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>70</td>
<td>45.8</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>07</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 36

Findings of the study in Table 4.7 depict that prior to the study, over two fifths (45.8%) of the women had delivered their latest child at home or with the help of a relative, while another over two fifths (42.5%) had been observed to have delivered in a hospital with the help of a trained health professional. In comparison with place of delivery of first birth as captured in Table 4.6, over half (53.3%) had their first births at home alone or with the help of a relative while slightly more than one third (34.9%) had their first delivery in a hospital with the help of a trained health professional.

The two sets of findings, Table 4.6 and Table 4.7, show interesting trends that, on one hand, there is a decline (from 53.3% to 45.8%) of women giving birth at home or with the help of a relative and, on the other hand, there is a subsequent increase (from 34.9% to 42.5%) of women who had their subsequent deliveries in a health care facility compared to their first birth. These findings are not a surprise to this study in that they show the gains
that are being made in enhancing deliveries in health care facilities and in the hands of professionals as envisioned by government policy and the MDGs, especially goal number five (5). In fact, the findings are inconsistent with those of Fotso et al (2009) and Mekonnen & Mekonnen (2002) who reported that health facility delivery decreases as parity increases. More specifically, they reported that those with two or more children have lower utilization of health care delivery care services, a fact refuted by the findings of this study.

4.2.13 Trimester Women Visited Health Facility During First Pregnancy

The concept trimester is used in this study to refer to divisions of three months during pregnancy that an expectant mother had started ANC visits. It is expected that women will start visiting ANC services immediately they realise that they are expectant. The variable trimester in first pregnancy signify which month the interviewed women started ANC visits during their first pregnancy. This variable was considered important in this study as it sheds some light on how well women of child bearing ages utilize maternal health care services. The assumption being that they will start uptaking ANC services on the first month that they realise they are expectant. Findings of the study on trimester in first pregnancy are presented in Figure 4.6.
Figure 4.6: Distribution of respondents by trimester one started ANC visits during first pregnancy

Figure 4.6 presents findings of the trimester that women started their antenatal visits during their first pregnancy. It is shown in Figure 4.7 that more than three fifths (65%) of the respondents had their first visit during the second trimester, one fifth (20%) had their first visit during the first trimester, less than one tenth (9%) had their first visit during the third trimester and only 6% never went for ANC visits during their first pregnancy. Findings are consistent with those of a study carried out in Ethiopia (Afework et al., 2014) which found out that majority (68.3%) of the women were observed to have started attending ANC during the second trimester.

This finding can further be explained by field observations where most women attributed having not had their first ANC visit due to the fact that they did not and still do not know when exactly they are supposed to make their first visit once they discover that they are expectant. The lack of knowledge on when to begin their ANC visits can probably be as a result of low levels of education among the women as captured in earlier findings of the study where only less than one fifth (6.3%) reported to have secondary education and
above. Lack of education denies these women opportunities to access information, including on health care and hence this impacts on uptake of health care services including maternal health care services.

4.2.14 Trimester Women Visited Health Facility During Latest Pregnancy

Trimester in this study was conceived, inter alia, to mean divisions of three months during pregnancy in which the respondents started using ANC services in their current pregnancy. This variable was considered important in this study first, because it sheds some light on how well women of child bearing ages utilize maternal health care services by focusing on the first month that they seek ANC services for their children at last birth. Second, it could provide comparative data with regard to which trimester, first or second, birth parity is associated with and third, whether there are dynamics in the process. Findings of the study on the trends for this variable are captured in Figure 4.7.

![Figure 4.7: Distribution of respondents by trimester when one started ANC visits during latest pregnancy](image-url)
Figure 4.7 depicts that slightly less than one quarter (24%) had their first ANC visit for current pregnancy during the first trimester, more than three fifths (67%) had their first visit during the second trimester and less than one tenth (9%) had their first visit during the third trimester. The low (24%) percentage of women having their first visit during the first trimester might probably be attributed to lack of maternal health care education or structural factors such as long distances to the health facility and maternal health care services being offered at the health facility on certain days of the week only hence inconveniencing users.

Comparatively, women seeking ANC services during their first pregnancy, Figure 4.7 and women seeking ANC services during their latest pregnancy, Figure 4.8 show over three fifths 65% and 67% respectively appearing in the second trimester. Only a slight increase of 2% of women seeking ANC services in the second trimester of their current pregnancy can be observed. This can probably be attributed to the low levels of education and high poverty rates in the study area as adduced and implied in earlier findings of the study respectively. Low levels of education and high poverty rates makes it difficult for women to either realise they are pregnant in the first trimester because they are ignorant on ANC matters and may not be in a position to access or afford pregnancy testing kits respectively.

**4.2.15 Distance to Health Care Facility**

Distance to the health facility was considered as an important variable in this study as it provided an insight into the structural barriers that may exist in society in relation to utilization of maternal health care services. Considering the remote location and poverty rate (over 68%) in the county, especially in the study area, the inclusion of the variable was
both timely and significant for the study. Results of the study on this variable are presented in Figure 4.8.

![Figure 4.8: Distribution of respondents on their views whether distance to health facility is a concern](image)

Findings in Figure 4.8 indicate that more than half (56.4%) of the studied women said that the distance to the health facility was a concern. Field observations show that they had to spend a lot of time on the way to and from hospital and this affected how they utilized maternal health care services. Thus, many stated that they only went to the hospital when they deemed it necessary. This study finding supports that of Cham et al (2005) who posits that delays in decision making process of visiting a health facility can be caused by structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport and inadequate means of transportation.

Figure 4.8 also shows that more than two fifths (43.6%) of the respondents observed that the distance to and from the health facility was not a hindrance to their utilization of maternal health care services. Findings from informal interviews with these women, health
professionals and community members reveal that most of these women were used to walking long distances. Indeed, they were so used to the long distances that whenever we asked some community members on our way to the health care facilities they would retort, “nihaha kare” (literary translated to mean it is just here). The “nihaha kare” could turn out to be kilometre(s) of walking as observed during field work. This can be interpreted to mean that they are used to the long distances such that their sense of distance or how far a place is may be blurred by their experiences and cultural perceptions of distance.

4.2.16 Means of Transport to Nearest Facility

Means of transport to the nearest health facility was considered an important variable of this study as it presented to us one of the challenges that the pregnant mothers may encounter as they seek maternal health care services in their respective health care facilities. The respondents were asked to report which was the most frequently used means of transport that they used to the nearest health facility during clinic visits for maternal health care services? Findings of the various means of transport utilized by the interviewed women are presented in Table 4.8.

Table 4.8: Distribution of respondents by means of transport to health facility

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>141</td>
<td>76.2</td>
</tr>
<tr>
<td>Motorcycle boda boda</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td>Bicycle boda boda</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Own/family motorcycle</td>
<td>02</td>
<td>1.1</td>
</tr>
<tr>
<td>Own/family bicycle</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Public service vehicle</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 4*
Table 4.8 indicates that slightly more than three quarters (76.2%) of study respondents reported walking to the nearest health care facility while both motorcycle (boda boda) and public service vehicles accounted for (10.8%) respectively. The larger (76.2%) percentage of the respondents who were observed to be walking to the health care facility for ANC services despite the fact that they were expectant and whether or not they had complications was amazing in that the mean distance to the nearest health facility was observed to be 7.2 Kilometers, while the mean time taken walking to the health care facility was observed to be one hundred and eleven (111 minutes) minutes or approximately one hour and fifty one minutes (1H:51 M).

Notably, despite these long distances, women had probably no other option. The lack of alternative options was probably due to poverty and limited employment opportunities constraining their financial capabilities and thus a lack of means to pay for even public transportation or seek alternative health care facilities in the locality or in the neighbourhood. However, these findings are not a surprise to this study as they are consistent with those of Cham et al (2005) who reported that structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport, inadequate means of transportation can lead to delays in the decision making process of visiting a health care facility by patients.

**4.2.17 Gender of Provider**

The gender of the service provider was considered an important variable in this study because some cultures and religions only accept other women to be midwives and not men. This is regardless of the fact that it is until recently that the girl child has been given an
opportunity to go to school leading to differential education qualifications. Results on the
gender of provider are presented in Figure 4.9.

![Gender of provider](image)

**Figure 4.9: Distribution of respondents by their preferred gender of provider**

Results in Figure 4.9 clearly indicate that over half (53%) of the respondents had no
particular preference for the gender of provider whilst over two fifths (42%) and less than
one tenth (5%) said that they would want to be attended to by a female or male provider
respectively.

The more than half (53%) of the respondents who said they had no particular preference for
the gender of the provider may be explained first, by the recognition among respondents
that providers are bound by a code of ethics and the fact that all staff undergo similar
professional training and thus gender consideration does not compromise quality of care
and competence among providers. Second, owing to the remote location of the district and
the fact that there are limited choices of health care facilities, expectant women may not
have opportunity to make choices of health care providers based on among other things
gender and that they have to do with what is available.
As expected, Figure 4.9 shows that over two fifths (42%) of the respondents wanted to be attended to by female providers. Several factors can explain this. One respondent who preferred to be attended to by a female health care practitioner said that:

“kuna mambo mengine huwezi mueleza mwanamume.....mwanamke ni bora haswa amabaye amezaa yuajua kila kitu hata si lazima umwe lezee”. (Translated this means that there are some issues that you cannot open up to a man....women are better especially those who have given birth because they have experienced childbirth and so know everything so you don’t need to tell them everything).

Another respondent who would like to be attended to by a female practitioner retorted that:

“Muche dza mino” (Translated into english means that the female practitioner is a woman just like herself).

Further, it is noted in Figure 4.9 that only 5% of the women would like to be attended to by a male health care provider. This is interesting and unexpected given the private and confidential nature of ANC procedures. This probably is because of the ethical confidence patients have of health care providers to handle private and confidential details regardless of gender differentials of their patients. More interestingly, two respondents among the 5% who said they would like to be attended to by a male health care provider retorted that:

“mimi napenda sana huyo daktari awe mwanamume, hawa wa kike wana madharau sana.” (Translated into english means that she would like the midwife to be a male because the female ones are usually not so friendly). To the contrary, another respondents observed
that “daktari wa kiume wananiita aibu” (Translated into English means that male practitioners make her shy).

### 4.2.18 Type of Provider

The type of provider was considered as a vital variable in this study as this may affect utilization of maternal health care services if the preferred type of provider by the mothers cannot be easily found in the facility. Results of the study on the type of preferred provider are presented in Figure 4.10.

#### Figure 4. 10: Distribution of respondents by their preferred type of provider

<table>
<thead>
<tr>
<th>Preferred type of provider</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No preference</td>
<td>12.2%</td>
</tr>
<tr>
<td>A combination</td>
<td>3.7%</td>
</tr>
<tr>
<td>Traditional Birth Attendant</td>
<td>3.2%</td>
</tr>
<tr>
<td>Midwife</td>
<td>14.8%</td>
</tr>
<tr>
<td>Nurse</td>
<td>12.7%</td>
</tr>
<tr>
<td>Doctor</td>
<td>53.4%</td>
</tr>
</tbody>
</table>

Findings in Figure 4.10 indicate that slightly more than four fifths (80.9%) of the interviewed respondents prefer to be attended to by trained medical professionals such as Medical Doctors (53.4%), Midwives (14.8%) or Nurses (12.7%). Others preferred T.B.A’s (3.2%) or a combination of all the practitioners (3.7%) whilsts more than one tenth (12.2%) had no preference. Despite more than half (53.4%) of women preferring to be attended to
by a doctor, not even a single doctor has been posted to serve in the sub-district hospital, health center and dispensaries that serve the expansive district.

However, the high number of respondents (80.9%) who preferred to be attended to by a trained medical professional might be a result of the awareness that health professionals are better trained in handling the birth process and emergency cases should any arise in the process of child birth which is always a risky affair. The finding supports MDG’s objectives especially goal five (5) that strives to make sure that women of reproductive age bracket are attended to in health care facilities and by professionals. The fact that over four fifths (80.9%) of interviewed women cited the need to be attended to by professional doctors shows goodwill in what the world is striving to achieve on the part of women.

### 4.3 Bivariate Analysis

Various statistical tools have been used in this work to provide an in-depth insight on the relationships that exist between the studies’ dependent and independent variables. Bivariate analysis using Chi-square ($\chi^2$) statistic for the test of significance (i.e. goodness of fit) and Cross-tabulation was used to examine the relationship between *Socio-Demographic characteristics of the study respondents and utilization of Maternal Health care services*.

Further, this thesis uses the Contingency Coefficient (C) to provide a measure of association between the study variables. The rationale behind this is that Contingency Coefficient is appropriate for tables of any size (Mangal, 1987). The value of (C) is given by the formula:

$$ C = \sqrt{\frac{\chi^2}{n \times g^2}} $$

*(Equation 4.1)*
Where “n” is the sample size and “χ²” is the Chi-square value. Like ϒ or phi and other coefficients of correlation, C has no limit (i.e. ±1). Its upper limit is dependent upon the number of categories (i.e. the size of the table). Like Chi-square (χ²), it does not have negative values (Mangal, 1987). For a table made up of an equal number of columns and rows (K×K), the upper limit of the Contingency Coefficient is given by the formula:

\[
C(\text{upper limit}) = \frac{\sqrt{K-1}}{K}
\]  

(Equation 4.2)

Thus, for a 2×2 table, it is 0.7, for a 3×3 table √2/3≈ 0.82 and for a 4×4 table √3/4 = 0.87, e.t.c. However, when the number of columns and rows differ in a table, to calculate the upper limit, the smaller number is taken as K.

Important to note in this thesis is that all the analysis in this work have been conducted using version 20.0 of the Statistical Package for Social Sciences (SPSS), with all the associations/relationships being tested at 95.0% confidence interval.

4.3.1 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Place of Delivery

In this series of bivariate analyses, using Chi-square and Contingency Coefficient, a number of socio-economic characteristics were tested for their influence on the utilization of MHCS. Results of analysis based on Chi-square statistics and Contingency Coefficient for each independent variable and dependent variable have been presented, interpreted and discussed.
Discussion of findings of analysis was done with a view to integrate the results within the existing framework of knowledge in research literature reviewed in Chapter Two of this thesis. In this regard, the discussion of results in this section will draw from the Chi-square and Contingency Coefficient analyses of various Socio-Demographic characteristics (independent variable(s) and place of delivery (dependent variable) in the order in which they are reflected in Table 4.9.

Findings in Table 4.9 shed some light, inter alia, on the relationship between Socio-Demographic Characteristics (SDC) of the respondents and Place of Delivery (PoD). The presentation of the results of analysis follows next.

From Table 4.9, an attempt is made to show whether there exists a relationship between age and use of health facilities for delivery. It is observed that women aged 28 years and above had the highest (54.5%) percentage of users who delivered in health care facilities. Further, women aged below 28 years accounted for over half (54.2%) of all home deliveries with women aged 28 years and above accounting for (4.5%) of all deliveries that took place either at the T.B.A’s clinic or on the way to hospital. Contrary to our expectations, women aged 28 years and above had more (54.5%) health facility deliveries than young women who accounted for only (40%) of health facility deliveries.
<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Health Facility</th>
<th>Home</th>
<th>T.B.A’s clinic &amp; on the way to hospital</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td>1.539</td>
<td>2</td>
<td>.463</td>
<td>.100</td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>54.2</td>
<td>5.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>40.9</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td>5.043</td>
<td>2</td>
<td>.056</td>
<td>.191</td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>54.6</td>
<td>5.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td></td>
<td>21.384</td>
<td>4</td>
<td>.001**</td>
<td>.350</td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>36.2</td>
<td>5.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>45.0</td>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>57.5</td>
<td>12.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
<td>18.216</td>
<td>4</td>
<td>.001**</td>
<td>.326</td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>20.7</td>
<td>3.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>60.5</td>
<td>7.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>58.1</td>
<td>2.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td>13.612</td>
<td>4</td>
<td>.009**</td>
<td>.286</td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>64.2</td>
<td>4.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>41.2</td>
<td>5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td>1.860</td>
<td>4</td>
<td>.762</td>
<td>.114</td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>59.4</td>
<td>6.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>54.4</td>
<td>5.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>43.3</td>
<td>6.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents’ income (%)</td>
<td></td>
<td></td>
<td></td>
<td>4.129</td>
<td>2</td>
<td>.127</td>
<td>.267</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>55.9</td>
<td>8.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
<td>.539</td>
<td>2</td>
<td>.764</td>
<td>.097</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>52.6</td>
<td>10.5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>55.3</td>
<td>5.3</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Overall, age was not significantly associated with place of delivery ($\chi^2=1.539; \text{df}=2; \ p=.463; \ C=.100$). Moreover, the relationship was found to be weak as indicated by the value of C (0.10). A review of literature shows that the findings of the study do not concur with the findings of studies carried out in Nigeria, Uganda and Ethiopia by (Adamu, 2011; Anyait et al., 2012; Teferra et al., 2012; Daniels et al., 2013; Wolelie et al., 2014; Abeje et al., 2014) who contended that age of women of reproductive age was significantly associated with institutional delivery service utilization.

Results in Table 4.9, also show that more than half (54.6%) of married women gave birth at home with three quarters (75.0%) of mothers who are either single, separated, divorced or widowed delivering in a health facility. Interestingly, women who are either single, divorced separated or widowed have a high likelihood (75.0%) of having a health facility delivery than married women. Nonetheless, the relationship between marital status and the place of delivery was not significant ($\chi^2=5.043 \text{df}=2 \ P=.056 \ C=.191$). This finding is in agreement with other studies from Ethiopia and Uganda (Assfaw & Sebastian, 2010; Anyait et al., 2012) who affirmed that marital union does not influence place of delivery.

Findings in Table 4.9 reveal further that more than half (58.0%) of Christians delivered in a health facility whereas more respondents with no religion and from non-Christian religions delivered at home and in a T.B.A’s clinic or on the way to a health facility. Indeed, religion was significantly associated with place of delivery ($\chi^2=21.384; \text{df}=4; \ p=0.001; \ C=0.350$). Hence we conclude that religion has a significant influence on utilization of maternal health care services. The findings concur with that of Adamu (2011) in Nigeria who contended that religion had a significant association with institutional delivery with Christian women.
more likely to deliver in health facilities. Hence we conclude that religion has a significant influence on utilization of maternal health care services.

Data in Table 4.9 reveals that slightly more than three quarters (75.9%) of the Primiparae women had health facility deliveries with less than a tenth (2.3%) of Grandmultiparae women delivering either at the T.B.A’s clinic or on the way to hospital. This suggests that lower parity women have a high (75.9%) likelihood of taking hospital deliveries. This finding confirms that parity has an influence on women’s place of delivery. These may be probably women in their first pregnancy and that they are being cautious of perceived risks that are associated with childbirth. Indeed, parity was significantly associated with place of delivery \(\chi^2=18.216; \text{df}=4; p=0.001; C=0.326\). The study’s findings are consistent with those of (Assfaw & Sebastian, 2010). The findings also confirms those of (Tsegay et al., 2013) who contended that parity is an important determinant of place of delivery.

Table 4.9 also depicts that all (100%) women who had secondary and above level of education delivered in a health care facility. Further, more than three fifths (64.2%) of women with no level of education were observed to have had home deliveries. This finding could be explained by the fact that women with a high education level have the capability to uptake information about maternal health care services subsequently leading to utilization of such services. As reported by (Elo, 1992; Tura & G/Mariam, 2008; Gupta et al., 2010; Adamu, 2011; Anyait et al., 2012; Daniels et al., 2013; Abeje et al., 2014; Ayele et al., 2014; Odo & Shifti, 2014; Wolelie et al., 2015) maternal education level is a critical aspect in the utilization of maternal institutionalized delivery services.
Indeed, maternal education was significantly related to the place of delivery ($\chi^2=13.612$; df=4; p=0.009; C=0.286). These findings are in tandem with that of (Woldemicael, 2007) and also confirm those of (Teferra et al., 2012) who posited that there is a positive relationship between maternal education and place of delivery.

Findings in Table 4.9 depict that half (50.0%) of women whose husbands had secondary and above level of education had hospital deliveries with slightly less than three fifths (59.4%) of women who were married to men with no formal education having their deliveries at home alone or assisted by a relative. This finding may be explained by the fact that husbands’ education may act as an enabling factor in ensuring the mother receives quality care during childbirth as the husband has knowledge on maternal health issues. This finding suggests that women married to men with a high educational level are more likely to deliver in a health facility than those women married to men with no formal education.

However, spousal education level was not significantly associated with place of delivery ($\chi^2=1.860$; df=4; Pp=0.762; C=0.114). Apparently, this finding is contrary to those of (Woldemicael, 2007); Gupta et al., 2010; Anyait et al., 2012; Teferra et al., 2012; Ayele et al., 2014; Wolelie et al., 2014; Prasad, 2014; Odo & Shifti, 2014; Abeje et al., 2014) who contended that spousal education level is significantly associated with maternal health care utilization in institutional setups.

Results in Table 4.9 depict that three fifths (60%) of women who earned 4,000 shillings and above had hospital deliveries with more than half (55.9%) of women earning less than 4,000 shillings having home deliveries. The high number of women earning 4,000 shillings
and above having health facility deliveries with only (35.3%) of women earning less than 
4,000 shillings having health facility deliveries could be as a result of the costs involved. 
As reported by Tura & Mariam, (2008) and maternal income has an influence on utilization 
of institutional delivery services. However, maternal income was not significantly 
associated with place of delivery ($\chi^2=4.129$, df=2, p=0.127; C=0.267).

From Table 4.9, it is evident that less than one tenth (5.3%) and more than half (55.3%) of 
women whose spouses earned 4,000 shillings and above delivered either at the T.B.A’s 
clinic or on their way to hospital or at home respectively. Further, slightly more than one 
third (36.8%) of women whose spouses earned less than 4,000 shillings had health facility 
deliveries. As expected, women whose husbands earned 4,000 shillings and above were 
bound to have more health facility deliveries because this acts as an enabling factor than 
their counterparts married to husbands who earn less than 4,000 shillings. This could be 
explained by the fact that they have resources that they could use in the course of seeking 
institutional delivery services as opposed to their counterparts who may not be able to 
access institutional delivery services due to shortage or lack of needed resources.

However, spousal income level was not significantly associated with place of delivery 
($\chi^2=0.539$; df=2; p=0.764; C=0.097). Hence we conclude that spousal income level has no 
relationship with place of delivery.

4.3.2 Relationship between Socio-Demographic Characteristics and Utilization of 
Maternal Health Care Services (MHCS) as Measured by Antenatal Care

Table 4.10 shows the relationship between Socio-Demographic Characteristics and 
Antenatal care. In this set of tests, the researcher first makes an attempt to determine
whether a relationship exists between age and number of ANC visits made to the clinic before delivery.

Findings in Table 4.10 show that women aged 28 years and above were found to be more likely (90.9%) to make 4 visits and above to the ANC clinic. More than one third (37.7%) of young women below 28 years were observed to make less than the required four visits to the ANC clinic prior to delivery of child born at last birth. A possible explanation for why less than two fifths (37.7%) of women below age 28 years made less than the required four visits could be as a result of lack of information on the required number and timing of visits to the ANC clinic. As reported by Anchang-Kimbi et al., (2014), young age (less than 20 years) is a significant risk factor associated with fewer clinic visits (less than 4). Indeed, maternal age was significantly associated with the number of ANC visits ($\chi^2=7.063; \text{df}=1; p=0.008; \text{C}=0.190$). These findings are consistent with those of Banda, (2013), Tsegay et al., (2013) and Anchang-Kimbi et al., (2014), that maternal age has an influence on number of ANC visits hence we conclude that maternal age significantly influences number of ANC visits women make before delivery.
Table 4.10: Relationship between Socio-Demographic characteristics of respondents and number of ANC visits

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>&lt;4 visits</th>
<th>4 Visits and above</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>37.7</td>
<td>62.3</td>
<td>7.063</td>
<td>1</td>
<td>.008**</td>
<td>.190</td>
</tr>
<tr>
<td>28 years and above</td>
<td>9.1</td>
<td>90.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>31.2</td>
<td>68.8</td>
<td>7.747</td>
<td>1</td>
<td>.005**</td>
<td>.198</td>
</tr>
<tr>
<td>Other statuses</td>
<td>63.2</td>
<td>36.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>38.3</td>
<td>61.7</td>
<td>7.674</td>
<td>2</td>
<td>.022*</td>
<td>.198</td>
</tr>
<tr>
<td>Other religions</td>
<td>8.7</td>
<td>91.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>No religion</td>
<td>37.5</td>
<td>62.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
<td>69.4</td>
<td>30.6</td>
<td>24.609</td>
<td>3</td>
<td>.001**</td>
<td>.339</td>
</tr>
<tr>
<td>Primiparae</td>
<td>24.1</td>
<td>75.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>28.4</td>
<td>71.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>23.3</td>
<td>76.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>27.1</td>
<td>72.9</td>
<td>4.237</td>
<td>2</td>
<td>.120</td>
<td>.148</td>
</tr>
<tr>
<td>Primary</td>
<td>39.1</td>
<td>60.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>20.0</td>
<td>80.0</td>
<td>6.133</td>
<td>2</td>
<td>.047*</td>
<td>.186</td>
</tr>
<tr>
<td>Primary</td>
<td>29.9</td>
<td>70.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>46.2</td>
<td>53.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>26.8</td>
<td>73.2</td>
<td>1.242</td>
<td>1</td>
<td>.265</td>
<td>.136</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>19.0</td>
<td>81.0</td>
<td>.255</td>
<td>1</td>
<td>.613</td>
<td>.059</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>24.5</td>
<td>75.5</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

Findings in Table 4.10 show that more than three fifths (68.8%) of married women made four visits and above, while slightly more than three fifths (63.2%) of women who were single, separated, widowed or divorced made less than four visits before delivery of their
latest child. The above findings suggest that married women have a higher likelihood of having four visits and above than unmarried women. This could be attributed to the fact that they get maternal services support from their spouses either in form of maternal care information, social or financial support. The finding of this study that male spouses had higher level of education than their wives further strengthen the support that women receive for ANC services during pregnancy.

Indeed, marital status was significantly associated with ANC visits \((\chi^2=7.747; \text{df}=1; p=0.005; C=0.198)\). This finding is consistent with that of a study carried out in India by Gupta et al., (2010) and also confirms that of Anchang-Kimbi et al., (2014) who stated that being single is a significant risk factor associated with fewer clinic visits (less than 4).

Table 4.10 further depicts that majority (91.3%) of women who profess Islam and African Traditional Religion (ATR) made four visits and above, while more than one third (38.3%) of Christian women had less than four visits to the clinic before birth of their latest child. These findings show that women who profess Islam and African Traditional Religion have a high likelihood (91.3%) of having made four visits and above. Indeed, religion was significantly associated with ANC visits \((\chi^2=7.674; \text{df}=2; P=0.022; C=0.198)\). The study finding corroborates that of Adamu, (2011) who contends that religion has an influence on number of ANC visits.

Findings in Table 4.10 reveal that more than three fifths (69.4%) of Nulliparae women made less than four visits, while slightly more than three quarters (76.7%) of grand Multiparae women made four and above ANC visits. This finding can be possibly explained by the fact that women of a higher parity have had previous birth experiences
which might have been occasioned by a complication warranting them to make all the required visits to avert any complication that may arise. Indeed, parity was significantly associated with ANC visits ($\chi^2=24.609; \text{df}=3; P=0.001; C=0.339$). This finding is in agreement with that of Banda, (2013) who reported that parity is significantly associated with number of visits to the ANC clinic.

Table 4.10 further depicts that slightly less than three quarters (72.9%) of women with no formal education made four visits and above with one half (50.0%) of women with secondary education and above making 4 visits and above. The high (72.9%) number of women with no formal education having had more than four ANC visits and half (50%) of women with secondary education or more having less than four visits could be explained by the fact that most respondents knew about maternal health care services irrespective of their educational status. This suggests that existence of informal means such as radio and television among others could be significant sources of information in educating women of reproductive ages as opposed to formal education only. As argued by Banda, (2013), education level does not seem to influence number of ANC visits to the clinic but those with secondary education were more likely to make more visit to the ANC clinic. In essence, this finding contradicts that of Banda (2013) where more (72.9%) women with no formal education were observed to have had four visits and above.

Further, maternal education is associated with improved health, women empowerment and reduction of gender disparities. However, the relationship between maternal education level and ANC visits was not significant ($\chi^2=4.237; \text{df}=2; P=0.120; C=0.148$). This study finding contradict those of (Elo, 1992; Chakraborty et al., 2003; Woldemicael, 2007; Gupta et al.,
2010) who reported that maternal education has a significant bearing on the number of ANC visits.

Results in Table 4.10 also show that four fifths (80%) of women married to men with no formal education made four visits and above, while more than two fifths (46.2%) of women whose spouses had secondary and above level of education made less than four visits. Interestingly, respondents who utilized the services more had spouses with lower levels of education as compared to those who did not utilize them. This could be attributed to the fact that use of antenatal care is not limited to formal education only. Further, Maternity services are now free and there is massive awareness creation by the Ministry of Health (MoH) on utilization of MHCS in the rural areas, in addition to other initiatives such as the Beyond Zero Campaign by the First Lady Margaret Kenyatta.

Indeed, spousal education level was significantly associated with number of ANC visits ($\chi^2=6.133; \text{df}=2; p=0.047; C=0.186$). This study finding corroborate those of Woldemicael, (2007; and Daniels et al., (2013) when they contended that spousal educational level was associated with 4 and above antenatal visits.

Findings of the study in Table 4.10 also show that slightly less than three quarters (73.2%) of women who earned 4,000 shillings and above four visits and above with two fifths (40.0%) of women earning below 4,000 shillings making less than four visits. This finding could be explained on the basis of the Output Based Approach (OBA) program which aims to improve access, equity and uptake of quality reproductive health services to economically disadvantaged women. The women purchase the vouchers at a subsidized price of 100 shillings which entitles them to access reproductive health services such as
Safe Motherhood (SMH), Family Planning (FP) and Gender Based Violence (GBV) recovery services free of charge.

Maternal income was not significantly associated with number of ANC visits ($\chi^2=1.242; df=1; p=0.265; C=0.136$). Notably, this finding is not in tandem with that of Gupta et al., (2010) when they contended that maternal income had a significant influence on the number of ANC visits.

Finally, results in Table 4.10 depict that slightly more than four fifths (81.0%) of women whose spouses earned less than 4,000 shillings made four ANC visits or more compared with (75.5%) of women whose spouses earned 4,000 shillings and above. This finding could be explained by the fact that the Government of Kenya (GoK) abolished maternity fees in all public health facilities through a presidential decree on 1st June 2013 (“MaternalNewbornHealthCare_Kenya_Oct2013.pdf,” n.d.). However, spousal income level was not significantly associated with the number of ANC visits ($\chi^2=0.255; df=1; p=0.613; C=0.059$). Hence we conclude that spousal income level does not influence the number of ANC visits the woman makes during pregnancy.

### 4.3.3 Relationship between Socio-Demographic Characteristics and Utilization of Skilled Birth Attendance (SBA)

Table 4.11 shows the relationship between Socio-Demographic Characteristics and use of Skilled Birth Attendants services. In this study, an attempt was made to understand the relationship between age and Utilization of Skilled Birth Attendance.
Results of analysis in Table 4.11 indicate that slightly less than three fifths (59.5%) of women aged below 28 years did not have SBA service at birth of their latest child while more than half (54.5%) of the women aged 28 years and above had SBA service during their latest birth. This could be explained by the fact that marriage is seen as a sacred institution in the African set up and thus getting children before marriage was a sign of lack of morals. Accordingly, many young women who were not married ran away from their parent’s home and went to give birth elsewhere.

The relationship between age and SBA service was not significant ($\chi^2=1.530; \text{ df}=1; p=0.216; C=0.099$). This finding contradicts those of Daniels et al., (2013) when they contended that use of SBA was more associated with the youth.

Table 4.11 shows that slightly more than three fifths (60.3%) of married women did not have SBA of child born at last birth, while three quarters (75.0%) of women who were unmarried had SBA services. Being married means one has a partner who could take care of them and that is why most respondents had no skilled attendance at birth, while being unmarried makes one to seek SBA services in case labour pains commence when they are all alone at home. Indeed, marital status was significantly associated with SBA services ($\chi^2=5.634; \text{ df}=1; p=0.018; C=0.188$). This study’s finding is consistent with that of Daniels et al., (2013) that marital status has a significant association with SBA with single mothers more likely to seek SBA.
Table 4.11: Relationship between Socio-Demographic characteristics of respondents and use of a Skilled Birth Attendant (SBA)

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Skilled Attendance</th>
<th>Unskilled Attendance</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>40.5</td>
<td>59.5</td>
<td>1.530</td>
<td>1</td>
<td>.216</td>
<td>.099</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>45.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>60.3</td>
<td>5.634</td>
<td>1</td>
<td>.018*</td>
<td>.188</td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>42.0</td>
<td>13.463</td>
<td>2</td>
<td>.001**</td>
<td>.284</td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>73.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td>16.951</td>
<td>2</td>
<td>.001**</td>
<td>.316</td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>24.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>67.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>69.1</td>
<td>12.934</td>
<td>2</td>
<td>.002**</td>
<td>.279</td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>47.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spousal Education Level (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>65.6</td>
<td>1.590</td>
<td>1</td>
<td>.451</td>
<td>.106</td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>59.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal income (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>64.7</td>
<td>3.113</td>
<td>1</td>
<td>.078</td>
<td>.233</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income of Spouse (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>63.2</td>
<td>.037</td>
<td>1</td>
<td>.847</td>
<td>.025</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Results in Table 4.11 show that less than three fifths (58.0%) of Christians had skilled attendance at birth, while three fifths (60.0%) of women who belong to Islam and African Traditional Religion had no skilled attendance at birth of child born at last birth. Christian women tend to use SBA more (58.0%) than women who profess Islam and ATR who report (60.0%) utilization of unskilled attendance at birth. According to Stenlund, (2012) women belonging to religions other than Islam have higher odds of delivering with assistance of SBA’s. Indeed, religion was significantly associated with use of SBA services ($\chi^2=13.463; df=2; p=0.001; C=0.284$). This finding corroborates that of Stenlund, (2012) who contended that women belonging to other religions had higher odds of delivering with assistance of SBA’s than those of Islamic faith.

Further, findings in Table 4.11 indicate that slightly more than three quarters (75.9%) of Primiparae women had skilled attendance services at birth during latest birth, while more than three fifths (67.9%) of Multiparae women had no skilled attendance during latest birth. Lower parity women are more likely to use SBA than higher parity women because higher parity women have experience due to previous births. As reported by Worku et al., (2013), women who had births for the first time were more likely to use Skilled Birth Attendance services. Indeed, parity was significantly associated with Skilled Birth Attendance ($\chi^2=16.951; df=2; p=0.001; C=0.316$). The study’s finding is consistent with those of (Ochako et al., 2011; Kabakyenga et al., 2012; Worku et al., 2013) who contended that parity has a strong bearing on utilization of SBA.

Table 4.11 also depicts that slightly less than one third (30.9%) of women with no formal education had skilled attendance at birth with all women with secondary and higher
education level background having skilled attendance at birth. Education exposes women to information and knowledge on the importance of utilization of SBA and thus skilled birth attendance increases with secondary education and above. According to (Kabakyenga et al., 2012), women with secondary education and above are more likely to use SBA’s than those with lower levels of education. Indeed, maternal education was significantly associated with Skilled Birth Attendance ($\chi^2=12.934$; df=2; $p=0.002$; $C=0.279$). This finding is in tandem with those of (Ochako et al., 2011; Worku et al., 2013) who reported that maternal education has a significant bearing on use of SBA.

Table 4.11 further indicates that half (50.0%) of women whose spouses had secondary and higher level of education had skilled attendance services at birth, while more women (65.6%) whose spouses had no formal education had no access to skilled services at delivery. Spousal education level acts as an enabling factor for utilization of SBA. However, spousal education level was not significantly associated with Skilled Birth Attendance ($\chi^2=1.590$; df=1; $p=0.451$; $C=0.106$). The finding contradicts those of Daniels et al., (2013) when they reported that spousal educational level was significantly associated with assistance at delivery by a trained medical personnel.

Results in Table 4.11 also indicated that three fifths (60.0%) of women who earned more than 4,000 shillings had skilled attendance at birth, while more than three fifths (64.7%) of the women who earned less than 4,000 shillings did not have skilled attendance during the birth of their current child. Maternal income was not significantly associated with Skilled Birth Attendance ($\chi^2=3.113$; df=1; $p=0.078$; $C=0.233$). The study finding is inconsistent with that of Stenlund (2012) who contended that women belonging to the poor and poorest
wealth groups are more likely to receive unskilled assistance than their counterparts in the richest and richer wealth groups.

Results in Table 4.11 show that more than three fifths (63.2%) of women whose spouses earned less than 4,000 shillings did not receive skilled attendance at birth while (60.5%) of those whose spouses earned more than 4,000 shillings received skilled attendance at birth. These proportions are about the same. Hence, spousal income level is not significantly associated with Skilled Birth Attendance ($\chi^2=0.037; \text{df}=1; p=0.847; C=0.025$). Hence we conclude that spousal income level does not have a significant association with use of SBA.

4.3.4 Relationship between Socio-Demographic Characteristics and utilization of maternal health care services as measured by Trimester women sought ANC care

Table 4.12 shows that none of the Socio-Demographic characteristics had a significant association with trimester in which women sought ANC care.

Age ($\chi^2=.001; \text{df}=1; p=.982; C=.002$) and marital status ($\chi^2=.224; \text{df}=1; p=.636; C=.042$) were not significantly associated with trimester the woman started ANC visits. These findings are inconsistent with those of (Daniels et al., 2013) who stated that age and marital status plays a significant role in use of ANC services within the first trimester. Religion was not significantly associated with trimester ($\chi^2=.941; \text{df}=2; p=.625; C=.086$). These findings are inconsistent with those of (Olayinka, Joel, & Bukola, 2012) who contended that there was a relationship between religion and trimester women started their ANC visits.
Table 4. 12: Relationship between Socio-Demographic Characteristics and Trimester women sought ANC care

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Trimester</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; &amp; 3&lt;sup&gt;rd&lt;/sup&gt; Trimesters</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td>.001</td>
<td>1</td>
<td>.982</td>
<td>.002</td>
</tr>
<tr>
<td>Below 28 years</td>
<td>24.0</td>
<td>76.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>23.8</td>
<td>76.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td>.224</td>
<td>1</td>
<td>.636</td>
<td>.042</td>
</tr>
<tr>
<td>Married</td>
<td>24.6</td>
<td>75.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>18.2</td>
<td>81.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td>.941</td>
<td>2</td>
<td>.625</td>
<td>.086</td>
</tr>
<tr>
<td>Christianity</td>
<td>21.1</td>
<td>78.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>28.3</td>
<td>71.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td>.302</td>
<td>2</td>
<td>.860</td>
<td>.049</td>
</tr>
<tr>
<td>Nullipara</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>28.6</td>
<td>71.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multipara</td>
<td>22.4</td>
<td>77.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultipara</td>
<td>26.2</td>
<td>73.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>.803</td>
<td>2</td>
<td>.669</td>
<td>.080</td>
</tr>
<tr>
<td>No formal education</td>
<td>26.3</td>
<td>73.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>20.8</td>
<td>79.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>0.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>.842</td>
<td>2</td>
<td>.656</td>
<td>.085</td>
</tr>
<tr>
<td>No formal education</td>
<td>31.0</td>
<td>69.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>24.2</td>
<td>75.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td>.899</td>
<td>1</td>
<td>.343</td>
<td>.136</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>22.6</td>
<td>77.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td>.089</td>
<td>1</td>
<td>.765</td>
<td>.042</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>17.6</td>
<td>82.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>21.2</td>
<td>78.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)

Additionally, Parity was not significantly associated with trimester women started their ANC visits (\( \chi^2=.302; \) df=2; \( p=.860; \) C=.049). These findings are inconsistent with those of
(Daniels et al., 2013) who contended that parity has a bearing on trimester that women start receiving antenatal care.

Maternal education was not significantly associated with trimester ($\chi^2=.803; df=2; p=.669; C=.080$). The study findings are consistent with those of (Daniels et al., 2013) who stated that education level did not have a significant relationship with use of ANC during the first trimester. In addition, spousal education was not significantly associated with trimester ($\chi^2=.842; df=2; p=.656; C=.085$). The study findings are contrary to those of (Daniels et al., 2013) who contended that spousal education level was associated with trimester women start receiving antenatal care.

Maternal income ($\chi^2=.899; df=1; p=.343; C=.136$) and spousal income ($\chi^2=.089; df=1; p=.765; C=.042$) were not significantly associated with the trimester they started ANC visits.

### 4.3.5 Women’s Preference and Perception of ANC Services Offered at the Healthcare Facilities

Results from Table 4.13 indicate that, more than four fifths (80%) of women visiting a dispensary, a health centre or a sub-district hospital reported being happy with the facility space, neatness and adequacy of privacy that was provided. Of women visiting both categories of facilities, less than a tenth (6.4%) of them preferred being attended to by a male provider with more than two fifths (45.6%) of those visiting the dispensary preferring a female health care provider and those attending health centres and sub-district hospital accounting for less than two fifths (35.9%) preference of female health care provider. This
could possibly be explained by either cultural issues surrounding child birth in the community.

Table 4.13: Women’s preference and perception of ANC services offered in the health facilities

<table>
<thead>
<tr>
<th></th>
<th>Dispensary (n= 125)</th>
<th>Health Centre + Sub district hospital (n= 64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waiting time (minutes) Mean</strong></td>
<td>39.08</td>
<td>54.61</td>
<td>.010**</td>
</tr>
<tr>
<td><strong>Happy with waiting time (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Yes</td>
<td>99.2</td>
<td>85.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with facility space (%)</strong></td>
<td></td>
<td></td>
<td>.301</td>
</tr>
<tr>
<td>Yes</td>
<td>83.2</td>
<td>88.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.8</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td><strong>Happy with neatness (%)</strong></td>
<td></td>
<td></td>
<td>.327</td>
</tr>
<tr>
<td>Yes</td>
<td>93.6</td>
<td>89.1</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6.4</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td><strong>Adequate privacy (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Yes</td>
<td>92.0</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred gender of provider (%)</strong></td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Male</td>
<td>6.4</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45.6</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>48.0</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td><strong>Preferred type of provider (%)</strong></td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Doctor</td>
<td>53.6</td>
<td>53.1</td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>12.0</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td>20.8</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Traditional Birth Attendant</td>
<td>4.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>A combination</td>
<td>4.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>5.6</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td><strong>Would you come back to this facility (%)</strong></td>
<td></td>
<td></td>
<td>.129</td>
</tr>
<tr>
<td>Yes</td>
<td>91.2</td>
<td>93.8</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.6</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>7.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td><strong>Will you recommend this facility to others (%)</strong></td>
<td></td>
<td></td>
<td>.413</td>
</tr>
<tr>
<td>Yes</td>
<td>96.8</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.4</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *:$p \leq 0.05$  **: $p \leq 0.01$
Table 4.13 further presents women’s preferences and perceptions of ANC services that are offered at the dispensaries, health centres and sub-district hospital in Ganze District. More than 90% of women attending dispensaries or either health centre or sub-district hospital reported that they would return to the same health facility or would recommend it to others. The mean waiting time in the health centre and sub-district hospital per visit was significantly higher (54.61 minutes) than that in the dispensaries (39.08 minutes). Contrary to expectations, more (99.2%) women were happy with the waiting time at the dispensaries compared to health centres and sub-district hospitals (85.9%), with the latter being higher in the health care delivery system hierarchy in the country.

Results in Table 4.13 show that more than two fifths (48.0%) of women at the dispensaries had no preference on the preferred gender of provider with slightly more than three fifths (60.9%) at the health centres and sub-district hospitals having no preference for gender of health provider. This could be attributed to the fact that both are trained professionals as supported by field interviews and observations. Findings show that half (50%) of women visiting both set of facilities preferred being attended to by a doctor with only 1.6% of those visiting health centres and sub-district hospitals preferring TBA’s as opposed to 4% of those visiting the dispensary. There is a significant relationship between category of facility and waiting time (p=0.010) and the preferred type of provider (p=0.001).

4.3.6 Proportion of women who felt reassured about common pregnancy related concerns by health care providers

Study findings on reassurance patterns that women received from their providers about common pregnancy related issues are avidly presented in Table 4.14. Overall, among the
women who attended either a health facility or sub-district hospital, slightly more than four fifths (83%) felt reassured about the position of the baby and that of their own health. However, 87.8% of women who visited dispensaries did not receive information about the size of their unborn baby with more than three fifths (62.7%) receiving information about foetal abnormality. More than three fifths (68.3%) of our total sample who visited the dispensary had received information about the position of the baby, over three fifths (62.6%) on foetal abnormality and over four fifths (82.9%) on mothers own health and those who visited either a health centre or a sub-district hospital had received information about the position of the baby (83.9%), size of the baby (58.1%), foetal abnormality (67.7%) and mothers own health (87.1%) and felt reassured except that only (12.2%) of those who visited dispensaries received information on the size of their babies.

Significantly, those women visiting either a health centre or a sub-district hospital feel much more reassured about the four highlighted pregnancy related complications than those visiting the dispensaries. Women visiting a health centre or a sub-district hospital were significantly associated with receiving information about the position of the baby (p=0.23) and the size of the baby (p=0.001). These findings corroborate those of a study carried out in Gambia by Jallow et al., (2012) which observed that category or type of health facility had a bearing on receiving information about position and size of the unborn baby with women attending private health facilities likely to receive such information than those attending public health facilities.
Table 4.14: Proportion of women who were reassured about common pregnancy related concerns by their service providers

<table>
<thead>
<tr>
<th></th>
<th>Women who felt reassured</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dispensary (n=125)</td>
</tr>
<tr>
<td><strong>Position of the baby (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>68.3</td>
</tr>
<tr>
<td>No</td>
<td>31.7</td>
</tr>
<tr>
<td><strong>Size of the baby (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12.2</td>
</tr>
<tr>
<td>No</td>
<td>87.8</td>
</tr>
<tr>
<td><strong>Foetal abnormality (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>62.6</td>
</tr>
<tr>
<td>No</td>
<td>37.4</td>
</tr>
<tr>
<td><strong>Mother’s own health (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>82.9</td>
</tr>
<tr>
<td>No</td>
<td>17.1</td>
</tr>
</tbody>
</table>

Note: p values *: p ≤ 0.05  **: p ≤ 0.01

However, no significant relationship exists between receiving information on foetal abnormality (p=0.491) and mothers own health (p=0.461) and the category of health facility one visits. This finding is inconsistent with that of Jallow et al., (2012) who contended that category of facility had a significant association with receiving information about foetal abnormality and the heath of the mother during the pregnancy term. Thus, findings in Table 4.14 clearly show that women of reproductive age (18-49) in Ganze District would prefer to visit either a health centre or a sub-district hospital owing to reassurance they get concerning complications to their unborn children and that of their own health.
4.4: Logistic Regression Analyses

Binomial logistic regression was undertaken because it examines the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). Binomial logistic regression was undertaken for the three dependent variables: Place of Delivery, Number of ANC visits to the clinic before birth of current child and Skilled Birth Attendance which is without doubt the single most critical intervention in reducing maternal mortalities and morbidities (Mpembeni et al., 2007).

In this part of the analysis, only five socio-demographic variables were included in the model: age, marital status, religion, education and parity. The rationale behind this is that preliminary analysis showed that only these five socio-demographic variables were significant either at the bivariate and multivariate level of analysis.

4.4.1 Binary Logistic Regression on Socio-Demographic Characteristics and Institutional Delivery Service Utilization

In Table 4.15 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization of Institutional Delivery services. Results from Table 4.15 indicate that except for mother’s age and level of education, all the selected socio-demographic characteristics are significant predictors of utilization of institutional delivery services in Ganze district.
Table 4.15: Binary Logistic Regression results with odds ratios and 95% confidence interval for Institutional Delivery service utilization

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Prime/Secondary</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td><strong>0.137</strong></td>
</tr>
<tr>
<td>Age Below28 years</td>
<td>153</td>
<td>28 years and above</td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
</tr>
<tr>
<td>Marital status</td>
<td>153</td>
<td>Married</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
</tr>
<tr>
<td>Marital status</td>
<td>153</td>
<td>Other statuses</td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td>Christian</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td>Other religions &amp; No Religion</td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td>No formal education</td>
<td>1.915</td>
<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td>Some formal education</td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td>Primiparae®</td>
<td>1.915</td>
<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td>Multiparae</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td>(1.618-21.668)</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td>Grandmultiparae</td>
<td>1.915</td>
<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
</tr>
</tbody>
</table>

Missing Cases =36 ® - Reference category; Note: p values *:p ≤ 0.05 **:p ≤ 0.01

From Table 4.15, it is evident that Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) likely to have institutional delivery service utilization than Primiparae women. Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) likely to have institutional delivery service utilization than Primiparae women. Institutional delivery service utilization was also more common among women belonging either to Islam, ATR and those women who professed no religion (AOR 3.091,
95% CI, 1.447-6.602, p=0.004). The probability was much less for women who were unmarried (AOR 0.170, 95% CI 0.039-0.749, p=0.019).

**4.4.2 Regression on Socio-Demographic Characteristics and Number of ANC Visits**

In Table 4.16 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the number of ANC visits made to the clinic.

**Table 4.16: Binary Logistic Regression results with odds ratios and 95% confidence interval for Number of ANC visits**

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald df</th>
<th>Exp(B) CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below28 years</td>
<td>189</td>
<td>1.766</td>
<td>0.844</td>
<td>4.384</td>
<td>1 5.849 (1.120-30.553)</td>
<td>0.036*</td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td>-1.320</td>
<td>0.573</td>
<td>5.297</td>
<td>1 0.267 (0.087-0.822)</td>
<td>0.021*</td>
</tr>
<tr>
<td>Married</td>
<td>189</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religious Affiliation</strong></td>
<td></td>
<td>0.080</td>
<td>0.362</td>
<td>0.048</td>
<td>1 1.083 (0.533-2.199)</td>
<td>0.826</td>
</tr>
<tr>
<td>Christian</td>
<td>189</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Respondents Education status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>189</td>
<td>-0.153</td>
<td>0.407</td>
<td>0.141</td>
<td>1 0.859 (0.387-1.906)</td>
<td>0.708</td>
</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparæe®</td>
<td>36</td>
<td>1.872</td>
<td>.577</td>
<td>10.515</td>
<td>1 6.499 (2.097-20.145)</td>
<td>0.003**</td>
</tr>
<tr>
<td>Primiparæe</td>
<td>29</td>
<td>1.508</td>
<td>0.481</td>
<td>9.841</td>
<td>1 4.516 (1.761-11.585)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparæe</td>
<td>81</td>
<td>1.314</td>
<td>0.609</td>
<td>4.660</td>
<td>1 3.722 (1.129-12.273)</td>
<td>0.031*</td>
</tr>
<tr>
<td>Grandmultiparæe</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

® - Reference category; Note: p values *: p ≤ 0.05 **: p ≤ 0.01
Results from Table 4.16 indicate that mother’s age, marital status and parity are significant predictors of the number of ANC visits women will make before delivery in Ganze district.

From Table 4.16, it is evident that women aged above 28 years (AOR 5.849, 95% CI 1.120-30.553, p=0.036) and those who were single, separated, divorced and widowed (AOR 0.267, 95% CI 0.087-0.822, p=0.021) were more likely to make four or more antenatal visits to the clinic before delivery of their latest child. Further, parity was found to have a significant impact on the number of ANC visits with Primiparae women being six times (AOR 6.499, 95% CI 2.097-20.145, p=0.001) more likely to make four or more ANC visits than Nulliparae women; Multiparae women being five times (AOR 4.516, 95% CI 1.761-11.585, p=0.002) likely to make four or more visits than Nulliparae women and Lastly Grandmultiparae women being four times (AOR 3.722, 95% CI 1.129-12.273, p=0.031) likely to make four or more visits to the ANC clinic than Nulliparae women.

4.4.3 Binary Logistic Regression on Socio-Demographic Characteristics and Skilled Assistance during Delivery

In Table 4.17 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization skilled attendance during delivery. Results from Table 4.17 indicate that apart from mother’s age educational status, all other selected socio-demographic characteristics are significant predictors of utilization of skilled assistance during delivery in Ganze district.
Table 4.17: Binary Logistic Regression results with odds ratios and 95% confidence interval for Skilled Assistance during Delivery

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
</tr>
<tr>
<td>Marital status</td>
<td>153</td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td>0.330</td>
</tr>
<tr>
<td>Parity</td>
<td>153</td>
<td>1.915</td>
<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
<td>0.001**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td>(1.618-21.668)</td>
<td>0.007**</td>
</tr>
</tbody>
</table>

*Missing cases= 36 © - Reference category; Note:p values *:p ≤ 0.05 **: p ≤ 0.01

Table 4.17 depicts that Muslim women, those who believed in ATR and who professed no religion were three times (AOR 3.091, 95% CI 1.447-6.602, p=0.004) more likely to use the assistance of a Skilled Birth Attendant than Christian women. Further, women who were unmarried were (AOR 0.170, 95% CI 0.039-0.749, p=0.019) less likely to use the assistance of a Skilled Birth Attendant. Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) more likely to use a Skilled Birth Attendant than...
Primiparae women and Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) more likely to use a Skilled Birth Attendant during birth than Primiparae women.

4.4.4 Binary Logistic Regression on Socio-Demographic Characteristics and Trimester women started attending ANC clinic

In Table 4.18 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the trimester that women started making ANC visits to the clinic. Results from Table 4.18 indicate that all selected socio-demographic characteristics are not significant predictors of the timing that women start making ANC visits to the clinic in Ganze district.

Table 4.18: Binary Logistic Regression results with odds ratios and 95% confidence interval for Trimester women started attending ANC clinic

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald df</th>
<th>Exp(B) CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at most recent birth</td>
<td>125</td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1.038 (0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Below 28 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1.038 (0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Marital status</td>
<td>125</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1.474 (0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>0.789 (0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>125</td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1.326 (0.516-3.380)</td>
<td>0.558</td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>125</td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1.326 (0.516-3.380)</td>
<td>0.558</td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some formal</td>
<td></td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1.326 (0.516-3.380)</td>
<td>0.558</td>
</tr>
</tbody>
</table>
Results in Table 4.18 show that there exists no significant relationship between the socio-demographic characteristics of the respondents and the trimester that they first started attending ANC clinic. However, women aged above 28 years (AOR 1.038, 95% CI 0.306-3.515, p=0.952) and those who were unmarried (AOR 1.474, 95% CI 0.296-7.344, p=0.636) were one time more likely to make their first visit to the ANC clinic during the first trimester of their pregnancy. Multiparae women (AOR 1.708, 95% CI 0.284-10.295, p=0.559) were two times more likely to make their first ANC visit during the first trimester than Primiparae women with Grandmultiparae women (AOR 1.438, 95% CI 0.207-9.997, p=0.714) being one more time likely to make their first ANC visit during the first trimester than Primiparae women.

<table>
<thead>
<tr>
<th>Parity</th>
<th>125</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primiparae®</td>
<td>0.423</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>0.536</td>
<td>0.916</td>
<td>0.342</td>
<td>1</td>
<td>1.708</td>
<td>(0.284-10.295)</td>
<td>0.559</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>0.363</td>
<td>0.989</td>
<td>0.135</td>
<td>1</td>
<td>1.438</td>
<td>(0.207-9.997)</td>
<td>0.714</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Missing cases = 64 ® - Reference category; Note: p values *: p ≤ 0.05 **: p ≤ 0.01
CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary
This section presents a summary of the comparison of results of the relationship between the socio-demographic characteristics of the study respondents and variables used to measure the utilization of MHCS at both the Bivariate and Multivariate Logistic Regression Analyses to try and find out what determines utilization of maternal healthcare services in Ganze district. The findings of this study as shown in Table 5.1, Table 5.2, Table 5.3 and Table 5.4 confirm that the four indicators of utilization of maternal health care services are affected differently by the various socio-demographic characteristics in the entire Ganze district at the bivariate and multivariate levels of analyses. Further, the differences in the utilization of the different maternal health care services as espoused by the two levels of analyses will enable us to clearly focus on what should be done in an effort to improve utilization levels.

5.1.1 Comparison of results of relationship between socio-demographic characteristics and institutional service delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses
Table 5.1 shows the relationship of all the socio-demographic characteristics of the respondents with institutional delivery service utilization both at the Bivariate and Multivariate levels of analyses to find out what predicts institutional delivery service utilization.
Table 5.1: Comparison of results of relationship between Socio-Demographic characteristics and Institutional Service Delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>$p$</td>
</tr>
<tr>
<td>Age</td>
<td>1.539</td>
<td>0.463</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.043</td>
<td>0.056</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>21.384</td>
<td>0.001**</td>
</tr>
<tr>
<td>Respondents education</td>
<td>13.612</td>
<td>0.009**</td>
</tr>
<tr>
<td>Parity</td>
<td>18.216</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: $p$ values $*: p \leq 0.05$ $**: p \leq 0.01$

Findings in Table 5.1, interestingly show that while at the Bivariate level analysis, maternal education was significantly ($p=0.009$) related to institutional delivery services utilization, at the Multivariate level analysis it has no significant bearing on the utilization of the institutional delivery services ($p=0.330$). This is not to imply that education is not an important predictor of institutional delivery service utilization at all since it exposes women to access and knowledge on maternal health issues. This finding could be attributed in the way the variable education was coded and it could also be explained by the fact that there has been massive campaigns by the GoK and MoH in sensitizing the population about the importance of utilization of maternal health care services to avert the dangers that are associated with pregnancy and child birth through other media such as the radio, television and even the chiefs ‘barazas’. Marital status of the mothers is insignificant ($p=0.056$) at the bivariate level analysis but proves to be significant ($p=0.019$) at the multivariate level analysis. Religion and Parity of the mothers were found to be both significant at the bivariate and multivariate levels of analyses.
5.1.2 Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.2 shows the relationship of all the socio-demographic characteristics of the respondents and number of ANC visits that women make to the health facilities both at the Bivariate and Multivariate levels of analyses to find out what predicts the number of ANC visits that mothers make to the health facility.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>P</td>
</tr>
<tr>
<td>Age</td>
<td>7.063</td>
<td><strong>0.008</strong></td>
</tr>
<tr>
<td>Marital Status</td>
<td>7.747</td>
<td><strong>0.005</strong></td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>7.674</td>
<td><strong>0.022</strong></td>
</tr>
<tr>
<td>Respondents’ education</td>
<td>4.237</td>
<td>0.120</td>
</tr>
<tr>
<td>Parity</td>
<td>24.609</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

From Table 5.2, it is interesting to note that despite the fact we expected education to be a significant determinant of the number of ANC visits that mothers make to the clinic due to access and use of knowledge on maternal health issues acquired during formal education, maternal education is insignificant both at the Bivariate and Multivariate level analyses. Further, while religious affiliation is significant at the Bivariate level ($p=0.022$), it is insignificant ($p=0.826$) at the Multivariate level analysis after controlling for the effects of the other variables under study.

Age of the mothers, marital status and parity prove to be significant at the 95.0%
confidence interval both at the Bivariate and Multivariate level analyses as shown in Table 5.2. The study found out that mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the number of visits they make to the health facility at the Multivariate regression analysis level as indicated by these findings.

5.1.3 Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendants at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.3 shows the relationship of all the socio-demographic characteristics of the respondents and the use of Skilled Birth Attendants (SBA) both at the Bivariate and Multivariate levels of analyses to find out what predicts utilization of Skilled Birth Attendants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th></th>
<th>Logistic regression</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>( p )</td>
<td>( \chi^2 )</td>
<td>( p )</td>
</tr>
<tr>
<td>Age</td>
<td>1.530</td>
<td>0.216</td>
<td>2.216</td>
<td>0.137</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.634</td>
<td>\textbf{0.018*}</td>
<td>5.485</td>
<td>\textbf{0.019*}</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>13.463</td>
<td>\textbf{0.001**}</td>
<td>8.492</td>
<td>\textbf{0.004**}</td>
</tr>
<tr>
<td>Respondents education</td>
<td>12.934</td>
<td>\textbf{0.002**}</td>
<td>0.949</td>
<td>0.330</td>
</tr>
<tr>
<td>Parity</td>
<td>16.951</td>
<td>\textbf{0.001**}</td>
<td>12.301</td>
<td>\textbf{0.002**}</td>
</tr>
</tbody>
</table>

Note: \( p \) values \*: \( p \leq 0.05 \) \( \text{**} \): \( p \leq 0.01 \)

From Table 5.3, apart from the age of the mothers; marital status, religious affiliation, maternal education, and parity all prove to be significant at the 95.0% confidence interval at the Bivariate level of analysis. However, while marital status, religious affiliation and parity still prove to be significant at the Multivariate level of analysis and thus strongly
predicting the utilization of Skilled Birth Attendants, but maternal education does not.

5.1.4 Comparison of results of relationship between Socio-Demographic characteristics and trimester mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.4 shows the relationship of all the socio-demographic characteristics of the respondents and the trimester that mothers started attending ANC clinic both at the Bivariate and Multivariate levels of analysis to find out what predicts utilization of maternal health care services.

Table 5.4: Comparison of results of relationship between Socio-Demographic characteristics and trimester that mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>χ²</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>0.001</td>
<td>0.982</td>
</tr>
<tr>
<td>Marital Status</td>
<td>0.224</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>0.941</td>
<td>0.625</td>
</tr>
<tr>
<td>Respondents education</td>
<td>0.803</td>
<td>0.669</td>
</tr>
<tr>
<td>Parity</td>
<td>0.302</td>
<td>0.860</td>
</tr>
</tbody>
</table>

Note: p values *:p ≤ 0.05 **: p ≤ 0.01

From Table 5.4, it is evident that all the socio-demographic characteristics have no significant bearing on the trimester that women start attending antenatal clinic for their check-ups both at the Bivariate and Multivariate levels of analyses.

5.2 Conclusion
The findings of this study confirm that a woman’s marital status, religious affiliation and parity are strong predictors of institutional delivery service utilization. Further, mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the
number of visits that the mothers make to the health facility and lastly marital status, religious affiliation and parity strongly predict utilization of SBA’s. In addition, Parity proved to be a strong predictor of utilization of almost all the four maternal health care services apart from trimester that women started attending ANC clinic as it predicts their utilization both at the bivariate and multivariate level analysis at 95.5% confidence interval.

More women who are unmarried, those affiliated to non-Christian faiths, low parity women and those aged 28 years and above utilize maternal health care services more.

5.3 Recommendations

Evidence from this study enables making of suggestions and recommendations in three vital areas. First, the findings have some implications on the formulation of public health policies that will lower maternal morbidities and mortalities by improving utilization of MHCS. Second, it has practical implications on public health care practice and lastly it has implications for further research to uncover whatever has not been researched on in this study and others and thus update sociological knowledge on this important topic to help reduce maternal morbidities and mortality.

5.3.1 Recommendations for Policy

1. It is recommended from the findings of this study that stakeholders in maternal health care such as the National and County governments and the Civil Society Organizations make deliberate policies that will involve women aged 28 years and above as role models to sensitize other women on the importance of making the required number of ANC visits.
2. Policy provisions can also be developed by county governments and the civil society organizations to enhance women utilization of maternal health care services through an incentive and reward system to those women who make the required ANC visits and deliver in institutional care or under SBA supervision.

3. It is recommended that the national government come up with a policy that will ensure that maternal health care services are provided in most public health care facilities on a daily basis and not on specific days so that expectant women can access the services whenever they need them.

4. Further, deliberate policy should be formulated to encourage county governments to have ANC facilities at sub county levels. Alternatively, it can be a matter of policy, especially at the county government level that most health facilities should have at least a delivery room and trained personnel to provide an opportunity for expectant women to access professional ANC services and deliver under the care of professional staff. Such a policy will enhance women delivery under professional care reducing maternal morbidity and mortality and that of their new born babies.

5. It is recommended through the Ministry of Education, Science and Technology that the government strengthen affirmative action as a matter of policy to ensure that girl child education is prioritised in order to improve educational standards of women. This is envisioned as a long term policy strategy that will provide them with avenues and opportunities of acquiring information about use and importance of utilizing maternal health care services.
6. It is recommended that public health policy on awareness on the importance of utilization of institutional delivery service be initiated with a clear focus on high parity women, women with low education levels and women who professed Islam and ATR. Such a policy strategy can be a panacea for ensuring enhanced utilization of institutional delivery to this segment of the population especially in the study area.

5.3.2 Recommendations for Practice

1. With regards to the prevailing pattern of late and irregular antenatal clinic attendance, it is recommended that there be awareness creation by maternal health care stakeholders such as governments and NGOs on (ANC timing) when mothers should commence their ANC visits and the number of visits they should make until they give birth.

2. It is recommended that there be awareness creation by the National and County governments, NGOs and FBOs on the importance of using institutional delivery service or skilled midwifery assistance/skilled birth attendance at every child birth as it helps in reducing maternal and child deaths.

3. It is recommended to health and development workers that improving community awareness and perception on skilled providers and their care through community meetings by targeting women who prefer non skilled health care providers and those who lack awareness on the importance of utilization of maternal health care
services to themselves and their unborn children will help in reducing maternal and child deaths.

4. It is recommended that a doctor be posted to serve in the district as most mothers said they would like to be attended to by a trained medical doctor and only Clinical Officers and nurses were found at their work stations during the study period.

5. It is recommended that at least one ambulance should be supplied to the district and it be stationed at a central facility where it can easily coordinate in case maternal emergencies occur.

6. It is recommended that efforts be made by the health providers to ensure patients privacy during ANC and delivery care is kept to improve institutional delivery thus enhancing utilization of a major maternal health care service thus reducing maternal mortality.

5.3.3 Recommendations for Further Research

1. Given the high maternal morbidity and mortality not only in the study area but in Kenya and the region, it is prudent for researchers to understand the why with regard to the persistency of the problem and the how best can governments and the civil society mitigate the problem.

2. It is recommended that further research be carried out to establish why is it that women who profess Islam make the required (four and more) number of ANC visits but rarely have Institutional delivery service utilization.
3. More research is also needed to bring out the rural urban differential in not only maternal health care utilization but the differential factors with significance influence on ANC visits and institutional delivery.

4. Further research is also prudent to focus on other determinants of maternal health care utilization not considered in this study. Understanding the multiplicity of factors with an influence on maternal health care utilization is key in the development of interventions that will work in reducing maternal morbidity and mortality including that of their infants.
REFERENCES


Appendix 1: Consent Form

CONSENT FORM

PART 1: INFORMATION SHEET

I am Stanley Wechuli Wanjala a postgraduate student at Pwani University registration number C50/PUC/2098/11 and E-mail address: (stanleywanjala@gmail.com) supervised by Professor Halimu Suleiman Shauri- E-mail address hshauri@yahoo.com. I am carrying out a research titled “Determinants of Maternal Health care Utilization in Ganze District, Kilifi County of Kenya.” I am going to give you information about all what the research entails and invite you to be part of this research as a respondent. If you have any questions later, you can ask.

Purpose of research

Maternal and child health are key health issues in the world. The reason I am doing this research is to find out the factors that affect utilization of maternal health care services and to establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care utilization in Ganze district. By so doing, I will be able to advice the government and other health stakeholders on best practices in maternal health and help in policy formulation.

The reason why I am inviting you to be a respondent is because I am inviting all women between the ages of 18-49 years to participate in this research. Your participation in this research is entirely voluntary- It is your choice whether to participate or not.

The information that you give during this research will be kept confidential. Information about you that will be collected during the research will be put away and no one but the researcher (I) will be able to see it. Any information on you will have a number on it instead of your name for confidentiality purposes. You can ask any questions regarding the study or your participation in this study.

PART 2: CERTIFICATE OF CONSENT

I have read the foregoing information or it has been read to me. I have had the opportunity to ask questions about it and any questions that have been asked have been answered to my satisfaction.

I consent voluntarily to participate as a respondent in this research.

Name of participant: ____________________________________________________________

Signature of participant: __________________________________________________________

Date: ___________________________________________________________________________
Appendix 2: Interview Schedule

DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN GANEZ DISTRICT, KILIFI COUNTY OF KENYA

INTERVIEW SCHEDULE

Dear respondent,
Please answer the questions to the best of your understanding. Your cooperation in this study is highly appreciated and all the information you provide will be treated with utmost confidentiality. Thank you for your cooperation.

Name of Health Facility: __________________________ ______________________
Category of Facility: [ ] Dispensary [ ] Health Centre [ ] Sub-District Hospital [ ] District Hospital
Ownership: [ ] Government [ ] Private for Profit [ ] Faith Based [ ] NGO/CBO
Division: _________________________________________ ______________________
Location: _________________________________________ _____________________
Sub-Location: _____________________________________ ______________________

PART I: SOCIO - DEMOGRAPHIC CHARACTERISTICS
Q1. Could you please tell me your age?
   a) 18-22 years [ ]
   b) 23-27 years [ ]
   c) 28-32 years [ ]
   d) 33-37 years [ ]
   e) 38-42 years [ ]
   f) 43-47 years [ ]
   g) 48-52 years [ ]

Q2. What is your marital status?
   a) Single [ ]
   b) Married [ ]
   c) Divorced [ ]
   d) Widowed [ ]
   e) Separated [ ]
   f) Other (State) ________________________________

Q3. What is your religious affiliation?
   a) Christian (Catholic) [ ]
   b) Christian (Protestant) [ ]
   c) Christian (SDA) [ ]
   d) Jewish [ ]
   e) Muslim [ ]
   f) Hindu [ ]
Q4. What is your level of education?
   a) Non Formal Education [  ]
   b) Some primary education [  ]
   c) Primary school Completed [  ]
   d) Some Secondary education [  ]
   e) Secondary school completed [  ]
   f) University (Bachelors) [  ]
   g) Other (State) ______________________________________

Q5. If married, or in a stable relationship, could you kindly state your spouse’s level of education?
   a) Non Formal Education [  ]
   b) Some primary education [  ]
   c) Primary school Completed [  ]
   d) Some Secondary education [  ]
   e) Secondary school completed [  ]
   f) University (Bachelors) [  ]
   g) Other (State) ______________________________________

Q6 (a) If have some level of education, have you undergone any formal professional training since completion/dropping out of school?
   a) Yes [  ]
   b) No [  ]
   (b) If Yes State which one(s)
       ______________________________________________________
       ______________________________________________________
       ______________________________________________________

Q7. What is your main source of income?
   a) Farming [  ]
   b) Government employee [  ]
   c) Employment private sector [  ]
   d) Employment NGO/CBO [  ]
   e) Employment FBO [  ]
   f) Small business person [  ]
   g) Casual Employee [  ]
   h) No source of income at the moment [  ]
   i) Other (State) ______________________________________

Q8. What would you consider as the main source of income for your spouse/partner?
   a) Farming [  ]
   b) Government employee [  ]

---

1 Traditional Religion include nominal Christian religions such as Akorino, Legio Maria, Roho Msalabwa, Dini ya Msambwa etc
c) Employment private sector [ ]
d) Employment NGO/CBO [ ]
e) Employment FBO [ ]
f) Small business person [ ]
g) Casual Employee [ ]
h) No source of income at the moment [ ]
i) Other (State) ___________________________________________

Q9. What is your average monthly earning from all your sources of income?
  a) KShs. 2000 or less [ ]
  b) KShs. 2001 to 4000 [ ]
  c) KShs. 4001 to 6000 [ ]
  d) 6001 to 8000 [ ]
  e) 8000 to 10,000 [ ]
  f) 10,0000 to 12,000 [ ]
  g) 12001 to 14000 [ ]
  h) 14001 to 16000 [ ]
  i) 16000 to 18000 [ ]
  j) 18001 to 20000 [ ]
  k) KShs. 20001 or more (State amount) __________________________________________

Q10. What is the approximate average monthly earnings of your spouse or partner from all the sources?
  a) KShs. 2000 or less [ ]
  b) KShs. 2001 to 4000 [ ]
  c) KShs. 4001 to 6000 [ ]
  d) 6001 to 8000 [ ]
  e) 8000 to 10,000 [ ]
  f) 10,0000 to 12,000 [ ]
  g) 12001 to 14000 [ ]
  h) 14001 to 16000 [ ]
  i) 16000 to 18000 [ ]
  j) 18001 to 20000 [ ]
  k) KShs. 20001 or more (State amount) __________________________________________

Q11. (a) How many children do you have in total? (Indicate number by Gender)
    Males: ________ Females: ________ Total: ________
(b) Could you kindly indicate their age beginning from the eldest to this one?
Q 12. Who makes the decision for you to seek maternal health care?
   - Self [ ]
   - Husband [ ]
   - Husband and me [ ]
   If other explain___________________________ ____________________

SECTION B: KNOWLEDGE OF ANC

Q1. How did you first know about ANC?
   - Through friends [ ]
   - School [ ]
   - Hospital [ ]
   - Others [ ]

Q2. Are you aware of the services rendered at ANC Clinic?
   - Yes [ ]
   - No [ ]

Q3. ANC helps detect complications during pregnancy
   - Yes [ ]
   - No [ ]

Q4. ANC helps reduce maternal mortality and morbidity
   - Yes [ ]
   - No [ ]

SECTION C: ACCESS TO REPRODUCTIVE HEALTHCARE

Q1. Have you ever delivered any of your children in the hospital?
   - Yes [ ]
   - No [ ]
Q2. Kindly indicate the place of birth of your children beginning from the first born to the last born. (1=Hospital with the help of a trained health professional; 2=Home with the help of Traditional Birth Attendant; 3= At home alone or with the help of a relative; 4=At the Traditional Birth Attendants special clinic/home; 5= On the way to hospital with the help of a stranger/relative; 6=Other (State))

<table>
<thead>
<tr>
<th>Child number</th>
<th>Place of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
</tbody>
</table>

Q3. (a) Reflecting back on your first pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

(c) How many visits did you make to the ante natal clinic before the delivery of your first born child?

(d) How many visits did you make to the post natal clinic after the delivery of your first born child?

Q4. (a) Reflecting back on your last pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)
(c) How many visits did you make to the ante natal clinic before your latest delivery?

(c) How many visits did you make to the post natal clinic after your latest delivery?

Q5. How far is the nearest clinic offering maternal health services? *(How long does it take for an adult to walk to the facility?) NB: one Kilometre may require 15 minutes of walk.*

Q6. In your view, is the distance to the facility a concern? *(Explain your answer)*

Yes [ ]
No [ ]

Reason:

Q7. In your view, is the attitude of the health care providers a concern? *(Explain your answer)*

Yes [ ]
No [ ]

Reason:

Q8. In your view, does your religion influence how you seek ANC services? *(Explain your answer)*

Yes [ ]
No [ ]

Reason:

Q9. When visiting the nearest health facility during your pregnancy clinic appointments, what was the predominant means of transport used? *(Probe for cost and duration in minutes to facility)*

<table>
<thead>
<tr>
<th>Means</th>
<th>Tick one used</th>
<th>Cost (KShs.)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Motorcycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bicycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Own/family Motorcycle
5. Own/family bicycle
6. Private car/vehicle
7. Public Service vehicle
8. Other (State) __________

Q10. In the facility you visited (for those who did not visit, the nearest healthcare facility), what maternal healthcare services does that facility offer? (Kindly indicate whether those attending received the services)

<table>
<thead>
<tr>
<th>Service</th>
<th>Availability</th>
<th>Received service in last pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasound services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11. During your last visit to the maternal health care facility, did you receive information on the following services?

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foetal abnormality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your health status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q12. (i) are you aware of family planning methods?
   a) Yes [ ]
b) No [  ]
(ii) Have you ever used any family planning method?
   a) Yes [  ]
   b) No [  ]
   
   (iii) If YES which method have you used? *(Probe whether he is currently using the method)*

<table>
<thead>
<tr>
<th>Methods</th>
<th>Ever Used</th>
<th>Currently Using</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pills (Postinor 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IUD (intrauterine device)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Norplant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Condoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sexual Abstinence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Tubal ligation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Calendar/safe days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13. (i) Have you ever stopped using any of the family planning methods at any one time?
   Yes [  ]
   No [  ]
   (ii) If you have ever stopped, kindly provide reason for your decision

Q14 Are you aware of any taboos related to child birth in your community?
   Yes [  ]
   No [  ]

If yes, list them

b) Do you believe in these taboos?
   Yes [  ]
   No [  ]

If yes, which taboos do you believe in?
Perceptions: Maternal and Child health practices

Q1. When visiting the nearest health facility during your pregnancy clinic appointments, how many minutes did you wait before the healthcare provider attended to you?

___________________________________________________ ______________________

Q2. Are you happy with the time you spent with the health care provider during your appointments?
   Yes [  ]
   No [  ]

   a) If yes, why?

   ____________________________________________________ ______________________
   ____________________________________________________ ______________________

   b) If No, would you prefer to have?
   A lot more time [  ]
   A little more time [  ]
   Time is about right [  ]

   b) Are you happy with the facility space?
   Yes [  ]
   No [  ]

   Explain____________________________________________________
   ____________________________________________________ ______________________

   c) Are you happy with the facility neatness?
   Yes [  ]
   No [  ]

   Explain____________________________________________________
   ____________________________________________________ ______________________

   d) Who is your preferred gender of provider?
   Male [  ]
   Female [  ]
   No preference [  ]

   Explain____________________________________________________
   ____________________________________________________ ______________________

   e) Who is your preferred type of provider?
   Doctor [  ]
   Nurse [  ]
Midwife [   ]
Traditional Birth Attendant [   ]
A combination [   ]
No preference [   ]

Explain____________________________________________________________________________
____________________________________________________________________________

f) Would you come back to this facility?
Yes [   ]
No [   ]
Don’t know [   ]
Give reasons for your answer
____________________________________________________________________________

__g) Will you recommend this facility to others?
Yes [   ]
No [   ]
Don’t know [   ]
Give reasons for your answer
____________________________________________________________________________

Q3. Are you happy with the privacy that you were accorded during the consultation with the health care provider?
Yes [   ]
No [   ]

Q4. How would you rate the following services that you received at the health facility?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of food served</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reception upon arrival at the health facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude of medical personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of equipments/facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q5. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your first visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very good</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very poor</td>
</tr>
</tbody>
</table>
Palpation of the abdomen
Tetanus vaccination
Weight measurement
Height taken
Blood pressure taken
Iron supplementation
Urine test
Stool test
Anti-malarial treatment
Health talk
Provision of PMTCT
Normal Delivery Services
C-Section Deliveries
Registration of births
Immunization of newborn
Provision of treated bed nets
Counselling on family planning options

Q6. If you were given another option (healthcare facility) in your first visit, would you have still attended this facility?
   Yes [  ]
   No [  ]

   Explain______________________________________________________________

Q7. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your last visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
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<tr>
<td>Tetanus vaccination</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
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</tr>
<tr>
<td>Height taken</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
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</tr>
<tr>
<td>Urine test</td>
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<tr>
<td>Stool test</td>
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<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
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<tr>
<td>Provision of PMTCT</td>
<td></td>
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<tr>
<td>Normal Delivery Services</td>
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<tr>
<td>C-Section Deliveries</td>
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<tr>
<td>Registration of births</td>
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<td></td>
<td></td>
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<tr>
<td>Immunization of newborn</td>
<td></td>
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<td></td>
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<tr>
<td>Provision of treated bed nets</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q8. If you were given another option (healthcare facility) in your last visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain__________________________________________________________

Q9. Any additional comments
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Thank you for your cooperation.
Appendix 3: Certificate of Ethical Approval

NACOSTI ACCREDITED

Pwani UNIVERSITY

ETHICS REVIEW COMMITTEE
ACCREDITED BY THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION (NACOSTI, KENYA)

CERTIFICATE OF ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:
Mr. Stanley Wechuli Wanjala

REFERENCE NO:
ERC/MA/003/2014

ENTITLED:
Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya

TO BE UNDERTAKEN AT:
Ganze, Kilifi, Kenya

FOR THE PROPOSED PERIOD OF RESEARCH
HAS BEEN APPROVED BY THE ETHICS REVIEW COMMITTEE
AT ITS SITTING HELD AT PWANI UNIVERSITY, KENYA
ON THE 15TH DAY OF JANUARY 2014

CHAIRMAN   SECRETARY   LAY MEMBER

[Signatures]

15 JAN 2014

Pwani University, www.puw.ac.ke, email: pthomas@pwanuniversity.ac.ke, tel: 0719 182218.
The ERC. Giving Integrity to Research for Sustainable Development

PTO
Appendix 4: Graduate School Research Authorization

Pwani UNIVERSITY
SCHOOL OF GRADUATE STUDIES

Ref: PU/SGS/PRAL/83/vol.1
16th January, 2014

Mr. Stanley W. Wanjala
School of Humanities and Social Sciences
PWANI UNIVERSITY

SUBJECT: RESEARCH AUTHORIZATION

Following approval of your Masters research proposal by the Ethics Review Committee on 15th January, 2014, we hereby write to formally grant authorization for you to conduct research for a Master’s thesis entitled “Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya.”

You are advised to collect your original Certificate of Ethical Approval from the Ethics Review Committee office.

We wish you all the best as you embark on this critical stage of your Masters programme.

Yours faithfully,

Prof. Mlewa C. Mwatete
DEAN, SCHOOL OF GRADUATE STUDIES,

Cc
- Deputy Vice Chancellor (ASA)
- Dean, School of Humanities and Social Sciences
- Chairman, Social Sciences

DEPUTY COUNTY COMMISSIONER
GANZE SUB-COUNTY
DATE: 7/11/14
Appendix 5: Research Authorization from Department of Health

COUNTY GOVERNMENT OF KILI FI
DEPARTMENT OF HEALTH
KILI FI COUNTY HOSPITAL

Telephone (041) 7522777
Fax: (041) 7522025
Email: kdh@kamr-wellcome.org
When Replying/Telephoning quote
Ref No.: ST.1/38/VOL.I/

OFFICE OF THE MEDICAL
SUPERINTENDENT
KILI FI COUNTY HOSPITAL
P. O. Box 9 - 80108
KILI FI
DATE: 31st March, 2014

Stanley Wechuli Wanjala
Pwani University
PO Box 195-80108
Kilifi County,
KENYA

Dear Mr Stanley, W. Wanjala,

RE: AUTHORIZATION TO CARRY OUT STUDY IN GANZE

The research committee of health Kilifi has received your request to carry out a study on “Determinants of Maternal Care Service Utilization in Ganze District, Kilifi County of Kenya”.

After going through the proposal, we grant you approval to proceed with your research. This should not exceed a time period of 90 days. Please note you can always ask for an extension, should you need it.

Upon completion of the study, you will be required to share your results with the County Health Management Team.

Good luck!

Dr Barbara Mambo, Chairperson
Kilifi County Research Coordination Committee
KILIFI

Cc:
The Executive Secretary of Health- KILIFI COUNTY
The Director of Health Services-KILIFI COUNTY
Appendix 6: Map of Ganze District
DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN
GANZE DISTRICT, KILIFI COUNTY OF KENYA

STANLEY WECHULI WANJALA

C50/PUC/2098/11

A thesis submitted in partial fulfilment of the requirements for the Degree of Master
of Arts of Pwani University

© August, 2015
DECLARATION

Declaration by the Student

This thesis is my original work and has not been presented for a degree in any other University or any other award

Signature.........................................             Date...........................................

Stanley Wechuli Wanjala
C50/PUC/2098/2011

Declaration by the Supervisors

We confirm that that the work reported in this thesis was carried out by the candidate under our supervision. No part of this Thesis may be reproduced without the prior written permission of the author and/or Pwani University

Signature.........................................             Date...........................................

Prof. Halimu Suleiman Shauri; PhD
Sociologist; Department of Social Sciences
(Pwani University)

Signature.........................................             Date...........................................

Dr. Francis Wokabi; PhD
Philosopher; Department of Philosophy and Religious Studies
(Pwani University)
DEDICATION

This thesis is dedicated to the pillars of my life: God, my adoring parents who remain my source of inspiration, my siblings and fiancée.
ACKNOWLEDGEMENT

First, my heartfelt gratitude to my supervisors: Prof. Dr. Halimu Suleiman Shauri and Dr. Francis Gikonyo Wokabi. Thank you for your sage advice, guidance, encouragement and intellectual input from the initial to the final stage of this thesis development that enabled me to have an in-depth understanding of the subject under study. To my parents, thanks for the never ending love and unwavering support. My fiancée Yvonne Kuhnke, thanks for your unconditional love, encouragement and understanding even on days that you could not get my full attention. My colleague Bonventure Obeka, your constructive and insightful criticism, collaboration and willingness to assist when called upon have been tremendous assets. My colleagues and lecturers in the Department of Social Sciences, study respondents and medical staff from health facilities in Ganze District, thank you for making the study possible.
ABSTRACT

Maternal health care service utilization is an important health issue related to both maternal and child survival as it reduces maternal mortality and morbidity as well as improving the well being of mothers and their children before, during and after birth. Considering low utilization of maternal health care service especially in Sub-Saharan Africa, understanding what determines utilization becomes important. This study set out to examine determinants of maternal health care service utilization by women of reproductive ages (18-49 years) with a view to enhancing the achievement of Millennium Development Goal (MDG) number five (5). Four dependent variables: place of delivery, antenatal care, skilled attendance at birth and trimester women attended Antenatal Clinic (ANC) as well as six independent variables representing predisposing characteristics (mothers age at birth, marital status, religion, educational attainment, parity) and enabling factors (husbands educational attainment, income levels) were selected. Survey research design was used in data collection and the main data collection tool was an interview schedule. Multi-stage cluster sampling was used in sampling the health care facilities and convenient sampling was used to sample the respondents. Both descriptive and inferential statistics such as logistic regression analysis were applied to the analysis of the collected data. The key findings of the study show that religion, parity and maternal education were significant predictors of women’s place of delivery. Further, maternal age, marital status, and parity were found to be significantly associated with the number of ANC visits women make to the clinic. Marital status, religion and parity are all related to use of a skilled Birth Attendant at birth. Parity emerged to be the strongest predictor among all the other indicators of maternal health care service utilization considered in the study. In conclusion, the study was able to find out factors that affect utilization of maternal health care services in Ganze district thus achieving the study objective. Strategies to promote the utilization of Maternal Health Care Services should thus focus on the relevant predictors established in the models based on the binomial regression analyses. The findings of the study may help the Ministry of Health, policy makers and health related agencies and stakeholders to design appropriate and cost-effective intervention programmes targeting areas with most needs. This may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality while enhancing reproductive health and resource efficiency. Lastly, this study aims at stimulating further research in this area, thus bridging knowledge gaps and updating scientific knowledge on this important topic.
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List of Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

ATR – African Traditional Religion

ANC – Antenatal Care

CBS – Central Bureau of Statistics

ERC – Ethical Review Committee

FBO – Faith Based Organization

GDP – Gross Domestic Product

GoK- Government of Kenya

HBM - Health Belief Model

HIV – Human Immunodeficiency Virus

KDHS – Kenya Demographic and Health Survey

KHHEUS – Kenya Household Expenditure and Utilization Survey

KNBS – Kenya National Bureau of Statistics

KNHA- Kenya National Health Accounts

MDG’s – Millennium Development Goals

MHCS – Maternal Healthcare Services

MLR – Multivariate Logistic Regression
MoH – Ministry of Health

NACOSTI – National Commission for Science, Technology and Innovation

NCAPD- National Coordinating Agency for Population and Development

NGO – Non-Governmental Organization

OBA- Output Based Approach

PHC- Primary Health Care

PNC – Postnatal Care

POD – Place of Delivery

SBA – Skilled Birth Attendant

SDC – Social Demographic Characteristics

SMI – Safe Motherhood Initiative

SPSS – Statistical Package for Social Sciences

TBA – Traditional Birth Attendant

TI- Transparency International

UN – United Nations

UNFPA – United Nations Fund for Population Activities

UNICEF – United Nations International Children’s Emergency Fund
WB – World Bank

WHO – World Health Organization
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Three out of the eight Millennium Development Goals (MDG’s) relate to health. Goal number four is aimed at reducing child mortality rates, goal number six focuses on combating HIV/AIDS, malaria and other diseases and goal number five, which is the focus of this study, is aimed at improving maternal health by reducing maternal mortality by three quarters (75%) and achieving universal access to reproductive health between 1990 and 2015. This goal is monitored by two indices namely: maternal mortality ratio and proportion of births attended by skilled health personnel.

Globally, in the year 2008, there were an estimated 358,000 maternal deaths and of this, the developing world accounted for (355,000) or 99% (WHO, UNICEF, UNFPA, & The World Bank, 2010). These figures have financial implications for the health sector of affected countries. On the one hand, high income countries with high standards of living spend an average of 7.0% of Gross Domestic Product (GDP) on health and on the other hand, low income countries, with low standards of living, spend an average of only 4.2% on the health sector (Cieza & Holm, 2010). Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit, Dolea, & Braichet, 2010).

In the year 2000, 251,000 maternal deaths occurred in Africa and 40% of the deliveries were attended by a Skilled Birth Attendant (World Health Organization, 2005). Sub-
Saharan Africa accounted for slightly more than half (270,000) of the maternal deaths in 2005. An increase in maternal deaths over the years can be observed. Nearly three fifths (204,000) of the maternal deaths in 2008 occurred in the sub-Saharan Africa (WHO et al., 2010). Though there is a slight drop in maternal mortality rates from 2005-2008, the number is still high.

Kenya is one of the countries that suffered 65% of maternal deaths in 2008. It accounted for 7,900 (2.2%) of the global maternal deaths (WHO et al., 2010). According to the 2008-09 Kenya Demographic and Health Survey (KDHS) maternal mortality in Kenya remains high at 7.9% as only 44% of births are managed by health professionals and 43% are delivered in health facilities. These statistics clearly show that over half (56%) of deliveries are done by non-professionals and more than half (57%) of deliveries are done outside healthcare facilities. Between the periods 2003 – 2008/09, there was a rise in maternal mortality rates in Kenya from 0.6% to 0.8%, indicating an increase of 0.2% (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). This is not a good indication especially that MDG number five aims at improving maternal health care.

According to an official in the Ministry of Public Health, (Masha Joseph, 2011), quoted in the Standard Newspaper of Wednesday 11th May 2011, only 44% of deliveries in the Coastal Region are done in hospitals with many pregnant women relying on Traditional Birth Attendants (TBAs), while about 70% of 170,000 women still give birth at home. The Kilifi District Strategic Plan 2005-2010 points out that accessibility of health services was low and over half (57%) of the population lived over five kilometres to the nearest health facility (National Coordinating Agency for Population and Development, 2005). It is
against this background that a study of the determinants of maternal health care utilization in Ganze district in Kilifi County, Coastal Region of Kenya was mooted.

1.2 Statement of the Problem

The MDG’s are fresh in our minds and we have approached 2015. Millennium Development Goal number five, in particular, was aimed at reducing maternal mortality rate by 75.0% between 1990 and 2015 and to achieve universal access to reproductive health. The fact that the KDHS 2008-2009 reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities is a clear indication that there is underutilization of maternal health care professionals and facilities in the country, especially in the rural areas. What determines maternal health utilization therefore needs to be understood to improve this situation with a view of achieving MDG number five. In fact, it is very clear throughout the literature reviewed that there is a dearth of recent data on the determinants of maternal health care utilization. This is despite the fact that maternal healthcare services utilization is essential for the enhancement of maternal and child health. Accordingly, little was known about the current magnitude of use and factors influencing the use of maternal healthcare services, especially in Ganze district where the study was conducted. This study therefore examined the factors that determined the utilization of maternal health care service in Ganze district in Kilifi County, Coastal Region of Kenya.

1.3 Purpose of the Study

The purpose of the study was to examine factors that influence maternal health care service utilization by women of reproductive ages (18-49 years) with a view of enhancing the
achievement of MDG number five (5).

1.4 Specific Objectives

On the basis of the study’s purpose, the objective of the study was to:

1. Find out the influence of socio-economic and demographic factors on utilization of maternal health care services.

2. Establish the facility-specific factors that influence the utilization of maternal health care services in Ganze district.

3. Establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care service utilization in Ganze district.

1.5 Research Questions

1. What is the influence of socio-economic and demographic factors on utilization of maternal health care services?

2. Why are some healthcare facilities utilized more than others by women of reproductive ages (18-49 years) seeking maternal health care services?

3. What is the influence of the preferences and perceptions of women of reproductive ages (18-49) with regard to ANC services offered at the healthcare facilities in Ganze district on maternal health care utilization?

1.6 Significance of the Study

The results of this study could be beneficial as it was envisaged to add to the existing body
of scientific knowledge on the factors that influence maternal health care service utilization and the challenges that women face as they seek maternal health care services. This may act as a springboard for further research in this area and thus bridge knowledge gaps and update scientific knowledge on this important topic.

To the government, Ministry of Health as well as other health providers, findings of this research may help them work towards policy and practical improvements in provision of maternal health care services thus reducing the number of maternal deaths consequently contributing to the attainment of MDG number 5.

Third, this research may help the government and other key health care stakeholders avoid wastage of resources because they will be able to know the determinants of maternal health care service utilization. Accordingly, appropriate and cost-effective intervention programmes can be designed and targeted to the areas with most needs. Significantly, this may lead to prudent use of resources in the management of maternal health and hence mitigating maternal mortality and enhancement of reproductive health with desirable consequences on the health status of women and the population.

1.7 Scope and Limitations of the Study

1.7.1 Scope of the Study

The study was carried out in Ganze District of Kilifi County in the Coastal Region of Kenya.
1.7.2 Limitations of the Study

This was a survey research and as such attempted to understand study variables at one point in time. Accordingly, the study was limited in explaining causality and trends over time than a longitudinal or control group design on the determinants of maternal health care services utilization.

Due to ethical and legal considerations, the study only focused on women aged (18-49 years). Thus, the study was limited in that the views of women below the age of 18 years and above 49 years were not included in the study and thus research results cannot be generalized outside of the sampled population of women aged (18-49) years old.

The study was limited in that the researcher had to employ the services of an interpreter because some of the study respondents did not understand English and so interviews were conducted in either Kiswahili or Kigiryama.

1.8 Definition of Key Concepts used in the Study

**Antenatal care:** Care given to a pregnant woman from the time of conception to the onset of labour

**Distance:** The location of the health care facility in relation to the patient’s place of residence

**Grandmultiparae:** A woman who has given birth to five or more children

**Maternal Morbidity:** Is defined as “chronic and persistent ill-health occurring as a consequence of complications of pregnancy and child birth” (Ogunjuyigbe & Liasu, n.d.)
**Maternal Mortality or Maternal Death:** Is “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes” (“WHO | Maternal mortality ratio (per 100 000 live births),” n.d.)

**Multiparae:** A woman who has given birth to two or more children

**Nulliparae:** A woman who has never given birth to a child

**Parity:** Birth order in a nuclear family

**Postnatal care:** Care provided following childbirth to both the mother and the infant

**Primiparae:** A woman who has given birth to only one child

**Providers:** Health staff at the selected Maternal and Child Health (MCH) facilities serving in ANC at the time of the study and those who were available for interview

**Skilled Birth Attendant:** Is “an accredited health professional- such as a mid-wife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborns)” (World Health Organization, 2004b).

**Skilled Birth Attendance:** Process by which a pregnant woman and her baby are provided with adequate care during pregnancy, labour, birth and postpartum and immediate newborn periods (Graham et al., 2001).
**Trimester:** “One of the three divisions of three months each during pregnancy, in which different phases of foetal development take place” (“Trimester definition - MedicineNet - Health and Medical Information Produced by Doctors,” n.d.)

**Utilization of maternal health care services:** Utilization of maternal health care services in this study was described in relation to the requirements by World Health Organization (1994; 2004) which only considers it medically satisfactory when:

- Women receive antenatal care during the first trimester of their pregnancy period
- Women undertake 4 or more antenatal visits before delivery of their children
- Women are attended to at delivery by trained medical personnel/practitioner
- Women deliver in a health facility

**Waiting time:** The duration of time (minutes) a mother has to wait before he/she is attended to by a medical professional
CHAPTER TWO: LITERATURE REVIEW

2.1 Utilization of Health Care Services

Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems, or achieving a positive body image (Cockerham, 2012). In this discourse, health care utilization refers to the use of health care services by people (Awoyemi, Obayelu, & Opaluwa, 2011). Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries (Mekonnen & Mekonnen, 2002). Thus, in order for an individual to utilize health services, they must have both physical access to a health facility and the health facility must also be able to provide the required services; the patient must also be able to pay for the health care services offered either through cash or by use of health insurance or any third party means (Shauri, 2010).

The 2005/2006 Kenya National Health Accounts (KNHA) report notes that the top two “key challenges to achieving better health status in Kenya” are “inequitable access to health services” and “shortage of qualified health workers, especially those with appropriate skills” (Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009). Access to care has most often been considered as an expression of the time or monetary costs associated with obtaining medical care, such as waiting time to get an appointment or to see a doctor or medical practitioners once in their offices, and distance one has to cover (Aday & Andersen, 1977).
Some researchers place emphasis on the idea that access as a concept is best considered in the context of whether the people actually in need of health care receive it or not (Taylor et al., 1975). People should try to distinguish between access and availability. The latter is the presence of health care resources in a given locality/area. Even though information on the number of physicians in an area may be available, we may still not know the accessibility of such health care providers in terms of the patients' ability to pay the fees they are charged, the lack of transportation or traffic congestion typical of the place, the barriers resulting from ethnic discrimination, or office hours that cannot accommodate the patient’s own needs or schedules (Aday & Andersen, 1977).

Utilization of health services is a complex behavioural phenomenon, related to the availability, quality and cost of services, social structure, health beliefs and characteristics of the users (Chakraborty, Ataharasul, Chowdhury, Bari, & Akhter, 2003; Ebuehi et al., 2006). More critical for this study, women’s utilization of maternal health care facilities is an important health issue with regard to the well being and survival of both the mother and the child during pregnancy, child birth and postpartum period and has implications on the maternal and child mortality rates in human society (Gazali et al., 2012; WHO, 2012).

In February 1987, three international organizations namely: United Nations Fund for Population Activities (UNFPA), the World Bank (WB), and World Health Organization (WHO) sponsored a global campaign in Nairobi in form of a conference to reduce maternal mortality. As a consequence, the Safe Motherhood Initiative (SMI) was adopted to reduce the high rate of women dying during pregnancy and childbirth. The event was
aimed at raising awareness about the numbers of women dying each year from complications of pregnancy and childbirth (Starrs, 2006).

The SMI recommended that all countries provide three types of maternity care services which are vital for all expectant women namely prenatal care, delivery care, and postnatal care (United Nations, 2000a). Prenatal care services include encouraging a woman with a normal pregnancy to make at least four visits to a skilled health attendant during her pregnancy (with more visits by women with pregnancy complications), and promoting information about maternal nutrition and iron supplements to reduce anaemia, underweight and under-nutrition among pregnant women and new mothers. To provide delivery care during childbirth, all member countries were recommended to promote deliveries in health facilities and to promote the attendance of skilled health personnel including a doctor and/or person(s) with midwifery skills who can diagnose and manage obstetrical complications as well as normal delivery (Pandey et al., 2011; Cohen, 1987).

More significantly to note in this thesis is that, while motherhood is often a positive and fulfilling experience, for many women it is associated with suffering, ill-health and sometimes even death (WHO, 2012). It is thus imperative that ways to mitigate factors responsible for low utilization of maternal services be developed. However, the development of effective strategies to curb maternal deaths hinges on the identification of factors responsible for low utilization of such services underscoring the need for the present research. Furthermore, even though such studies have been carried out in Kenya, no such study has been conducted so far in Ganze district.
2.2 Status of Health Care Utilization in the World

Although utilization is an important indicator of health seeking behaviour, health status, cost and quality of services, it is not necessarily guaranteed by the availability of health care facilities (Wamai, 2009). A report carried out by the World Health Organization (2010) in 39 countries reveals that in more than half of the 27 out of the 39 countries, utilization of health care facilities was only at public facilities and was skewed towards outpatient services. More so, in the Dominican Republic, Brazil, Nepal and the Philippines between 50-60% of hospitalizations were in public health care facilities (Saskena, Xu, Elovainio, & Perrot, 2010).

Health conditions are different for urban and rural areas. Apparently, approximately one half of the global population lives in rural areas, but these areas are served by less than a third of the total nursing workforce and by less than a quarter of the total physician workforce (Dayrit et al., 2010). Indeed, a study carried out in Ethiopia shows that the coverage of maternity care services is very low and that utilization of maternal health care services is lowest in rural areas (Mekonnen & Mekonnen, 2002).

According to the findings of a study carried out in rural Zimbabwe on socio-economic status and health care utilization, all forms of health care tended to be utilized by those of high or medium-high socio-economic status rated (65%) of the study subjects. This clearly indicates that the socio-economic status of an individual affects his/her health care utilization behaviour. The report further shows that seventy-one (71%) percent of respondents utilizing health services were employed by the government, private sector (72%), the church (71%), Community Based Organizations (78%) and others (64%).
Health services tended to be utilized more by employed respondents. Only traditional health services were equally utilized by unemployed respondents accounting for 50% of the users (Kevany et al., 2012).

In Kenya, there is uneven distribution of health care facilities across the country’s eight regions. The central region has about double the number of facilities per population as compared to Nyanza and Western regions (Wamai, 2009). Health care utilization varies greatly across all the eight regions of the country. More precisely, North Eastern records the lowest health care utilization rate, with 63.4% of all those who reported being ill never seeking treatment in the health care facilities, which leaves only 36.6% seeking treatment whereas Nairobi region, which is the capital city of Kenya, having the highest rate (90.6%) of utilization.

According to the 2003 Kenya Household Expenditure and Utilization Survey (KHHEUS), of all those people reporting illness, 77.2% sought health care service thus leaving 22.8% not seeking health care service. It also shows an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people which translates to an annual utilization rate of 1.92 visits per person per year (Republic of Kenya, 2004).

It is important to mention that the urban population has a higher likelihood of visiting a health care facility (81.5%) when ill as compared to their rural counterparts (75.9%) despite the fact that the average cost for outpatient utilization in urban areas is twice that of rural areas (Republic of Kenya, 2004). Despite this scenario, people in the rural areas still don’t seek health care services very often. This indicates that cost still remains a barrier to utilization of health care facilities and services as health care costs (44%) and the long
distance to the health facility (18%) were cited as the main barriers to health care utilization by those who reported being ill (Republic of Kenya, 2004).

Females reportedly make 1.2 times as many outpatient visits per capita (2.1 visits per year) as did their male counterparts (1.7). Government facilities are utilized more for outpatient services accounting for 51% of the visits, private and mission facilities account for 27% and 8% of the visits respectively, while traditional healers account for a negligible proportion of services (1%). This disparity might be as a result of the distance one has to travel and the cost of seeking health care in the various facilities available (Republic of Kenya, 2004).

Some health facilities at the rural level lack essential resources and the basic assets available are either insufficient or dilapidated. Furthermore, most rural facilities do not even have wards to admit critically sick patients. Due to poor health infrastructure, patients walk for long distances to reach the available health care facilities. Despite the high demand from the community for health care services, most rural health facilities are still lagging behind in the delivery of services (Transparency International, 2011).

The lack of equipment and other core supplies has negative impacts on the performance of health facilities. Lack of adequate health facilities and poor infrastructure forces people to walk for long distances to seek health care services; leading to some patients resorting to alternative means of treatment. This has the potential of leading to underutilization of available health care facilities (Transparency International, 2011).
According to the Kilifi District Strategic Plan 2005-2010, there were 73 health facilities distributed throughout the district. The plan asserts that accessibility of health services was low and over one half (57%) of the population lived over five kilometres to the nearest health facility. The doctor - patient ratio was 1:100,000 population which is a manifestation of staff shortages in the area (The National Coordinating Agency for Population and Development, 2005).

Ganze district, like most rural areas in Kenya, has poor health service coverage and delivery (Transparency International, 2011). Most trained medical attendants including birth attendants prefer working in urban areas as opposed to rural areas and thus health facilities in rural areas are under-staffed (Epuu, 2010). This study was able to shed some light on the status of the health care system in Ganze District.

2.3 Global Trends in the Utilization of Maternal Health Care Services

Maternal and child health are both indicators to a society’s level of development as well as to the performance of the health care delivery system (Central Bureau of Statistics (CBS)[Kenya], Ministry of Health (MOH)[Kenya], & ORC Macro, 2004). A study carried out in Peru on the effects of education on utilization of maternal health care services shows that there is a strong positive relationship between education and the use of maternal health care services (Elo, 1992).

A woman’s autonomy or level of independence in decision making is important in explaining utilization of maternal and child health care services. Urban residence, and
husband’s education have all been found to have a positive relationship to antenatal care utilization (Woldemicael, 2007; Dairo & Owoyokun, 2010).

A cross sectional study in India by (T. R. Jat, Ng, & San Sebastian, 2011) on the factors affecting the use of maternal health services in Madhya Pradesh state found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services. Women in urban areas tended to use maternal health care services more than those living in the rural areas. The levels of skilled attendance at delivery and postnatal care decreased steadily with increased birth order (T. R. Jat et al., 2011). It was also found out that an increase in the education of the mother enhances the use of the three indicators of the use of maternal health services namely prenatal care, delivery care, and postnatal care. Finally, child parity seemed to affect the use of skilled attendance at delivery and postnatal care.

Another study by Mondal (2009) carried out in Bangladesh found out that the level of education (both of the wife and husband) increased the likelihood of seeking help from a qualified medical professional. Women who reside in urban areas had a higher odd of seeking medical assistance than those in rural areas (ibid). Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious taboos. Women from families with a high socio-economic status are more likely to receive treatment from a doctor or nurse.

From the above studies, we can be able to deduce that socio-economic status as indicated by, level of education (both of the wife and husband), place of residence and religion increase the probability that women of reproductive ages will utilize maternal health care
Interestingly though, no study has focused on whether the attitude of health care providers towards the patients affects maternal health care utilization. Additionally, no study has focused on the attitude of the health care practitioners towards their work and utilization of maternal healthcare services by pregnant women. It is within the confines of this study therefore to find out whether the attitude of health care providers towards their work and patients determines utilization of maternal health care services.

### 2.4 Maternal Health Care Utilization in Africa

A study carried out in Ethiopia on the utilization of maternal health care services found out that there was low coverage of maternity service in the country. The place of residence, woman’s education, marital status, religion, parity and number of children under five years were found to have an important influence on utilization of maternal health services by women of reproductive ages. There was high level of utilization of maternal health services among urban women compared with their rural counterparts (Mekonnen & Mekonnen, 2002).

Additionally, married women were observed to be more likely to use antenatal care than their unmarried counterparts. Religion was also found to be an important predictor of antenatal care utilization. Among urban women, utilization of antenatal care is higher for those with two or more children than for those with one child. On the other hand, utilization of delivery care services is lower for those with two or more children than those with one child (Mekonnen & Mekonnen, 2002).
In another study carried out in Ethiopia on factors influencing the use of maternal health care services, it was found out that education of women determines use of antenatal care in that utilization increased with education level. Religion also affects use of antenatal care in that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs. Marital status and religion also had an impact in determining the use of antenatal care (Mekonnen & Mekonnen, 2003; Mekonnen & Mekonnen 2002).

A qualitative study carried out in rural Gambia on access to emergency obstetric care found out that structural factors in maternal health care provision discourage women from seeking care. For instance, where pre-natal care was provided on specific days in each community during week days, it hinders other people from attending. There may exist difficulties in transportation, such as poor condition of the road, lack of readily available transport, inadequate means of transportation, poor provider attitude towards patients, fear of punishment by health care providers based on previous experiences or just gossip can lead to delays in the decision making process of visiting a health facility by patients (Cham et al., 2005).

A study carried out on the utilization of antenatal care services in a Nigerian teaching hospital found out that over two fifths (47%) of the women started attending antenatal clinic only in the third trimester of the pregnancy period despite the fact that antenatal care services in the state hospital that the study was carried out was offered free of charge (Peltzer & Ajegbomogun, 2005).
In another study conducted in Nigeria, the use of maternal health services was significantly related to the level of maternal education, maternal age and marital status. Higher use was positively related to knowledge of where the Primary Health Care (PHC) service was located. Respondents with more than 4 children underutilized available maternal health services and utilization of maternal health services by respondents was significantly related to satisfaction with quality of services received (Ebuehi et al., 2006). Women’s and husband’s education and place of residence have strong positive associations with health care utilization (Woldemicael, 2007).

In Africa, all the reviewed studies have focused on determinants of maternal health care utilization such as maternal education, religion, parity, marital status and residence. However, limited literature none has focused on whether distance from health care facility has an effect on the utilization of maternal health care services. Few studies have also been carried out to find out the effects of waiting time at the reception by the patients before being attended to and the utilization of the health facility. Thus, this underscores the need for the present study in trying to find out the influence of how far one resides from a health facility and utilization of the health facility and the effect of how long a mother waits before being attended to on the utilization of maternal health care. The study thus sought to know how socio-economic and demographic as well as facility specific factors influence utilization of Maternal Health Care Services (MHCS).

2.5 Utilization of Maternal Health Care Services in Kenya

The 2003 Kenya Demographic and Health Survey indicated that almost 90% of Kenyan women received antenatal care from a medical professional with 18% being attended to by
a doctor, 70% by a nurse or midwife while 10% received no antenatal care at all (Central Bureau of Statistics (CBS) [Kenya] et al., 2004).

In a study carried out in Kenya by Fotso et al., (2009), it was found out that women’s overall autonomy is insignificant in health seeking behaviour. Further, women with at least secondary education were more likely to deliver in a health facility in general or in an appropriate health facility compared to those with no education. The likelihood of delivering at a health facility in general and in the well equipped facilities in particular significantly decreases as parity increases.

Another study carried out using data from the 2003 KDHS found out that young women mostly used skilled professional assistance during delivery. Rural women were less likely to deliver with the assistance of either a Traditional Birth Attendant (TBA) or skilled professional. Women from rich households were more likely to deliver with a TBA or skilled professional. Educated women were more likely to deliver with assistance of skilled professionals as opposed to non-educated. Women with more than 2 children were less likely to deliver with the assistance of TBA or skilled professionals compared to those with 1 child (Ochako et al., 2011).

According to a study carried out in Nyanza region of Kenya, it was found out that the higher the parity, the greater the chances of a mother delivering at home. Conversely, health facility deliveries were greatest among births to lower parity women. A person’s level of education affects how a person utilizes the health facility. Rural residence is associated with higher likelihood of home deliveries where 63% of births occur at home. However, those residing in urban areas had a higher chance of health institution delivery
with 78% births delivered in health care facilities. Lower economic status at home, medium and high economic status health institution, older mothers’ and young health institution also affects place of delivery with high chance of mothers delivering at home. In a nutshell, the study found out that the place of delivery is affected by parity, level of education, place or residence, economic status and age of the mother (Owino, n.d.).

From the reviewed literature, most studies globally, in Africa and Kenya have focused on the determinants of maternal health care utilization such as education, religion, parity and age but a limited number of studies have been carried out in Ganze district which is the study area. This therefore underscores the need for the present research which seeks to establish the determinants of maternal health care utilization in Ganze district in the Coastal Region of Kenya.

**2.6 Summary of Research Literature on Maternal Health Care Utilization**

In as much as most reviewed studies have focused on the determinants of maternal health care utilization and inform us of the effects of maternal education, religion, parity, marital status and place of residence on maternal health care service utilization, no such focus is evident in the literature on the rural district of Ganze. This underscores the need for the present research in trying to establish the factors associated with maternal health care utilization in Ganze.

Furthermore, all studies that have been reviewed in this work only concentrate on socio-demographic factors such as maternal education, religion, parity, marital status and place of residence on maternal health care service utilization but there is less focus on the effects of
the attitude of health care practitioners on the utilization of maternal health care services. Accordingly, the study attempted to find out the effects of the attitude of health care practitioners and utilization of maternal health care services. More so, limited attention was paid to whether the distance of a health care facility from a patient’s residence affects their utilization of maternal health care services. This study sought to fill this important gap in knowledge.

It is proper to note that limited focus was also given to the effect of waiting time before one was attended to by a medical practitioner in hospital and the utilization of maternal health care facility. The present study went a step further in trying to find out whether the amount of time one has to wait before being attended to by medical personnel has an impact on the utilization of maternal health care services.

At another level, some studies have dealt with challenges faced by expectant mothers as they seek maternal health care services but none enumerates the coping strategies these women use to respond to the challenges. For instance, a qualitative study carried out in rural Gambia found out that structural factors in maternal health care provision discourage women from seeking care (Cham et al., 2005). Despite these challenges that have been enumerated, we are not told what coping strategies these women use to address such challenges.

Finally, it is proper to also note that almost all the literature reviewed has focused on the socio-economic factors that affect maternal health care utilization overlooking facility specific factors, perceptions and preferences of women of child bearing ages that may also affect maternal health care utilization. The study sought to establish facility specific factors,
perceptions and preferences of women that affect maternal health care utilization with an aim of making recommendations to improve the state of maternal and child health in the study area.

2.7 Theoretical Framework

This study was understood and conducted within the framework of Symbolic Interactionism. Symbolic Interactionism is a micro level theoretical approach that focuses on social interactions in specific situations. It has roots in the thinking of Max Weber (1864-1920), a German Sociologist and George Herbert Mead who emphasized understanding a particular setting from the point of view of the people in it (Giddens & Sutton, 2009).

The core principles of social interaction theory include meaning, language and thought. Meaning arises in the process of interaction between people and are handled in and modified through an interpretive process used by the person in dealing with things he/she encounters. Language is the vehicle through which meanings that arise out of our thoughts are transported in social interactions.

This theory was helpful in trying to understand the meanings that people attach to certain symbols so that they seek maternal health care services. The interpretation that people derive from the symbols and maternal health care utilization enabled the researcher to come up with strategies to improve maternal health care utilization and thus reduce maternal and child mortality. In looking at the factors that influence maternal health care utilization, the
researcher adopted the Health Belief Model (HBM) embedded within the larger purview of Symbolic Interactionism perspective.

2.7.1 Symbolic Interactionism and Illness Behaviour

Illness is social and exploring the meanings that patients give to symptoms and illness becomes important. Patients are the first to recognise their illness and to decide to visit a medical practitioner, who then takes a medical history. Patients describe illness on what society teaches them and this affects the diagnosis (Laurence & Barbara G, 2007).

For this study, it was assumed that women of reproductive ages (18-49 years) must be able to draw meanings from the symptoms and attach meanings to those symptoms in order for them to be able to utilize the available maternal health care services. Borrowing from the symbolic interactionist perspective and because illness is social, the study tried to explain maternal health care utilization using the HBM.

2.7.2 The Health Belief Model

The model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions; these include susceptibility, seriousness, benefits and barriers to behaviour and cues to action (Glanz et al., 2008). The HBM suggests that preventive action taken by an individual to avoid a disease is due to the perception that they are susceptible and the occurrence of the disease would have some severe personal implications (Cockerham, 2012). Thus, women may only seek maternal health care services if they deem that the pregnancy they are carrying may have a likelihood of affecting them.
HBM makes an assumption that by taking a particular action, susceptibility (likelihood) would be reduced. However, the perception of the threat posed by disease is affected by modifying factors which are demographic, socio-psychological and structural variables that can influence both perception and the corresponding cues necessary to instigate action (Cockerham, 2012).

Action cues are required because while an individual may perceive that a given action will be effective in reducing the threat of disease, the action may not be taken if it is further defined as too expensive, too unpleasant or painful, too inconvenient, or perhaps too traumatic (Cockerham, 2012). The women may seek for health care because by so doing they feel that they have reduced the likelihood of them experiencing difficulties during the entire period of pregnancy.

The likelihood of action involves a weighing of the perceived benefits to action contrasted to the perceived barriers. Therefore it is believed that a stimulus in the form of an action cue is required to “trigger” the appropriate behaviour. Such a stimulus could either be internal (perception of bodily states) or external (interpersonal interaction, mass media communication, or personal knowledge of someone affected by the health problem) (Cockerham, 2012). Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.

The model assumes that if a person regards himself/herself susceptible to a condition, believes that the condition would have potentially serious consequences, believes that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believes the anticipated benefits of taking action
outweigh the barriers to (or costs of) action, one is likely to take action he or she believes will reduce their risks (Glanz et al., 2008).

Additionally, it is important to note that health seeking behaviour has been observed to be based upon the value of the perceived outcome (avoidance of personal vulnerability) and the expectation that preventive action would result in that outcome (Cockerham, 2012).

Finally, the theoretical framework informs this particular study on the basis of the five constructs that make up the HBM. Thus, women may only utilize maternal health care services if they feel that the pregnancy they are carrying may have a likelihood of affecting their wellbeing and that by so doing they feel that they will reduce the likelihood of them experiencing difficulties during the entire period of pregnancy. Women may also decide to take or not to take action depending on the benefits they will get as opposed to the barriers they will experience.
2.8 Conceptual Framework

A conceptual framework is a concise description of the phenomena under study accompanied by a graphic or visual depiction of the major variables of the study (Mugenda, 2008).

![Conceptual Framework Diagram]

*Figure 2.1: Conceptual Framework of the correlates of maternal Health Care utilization*

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**Structural Variables (Independent)**

- Socio-economic:
  - Occupation
  - Education
  - Marital status

- Demographic:
  - Age
  - Sex
  - Religion
  - Parity

**Predispositional variables**

- Cultural beliefs
- Perceptions/prefere nces
- Illness severity
- Health belief
- Knowledge of services
- Availability of transport
- Economic capacity

**Proximate variables**

- Accessibility
- Availability
- Waiting time
- Type of provider
- Attitude of provider

**Dependent variables**

- Health care service utilization
  - Place of delivery
  - Number of ANC visits
  - Use of Skilled Birth Attendant
  - Trimester
2.8.1 Behavioural Model of Health Services Utilization

The study utilized the behavioural model of health services utilization developed by Andersen and Newman (1973) to explain maternal health care utilization. It asserts that the utilization of health service is dependent on three sets of individual factors: predisposing factors, enabling resources and the illness levels of an individual (need for health service) (Andersen & Newman, 1973; Aday & Andersen, 1977; Andersen, 1995)

2.8.1.1 Predisposing factors

Predisposing factors reflect the fact that different people have a different likelihood/propensity to use health care services. They include demographic characteristics e.g. age and gender, the social structure which determines the social status of a person and his/her ability to cope with presenting problems in society. Social structure can be measured using indicators such as education, occupation, household size, number of previous pregnancies and health-related attitude. Health beliefs include attitudes, values and knowledge about the health and health services that might have an effect on the subsequent need and use of health services available (Andersen, 1995).

Looking at the study variables, the model helps in the analysis of the effects of the demographic variables which include; age, sex, marital status and parity on maternal health care utilization in the study area. This helps to understand why there are disparities in the utilization of maternal health care services. Socio-economic factors such as education level, income, occupation and family size help in knowing the social status of an individual and help in understanding how better the individual is equipped to deal with the health problem at hand. The cultural beliefs enable us to have a better understanding of the outlook towards
health and health services which might have an effect on the need and use for health care and health services among the study subjects.

2.8.1.2 Enabling Resources

Enabling resources deal with the means that make it necessary for individuals to utilize health care services even if they are predisposed to them e.g. income, access, and availability of health services. They may either be personal or community based and make health service resources available to individuals. Enabling conditions can be measured by indicators such as a person’s income, level of family insurance coverage or other source of third party payment for health care, whether or not the person has a regular source of health care, the nature of the regular source of care and the accessibility of the source of health care.

Community enabling characteristics include the amount of health facilities and personnel in a community. Thus, if resources are reasonably plentiful and can be used without queuing up they might be used more frequently. Analysing it from the economic viewpoint, one might expect people experiencing low prices for medical care to use more services. Other measures of community resources include region of the country and the rural urban nature of the community in which the family lives. These variables might be linked to utilization because of local norms concerning how medicine should be practiced or overriding community values which influence the behaviour of the individual living in the community (Andersen & Newman, 1973).
Focusing on service provider factors such as the availability of drugs, attitude of service providers, waiting time, availability of equipments and bed space all have an effect on how health care facilities will be used. All these service provider factors enable people utilize available health care facilities because if the services provided measure up to what the clients expect then they will utilize them. People’s occupation and income are also enabling factors for utilization of health care services because with a good income one is able to pay for the expenses incurred while seeking for care and one can also be able to buy health insurance policies which cover them whenever they fall ill and thus they can be able to seek for health care services. The quality of service offered and the effectiveness of the service provider also determine whether a patient will or will not utilize health care services. Where the services are effective patients will tend to utilize such services more.

2.8.1.3 Need

According to Andersen and Newman, the need factor is the most immediate cause of health service use (Andersen & Newman, 1973). An individual must perceive illness or the probability of it occurring for him/her to seek for health care. The levels of illness represent the most immediate cause for health service utilization. Perceived severity or number of episodes of diseases have a positive association with health care utilization. The model also makes the assumption of a clinical evaluation system because individuals seek care from formal medical systems.

Indicators of perceived illness includes the days that the individual is unable to function normally because the disease interferes with how he/she conducts his daily activities like going to work, going to school, playing with their peers or even taking the children to
school. Other measures of perceived illness include symptoms the individual experiences in a given time period and a self report of the general state of health, e.g. excellent, good, fair or poor. Evaluated illness measures are attempts to get at the actual illness problem that the individual is experiencing and the clinically judged severity of that illness. Under ideal circumstances included here would be a physical examination of the individual by a medical practitioner (R Andersen & Newman, 1973).

The need for utilization of health care services will be examined on the basis of how the disease interferes with the patients daily activities.
CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter provides details of the research methodology used during the study. It offers information on the study site, research design, sampling procedures, the target population, the data collection methods and tools, and finally analysis of data. Consideration is also given to logistical as well as ethical issues.

3.2 Site of the Study

This study was conducted in Ganze district which is one of the six districts in the larger Kilifi County. Ganze district lies on Latitude 3°32'0" North and Longitude 39°41'0" East. It borders Kaloleni district to the South and Bahari district to the East. Ganze district has three divisions namely Ganze, Bamba and Vitengeni; it has a total of 16 locations and 48 sub-locations.

According to the 2009 census report, Ganze district had an estimated total population of 117,074 people with the males accounting for 53,403 (45.6%) and females accounting for 63,671 (54.4%) of the total population. The district covers a total area of 2,779 Km². Ganze district is a semi arid area where horticultural crops are produced using drip irrigation system while food crops and livestock feeds are produced using water conservation structures (Ketiem et al., 2007).

3.3 Research Design

This is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The
researcher employed a cross-sectional survey research design in the collection of data for the proposed study because it can be used to collect data from many people at relatively low cost and relatively quickly. Survey research design is always used to collect information from the field at one point in time. A survey design entails data collection on more than one case and at a single point in time in order to collect both quantitative and qualitative information in connection with two or more variables which are often examined to detect patterns of association (Alan Bryman, 2012).

3.4 Target Population

The study focused on women of reproductive ages (18-49 years) in Ganze district which is made up of three divisions namely Ganze, Bamba and Vitengeni.

3.5 Study Population

The study population consisted of women (18-49 years) who had come for antenatal care and those bringing their babies born at last delivery to the primary health care centres for immunization and other maternal and child health related services.

3.6 Sample Size Determination and Sampling of Study Subjects

3.6.1 Sample Size Determination

According to Bailey (1982), 30 elements are considered by many as the minimum size of a sample. Other researchers opt for a minimum sample of 100 units while others opt for 200 (Chadwick et al., 1984). Thirty (30) respondents were picked from each of the six health care facilities providing maternal health care services in the study area.
3.6.2 Sampling Procedure

This study used triangulation of various sampling techniques with a view of ensuring a representative sample of study subjects was selected and studied. To ensure sample representation and to avoid biasness within the framework of triangulation, multi-stage sampling strategy was adopted.

In the first stage, purposive sampling technique was used to select Ganze district among the six districts that constitute Kilifi County. Ganze was selected because it is a rural area and only one sub-district hospital in the whole district, namely Bamba sub-district hospital. The nearest referral hospitals are in Kilifi and Malindi districts and women with complications have to be referred to either of the two facilities.

In stage two, the researcher considered to stratify Ganze district into three divisions namely Ganze, Bamba and Vitengeni. This was to ensure that there is sample representation from the whole district.

In the third stage, a list of all the health facilities that offer maternal health care services in the district was drawn. Two health care facilities that provide maternal health care services were selected using simple random sampling technique from each of the divisions making a total of six health care facilities.

Lastly, study subjects were selected using convenient sampling. The interviewer was at the health care facility and interviewed 30 subjects from each health care facility giving a total sample size of 180. There was oversampling of study respondents by 9 subjects giving a total sample size of 189.
3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion Criteria

- Subjects included in the study only comprised of women of reproductive ages (18-49 years).
- Only those women who: (i) brought their babies born at last delivery and (ii) those coming for delivery to the primary health care centres for antenatal care services and (iii) those coming for immunization services were eligible for the study.
- Only those respondents who gave an informed consent of participating in the study were interviewed after they had signed the consent form.

3.7.2 Exclusion Criteria

- Women seeking other health services other than maternal health care services from the primary health care centre were not interviewed.
- Women under the age of 18 years were not interviewed because of legal and ethical issues.
- Those women who did not consent to voluntarily participate in the study were not interviewed.

3.8 Data Collection Procedures and Tools

The study employed the use of the interview schedule as the primary tool of data collection because literacy levels in Ganze district were relatively low. Interviews were carried out on
a face to face basis with the respondents who did not know how to read and write and the responses generated from the interviewees were accurately recorded.

3.9 Data Analysis

The collected data from the field was edited, coded and classified into response categories; this was done with the help of the Statistical Package for Social Sciences (SPSS, version 20.0). Descriptive statistics were used to display the Socio-Demographic characteristics of study respondents and utilization of maternal health care services in Ganze District. Frequency tables were used to present the Socio-Demographic distribution of study respondents and pie charts and bar graphs were applied to aid in the visual appreciation of the Socio-Demographic characteristics.

The chi-square test was used to examine whether or not there exists a relationship between the categorical variables; and Binomial Logistic Regression was used to carry out inferential analysis on the determinants of maternal health care utilization due to their binary nature. Logistic regression was used to examine the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). In order to identify the factors that predict utilization of maternal health care services, Multivariate Logistic Regression (MLR) was therefore applied. All the independent variables that were identified as having an association at the bivariate level were included in the model and the significance level for all the statistical analysis was set at 95% ($P \leq 0.05$) confidence level.
3.10 Ethical Considerations

Ethical clearance for the study was applied to and granted by the Ethical Review Committee (ERC), an agency of the National Commission for Science, Technology and Innovation (NACOSTI). Further, research clearance was also obtained from the Deputy County Commissioner Ganze Sub-County and the Kilifi County Research Coordination Committee to visit health care facilities in Ganze and conduct the study.

During the survey, the researcher explained the purpose of the study to the respondents. This was done to ensure that the respondents gave an informed consent for taking part in the study. Furthermore, this ensured cooperation from the respondents and it helped to avoid any suspicion on the part of the study subjects.

The researcher insisted on and adhered to voluntary participation of respondents in giving information relevant for the study to avoid any coercion in the data collection process. The researcher maintained confidentiality by ensuring that respondents’ information was used only for the purpose of the study and no names of respondents were displayed and that interview schedules were to be kept securely under lock and key.
CHAPTER FOUR: STUDY RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides results of data analysis from the 189 interviewed respondents in Ganze District guided by the research objectives as elucidated in Chapter One. The study over sampled by nine (9) respondents. From the study it is evident that more women were sampled from Bamba division (36.0%) than the other divisions in the district.

This analysis and discussion focuses on the following themes: socio-economic and demographic dimensions of the local community, facility specific factors and women’s preferences and perceptions of ANC services offered at the health care facilities in Ganze district with regard to their use of maternal health care services. The findings are presented in tabular format and figures that clearly show the variations in responses among study variables.

4.2 Socio-Demographic Dimension of Respondents

This section focuses on the different or diverse characteristics with a bearing on the utilization of maternal health services. For the purpose of this research, our key interest was to conduct an assessment of the following parameters towards utilization of maternal health care services; age of respondents, education levels, education levels of their spouses, marital status, income levels, parity and religion. These parameters were investigated and results are presented next.
4.2.1 Age of Respondents

Age of respondents is critical as a variable in this study as it sheds some light on not only the maturity of the study subjects but also ensuring that the selection of study participants remained ethical. Further, age was included because of the assumption that the older the respondents the more mature and experienced on maternal issues and decision making. Indeed, differential age among expectant mothers cannot be gainsaid when it comes to making important maternal decisions that may have value in enhancing maternal and child health. The distribution of respondents by age is aptly presented in Table 4.1.

Table 4. 1: Distribution of Respondents by Age

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>70</td>
<td>37.0</td>
</tr>
<tr>
<td>23-27</td>
<td>55</td>
<td>29.1</td>
</tr>
<tr>
<td>28-32</td>
<td>42</td>
<td>22.2</td>
</tr>
<tr>
<td>33-37</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>38-42</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>48-52</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Findings in Table 4.1 indicate that out of the sampled (189), respondents over one third (37%) were between ages 18-22 years old. This clearly indicates that most women start giving birth at an early age. Of the sample, over one quarter (29%) were between the ages of 23-27 years and only 5% of the respondents were aged 38 years and above.

Early marriages and giving birth at early age exposes the women to high chances of not gaining higher education thus leading to over reliance on their spouses for all their needs consequently leading to financial dependence. Dependancy has implications for maternal
health care utilization probably because women will always have to ask for money whenever they want to visit the health facility during their clinic appointments. Subsequently, it may also lead to women not attending maternal health care clinic as expected especially if the clinics are in far off places because of lack of finances to pay for their bus fare. Consequently, this may result to low or poor maternal health care service utilization. Additionally, young single women may not attend maternal health care clinic because they may be trying to hide the pregnancy from their parents and relatives.

The low percentage (5%) of women aged 28 years and above attending antenatal clinic might probably be a result of them having gone through subsequent births and thus don’t find it necessary because they feel they have had more successful birth experiences without any complications. This might also be attributed to them having stopped giving birth. This finding corroborates those of Jat et al., (2011) who found out that women delivering at young ages were more likely to use antenatal care, receive skilled attendance at delivery and use postnatal care services compared to their older counterparts.

4.2.2 Marital Status

The Marital status of a person in this study was conceived to mean the civil state of an individual in relation to marriage laws of the country. This variable was deemed important in this study because it helps in determining how maternal and child health decisions are made in a largely patriarchal African society where it is assumed that all decisions in the homestead are to be made solely by male members of the family because they are the heads of their families. The distribution of respondents by their marital status is presented in Table 4.2.
Table 4.2: Percentage distribution by respondents marital status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>Married</td>
<td>170</td>
<td>89.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Results in Table 4.2 depict that majority (90%) of the sampled respondents were married, only 7% were single, while 2% and 1% were widowed and separated respectively. Field observations showed that most of the respondents who were single were between ages 18-22 years old and either lived with their parents or relatives. The high (90%) number of respondents in marital union was expected because the study focused on women in their reproductive ages, many of whom were expected to be married due to societal expectations. Indeed, this finding corroborates those of Ebuehi et al (2006) and Mekonnen & Mekonnen (2002, 2003) who stated that marital status is related to utilization of maternal health services because married women were more likely to use antenatal care than their unmarried counterparts.

4.2.3 Religious Affiliation

Religion is herein conceived as a complete and acceptable system of set beliefs and practices that members of society adhere to. It is an institution that exercises social control among its members. Accordingly, affiliation to religious institution is one of the primary activities in society. Of importance in this study, is that religious affiliation may influence decisions on adoption of contraception, marriage, maternal and child health issues among
respondents. The distribution of respondents according to their religious affiliation is presented in Figure 4.1.

![Religious Affiliation](image)

**Figure 4.1: Distribution of respondents by Religious affiliation**

Figure 4.1 reveals that a half (50%) of the respondents were Christians, slightly over one tenth (12%) were Muslims, 1% subscribed to African Traditional Religions and slightly over one thirds (37%) reported that they were Atheists. This indicates that Ganze district is majorly a Christian community. Interestingly, 37% of the respondents don’t belong to any religion. This may be explained by the remote nature of the area which is compounded by lack of infrastructure and high levels of poverty. The poor state of infrastructure and poverty have probably delinked the community from accessing or being accessed by mainstream religious evangelists.

The higher (50%) number of respondents being Christians is a mirror of Kenya, which is predominantly Christian owing to aggressive penetration of Christian evangelists and size of the Christian faith which puts it at an advantage with regard to resources and numbers over other faiths in the country. The strength in resources and numbers might have enabled
Christian denominations to penetrate this remote area more than other faiths which had limited resources and small numbers of adherants. This finding may have an influence on maternal health care utilization in the study area in line with observations by (Mekonnen & Mekonnen, 2002, 2003; Mondal, 2009) have linked religion to the fact that it affects utilization of antenatal care. They demonstrated that those who followed Orthodox, Muslims and Protestant religions exhibited comparable and higher use of antenatal care than those who followed traditional beliefs and that Muslims women are less likely to have their delivery assisted by a medically trained person probably because of their conservatism and religious believes.

### 4.2.4 Education Level of Respondents

Education is one of the powerful drivers of social change in society in that those with higher levels of education seem to adopt new ideas and innovations faster than their counterparts with low levels of education. Thus, the education level of respondents is a critical variable in this study as it is indicative of a person’s level of understanding, access and uptake of information related to maternal and child health issues. Findings of the study on the level of education of respondents are presented in Table 4.3.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non formal education</td>
<td>85</td>
<td>45.0</td>
</tr>
<tr>
<td>Some primary education</td>
<td>57</td>
<td>30.2</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>35</td>
<td>18.5</td>
</tr>
<tr>
<td>Some secondary education</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Secondary school completed</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>189</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results in Table 4.3 indicate that out of the sampled (189) respondents, over two fifths (45.0%) had never gone to school, over one quarter (30.2%) had some primary education, with slightly less than a fifth (18.5%) reporting to have completed primary level of education. Those who reported to have either some secondary, completed secondary and others were only less than one tenth (6.3%).

From Table 4.3, it is apparent that the majority (93.7%) of the interviewed women of Ganze district were lowly educated. This finding may have an implication on the level of uptake of information on maternal and child health, adoption of maternal health care services and family planning. The levels of low education coupled with the culture and traditions of the community may compound the uptake of maternal health care services in an area. Further, the low levels of education in the area may have serious implications on other socio-economic opportunities such as securing lucrative employment and access to knowledge, especially on maternal health care services.

In fact, it has been shown that women of higher levels of education have a higher likelihood of fulfilling the requirements of the description of use of maternal health services as described by the WHO (1994; 2004). Such women have more capability to uptake new information on maternal health care practices than those with a low education background. Indeed, Elo (1992) reported that there is a strong positive relationship between education and the use of maternal health care services.
4.2.5 Education Level of Respondent’s Spouse

Owing to the aforementioned importance of the level of respondent education on the uptake of maternal health care services, it was prudent to investigate the combined effect of education on maternal health care utilization by including spousal education level in the matrix. More precisely, the education level of the respondent’s spouse was envisioned to be an important variable in this study because it may act as an enabling factor in the utilization of information concerning maternal and child health practices, access and uptake of such services. Findings on the education level of the respondent’s spouse are presented in Figure 4.2.

Figure 4.2: Distribution of respondents spouse by level of education

Figure 4.2 depicts that slightly over one fifth (20.5%) of the sampled respondents’ spouse had never gone to school, over half (56.5%) had either attained some form of or completed primary education, while over one quarter (28.8%) had either some form of or completed secondary school level of education and above. The level of education of the respondent’s
spouses indicates that there are educational differentials between male and female members of society in Ganze district. Level of education among the males is higher than that among the females. This finding is not a surprise to this study as it is a mirror of the situation in the country owing to the patriarchal nature of the society where boys have higher access to schooling opportunities than their female counterparts.

However, significant to mention is that spousal educational level may facilitate the utilization of maternal health care services because it enhances the capacity to access information that can be shared with the marital partner. Such sharing of useful information and knowledge, especially on maternal health may make the spouses see the importance of visiting maternal health care clinics for their ANC. Accordingly, such visits have the potential of bettering their health status and that of their unborn children. This finding is in tandem with those of Woldemicael (2007) and Dairo & Owoyokun (2010) when they reported that high maternal and husband’s education have a positive relationship to antenatal care utilization.

4.2.6 Respondents Source of Income

Respondents source of income in this study was conceived to mean the main livelihood strategy that respondents eke out a living by receiving money on a regular basis for work done at the end of every month. This variable was considered important as it helps to highlight the ability of respondents to pay for the cost of health care services offered. Findings on respondents’ source of income are presented in Table 4.4.
Table 4.4: Distribution of respondents by main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>Casual employee</td>
<td>18</td>
<td>10.0</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>107</td>
<td>59.4</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 9*

Table 4.4 depicts that almost three fifths (59.4%) of the respondents had no source of income clearly alluding to the fact that most of these women were financially dependent on their spouses. The high (59.4%) number of women having no source of income may probably be explained by the fact that women, as shown in Table 4.3, have very low levels of formal education. This means that their access to formal employment is low.

Indeed, the absence of prerequisites (education and skill training) to formal labour pushes women in Ganze out of formal means of livelihood where they can earn a regular income and attain financial independence that may enhance their access to maternal care. The foregoing may be explained by the patriarchal nature of the African society which favors boys over girls in education. In fact, women are seen as homemakers and as such have to stay at home and take care of their husbands and children whereas the husbands are expected to provide for the family.
4.2.7 Source of Income of Spouse

Respondents spouse’s source of income was considered as an important variable in this study as it acts as an enabling factor to utilization of maternal health care services. This is because the earned income can be used to cater for the necessary financial obligations that might be accrued in the process of seeking maternal health care services. Results on the respondents spouse’s source of income are presented in Table 4.5.

Table 4.5: Distribution of respondents by spousal main source of income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>04</td>
<td>2.4</td>
</tr>
<tr>
<td>Government employee</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Employment private sector</td>
<td>18</td>
<td>11.0</td>
</tr>
<tr>
<td>Employment NGO/CBO</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td>Small business person</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>Casual employee</td>
<td>62</td>
<td>37.8</td>
</tr>
<tr>
<td>No source of income at the moment</td>
<td>06</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>52</td>
<td>31.7</td>
</tr>
<tr>
<td>Not aware</td>
<td>01</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases* = 25

Table 4.5 presents findings of respondents spouses source of income. Of the total respondents sampled (189), over one third (37.8%) of the respondents spouses were engaged in casual employment, meaning they do not earn a regular income. More than one quarter (31.7%) observed that their spouses have other sources of income other than the ones elucidated in the interview schedule. Simple observations during field work showed that most men in the area are engaged in charcoal burning. The high (37.8%) number of spouses being in casual employment means that there are times that they are out of a job and thus might not be able to always provide financially incase the wife wants to make an
ANC visit. This situation is compounded by observations made during field work that most women interviewees lived far away from the available maternal health care facilities. Accordingly, most of them reported walking as their main means of reaching the nearest health care facility. This finding confirms that of Simkhada et al., (2008) who posits that women’s employment affects antenatal care uptake.

4.2.8 Parity

Parity in this study was conceptualized to mean the birth order in a nuclear family. Parity was considered an important variable in this study because it aids in explaining the differentials in utilization rates of maternal health care services by the number of children one has. Findings of the study on parity are aptly presented in Figure 4.3.

![Parity](image)

**Figure 4. 3: Distribution of respondents by parity**

Figure 4.3 indicates that slightly more than two fifths (43%) of the respondents were multiparous, more than one fifth (23%) were grandmultiparous, more than one tenth (15%) were primparous and slightly less than one fifth (19%) were nulliparous families.
Parity has an important influence on utilization of maternal health services by women of reproductive ages (Mekonnen & Mekonnen, 2002). The relationship between parity and utilization of maternal health care services in Ganze will be tested using Chi-square and regression analysis in the later sections of this thesis.

4.2.9 Decision to Seek Maternal Health Care

The variable on who makes the decision to seek maternal health care was conceived to be important for this study as it sheds some light on the decision making process between male and females in society. The level of autonomy in decision making among the women and its effects on utilization of certain services is also critical in the analysis of maternal health care services utilization. However, Given the patriarchal nature of Kenyan communities where men are considered the heads of the households and thus responsible for decision making and the fact that health care in the household is a role of the female gender, it was critical to include the variable to see the decision maker on matters of uptake of maternal health care services in Ganze.

Further, maternal health care does not only fall within the purview of gender roles where the women are expected to perform but it actually affects women only making its decision to uptake or not very critical for women despite the patriarchal nature of society. Data on who makes decision with regard to uptake of maternal health care services in Ganze will also help in understanding whether the autonomy of women in decision making affects their utilization of such services. Results of who makes decision to seek maternal health care services are presented in Figure 4.4.
Figure 4.4: Distribution of respondents by who makes decision to attend ANC clinic

Figure 4.4 depicts that slightly more than three fifths (61%) of the respondents, were found to make joint decisions on MCH, while only one quarter (25%) of women were observed make the decisions on their own. Less than one tenth (9%) of MCH decisions were observed to be made by the respondents spouse and (5%) of the times decisions are made by other people, either parents or relatives living with the respondent.

On one hand, the higher (61%) percentage citing joint decision making is a clear testimony of the growing gender empowerment and dynamic nature of society where women are gaining, albeit gradual, their social space as key players in decision making with regard to matters touching on their lives. This seems to happen regardless of the strong patriarchal nature of the Kenyan society. On the other hand, the one quarter (25%) who said they make the decision themselves was expected in that health care and indeed, maternal health care decision making and uptake of its services are a preserve of women owing to the genderized roles in society, where health is classified as a domestic role to be undertaken by women. In fact, women’s autonomy in decision making has been reported by
Woldemicael (2007) as an important factor in explaining utilization of maternal and child health care services.

4.2.10 Hospital Deliveries

The number of hospital deliveries was considered to be a critical aspect in this study since it gives further insight into the utilization rates of institutional delivery services among the rural women of Ganze district. Findings with regard to this variable are presented in Figure 4.5.

![Hospital Deliveries](image)

*Figure 4.5: Distribution of respondents by hospital deliveries*

Study findings presented in Figure 4.5 clearly indicate that of all (189) the respondents interviewed, only over two fifths (44%) had ever had hospital deliveries, while over half (56%) had never had any hospital deliveries. This finding corroborates those of the KDHS 2008-2009 which reports that only 44.0% of births are attended to by health professionals and only 43.0% of deliveries take place in health facilities (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). Interestingly, this is happening regardless of the
understanding that increasing the proportions of delivery taking place in health facilities is important in reducing health risks to both the mother and her unborn child and consequently preventing both maternal and child mortality.

However, Ganze district being a rural area, 44% of the interviewed mothers having ever delivered in health facilities is quite high and somehow slightly contradicts the KDHS 2008-09 which indicate that only 35.4% of deliveries take place in health facilities in rural areas (Kenya National Bureau of Statistics (KNBS) & ICF Macro, 2010). The reason for the difference could be attributable to differences in the characteristics of the samples used in the two studies. Further, whereas the KDHS 2008-09 was a country wide study encompassing women from both urban and rural areas, this study focused only on Ganze which is a rural and poor district in Kilifi County.

4.2.11 Place of Delivery of Child at First Birth

The place of delivery of the first born child was considered an important variable in this study as it highlights the differentials in place of delivery due to the fear of child birth associated with prior birth experience of women in their second parity. This variable was included in the study because experiences of first birth may have a bearing on uptake or non-uptake of maternal health care services. Results of the place of delivery of child at first birth are presented in Table 4.6.
Findings in Table 4.6 show that over half (53.3%) of the respondents had their first births at home (alone or with the help of a relative), while slightly more than one third (34.9%) had their first delivery in a health care facility with the help of a trained health professional. The over half (53.3%) of women of reproductive ages giving birth at home (alone or with the help of a relative) may probably be due to structural factors such as long distance to the hospital, poor road network and lack of transportation. This finding is consistent with that of Ochako et al (2011) and (Owino, n.d.) who reported that delivery with the aid of a TBA or skilled professional is less likely to happen among rural women. Accordingly, rural residence is largely associated with higher likelihood of home deliveries. The remote nature and poor infrastructural development in Ganze may aptly explain these disparities reported in the study.

### 4.2.12 Place of Delivery of Latest Child

Place of delivery of latest child was envisioned as an important variable in this study as it highlights the differentials in place of delivery between the first born child and subsequent deliveries. The assumption is that if the first child was born in a health care facility and the

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>53</td>
<td>34.9</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>81</td>
<td>53.3</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a</td>
<td>02</td>
<td>1.3</td>
</tr>
<tr>
<td>stranger/relative</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing cases = 37*
experience was satisfactory to the mother, there are high chances that subsequent births would take place in health care facilities and vice versa. Results of the study with regard to this variable are presented in Table 4.7.

Table 4.7: Distribution of respondents by place of delivery of child born at latest birth

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>65</td>
<td>42.5</td>
</tr>
<tr>
<td>Home with the help of T.B.A</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>At home alone or with the help of a relative</td>
<td>70</td>
<td>45.8</td>
</tr>
<tr>
<td>At the T.B.A’s special clinic/home</td>
<td>01</td>
<td>0.7</td>
</tr>
<tr>
<td>On the way to the hospital with the help of a stranger/relative</td>
<td>07</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Missing cases = 36

Findings of the study in Table 4.7 depict that prior to the study, over two fifths (45.8%) of the women had delivered their latest child at home or with the help of a relative, while another over two fifths (42.5%) had been observed to have delivered in a hospital with the help of a trained health professional. In comparison with place of delivery of first birth as captured in Table 4.6, over half (53.3%) had their first births at home alone or with the help of a relative while slightly more than one third (34.9%) had their first delivery in a hospital with the help of a trained health professional.

The two sets of findings, Table 4.6 and Table 4.7, show interesting trends that, on one hand, there is a decline (from 53.3% to 45.8%) of women giving birth at home or with the help of a relative and, on the other hand, there is a subsequent increase (from 34.9% to 42.5%) of women who had their subsequent deliveries in a health care facility compared to their first birth. These findings are not a surprise to this study in that they show the gains
that are being made in enhancing deliveries in health care facilities and in the hands of professionals as envisioned by government policy and the MDGs, especially goal number five (5). In fact, the findings are inconsistent with those of Fotso et al (2009) and Mekonnen & Mekonnen (2002) who reported that health facility delivery decreases as parity increases. More specifically, they reported that those with two or more children have lower utilization of health care delivery care services, a fact refuted by the findings of this study.

4.2.13 Trimester Women Visited Health Facility During First Pregnancy

The concept trimester is used in this study to refer to divisions of three months during pregnancy that an expectant mother had started ANC visits. It is expected that women will start visiting ANC services immediately they realise that they are expectant. The variable trimester in first pregnancy signify which month the interviewed women started ANC visits during their first pregnancy. This variable was considered important in this study as it sheds some light on how well women of child bearing ages utilize maternal health care services. The assumption being that they will start uptaking ANC services on the first month that they realise they are expectant. Findings of the study on trimester in first pregnancy are presented in Figure 4.6.
Figure 4.6 presents findings of the trimester that women started their antenatal visits during their first pregnancy. It is shown in Figure 4.7 that more than three fifths (65%) of the respondents had their first visit during the second trimester, one fifth (20%) had their first visit during the first trimester, less than one tenth (9%) had their first visit during the third trimester and only 6% never went for ANC visits during their first pregnancy. Findings are consistent with those of a study carried out in Ethiopia (Afework et al., 2014) which found out that majority (68.3%) of the women were observed to have started attending ANC during the second trimester.

This finding can further be explained by field observations where most women attributed having not had their first ANC visit due to the fact that they did not and still do not know when exactly they are supposed to make their first visit once they discover that they are expectant. The lack of knowledge on when to begin their ANC visits can probably be as a result of low levels of education among the women as captured in earlier findings of the study where only less than one fifth (6.3%) reported to have secondary education and
above. Lack of education denies these women opportunities to access information, including on health care and hence this impacts on uptake of health care services including maternal health care services.

4.2.14 Trimester Women Visited Health Facility During Latest Pregnancy

Trimester in this study was conceived, inter alia, to mean divisions of three months during pregnancy in which the respondents started using ANC services in their current pregnancy. This variable was considered important in this study first, because it sheds some light on how well women of child bearing ages utilize maternal health care services by focusing on the first month that they seek ANC services for their children at last birth. Second, it could provide comparative data with regard to which trimester, first or second, birth parity is associated with and third, whether there are dynamics in the process. Findings of the study on the trends for this variable are captured in Figure 4.7.

![Figure 4.7: Distribution of respondents by trimester when one started ANC visits during latest pregnancy](image-url)
Figure 4.7 depicts that slightly less than one quarter (24%) had their first ANC visit for current pregnancy during the first trimester, more than three fifths (67%) had their first visit during the second trimester and less than one tenth (9%) had their first visit during the third trimester. The low (24%) percentage of women having their first visit during the first trimester might probably be attributed to lack of maternal health care education or structural factors such as long distances to the health facility and maternal health care services being offered at the health facility on certain days of the week only hence inconveniencing users.

Comparatively, women seeking ANC services during their first pregnancy, Figure 4.7 and women seeking ANC services during their latest pregnancy, Figure 4.8 show over three fifths 65% and 67% respectively appearing in the second trimester. Only a slight increase of 2% of women seeking ANC services in the second trimester of their current pregnancy can be observed. This can probably be attributed to the low levels of education and high poverty rates in the study area as adduced and implied in earlier findings of the study respectively. Low levels of education and high poverty rates makes it difficult for women to either realise they are pregnant in the first trimester because they are ignorant on ANC matters and may not be in a position to access or afford pregnancy testing kits respectively.

4.2.15 Distance to Health Care Facility

Distance to the health facility was considered as an important variable in this study as it provided an insight into the structural barriers that may exist in society in relation to utilization of maternal health care services. Considering the remote location and poverty rate (over 68%) in the county, especially in the study area, the inclusion of the variable was
both timely and significant for the study. Results of the study on this variable are presented in Figure 4.8.

![Distance to health facility a concern](image)

**Figure 4.8: Distribution of respondents on their views whether distance to health facility is a concern**

Findings in Figure 4.8 indicate that more than half (56.4%) of the studied women said that the distance to the health facility was a concern. Field observations show that they had to spend a lot of time on the way to and from hospital and this affected how they utilized maternal health care services. Thus, many stated that they only went to the hospital when they deemed it necessary. This study finding supports that of Cham et al (2005) who posits that delays in decision making process of visiting a health facility can be caused by structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport and inadequate means of transportation.

Figure 4.8 also shows that more than two fifths (43.6%) of the respondents observed that the distance to and from the health facility was not a hindrance to their utilization of maternal health care services. Findings from informal interviews with these women, health
professionals and community members reveal that most of these women were used to walking long distances. Indeed, they were so used to the long distances that whenever we asked some community members on our way to the health care facilities they would retort, “nihaha kare” (literary translated to mean it is just here). The “nihaha kare” could turn out to be kilometre(s) of walking as observed during field work. This can be interpreted to mean that they are used to the long distances such that their sense of distance or how far a place is may be blurred by their experiences and cultural perceptions of distance.

4.2.16 Means of Transport to Nearest Facility

Means of transport to the nearest health facility was considered an important variable of this study as it presented to us one of the challenges that the pregnant mothers may encounter as they seek maternal health care services in their respective health care facilities. The respondents were asked to report which was the most frequently used means of transport that they used to the nearest health facility during clinic visits for maternal health care services? Findings of the various means of transport utilized by the interviewed women are presented in Table 4.8.

Table 4. 8: Distribution of respondents by means of transport to health facility

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>No. of Respondents</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>141</td>
<td>76.2</td>
</tr>
<tr>
<td>Motorcycle boda boda</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td>Bicycle boda boda</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Own/family motorcycle</td>
<td>02</td>
<td>1.1</td>
</tr>
<tr>
<td>Own/family bicycle</td>
<td>01</td>
<td>0.5</td>
</tr>
<tr>
<td>Public service vehicle</td>
<td>20</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Missing cases = 4
Table 4.8 indicates that slightly more than three quarters (76.2%) of study respondents reported walking to the nearest health care facility while both motorcycle (boda boda) and public service vehicles accounted for (10.8%) respectively. The larger (76.2%) percentage of the respondents who were observed to be walking to the health care facility for ANC services despite the fact that they were expectant and whether or not they had complications was amazing in that the mean distance to the nearest health facility was observed to be 7.2 Kilometers, while the mean time taken walking to the health care facility was observed to be one hundred and eleven (111 minutes) minutes or approximately one hour and fifty one minutes (1H:51 M).

Notably, despite these long distances, women had probably no other option. The lack of alternative options was probably due to poverty and limited employment opportunities constraining their financial capabilities and thus a lack of means to pay for even public transportation or seek alternative health care facilities in the locality or in the neighbourhood. However, these findings are not a surprise to this study as they are consistent with those of Cham et al (2005) who reported that structural factors such as difficulties in transportation, poor road conditions, lack of readily available transport, inadequate means of transportation can lead to delays in the decision making process of visiting a health care facility by patients.

4.2.17 Gender of Provider

The gender of the service provider was considered an important variable in this study because some cultures and religions only accept other women to be midwives and not men. This is regardless of the fact that it is until recently that the girl child has been given an
opportunity to go to school leading to differential education qualifications. Results on the gender of provider are presented in Figure 4.9.

Figure 4. 9: Distribution of respondents by their preferred gender of provider

Results in Figure 4.9 clearly indicate that over half (53%) of the respondents had no particular preference for the gender of provider whilst over two fifths (42%) and less than one tenth (5%) said that they would want to be attended to by a female or male provider respectively.

The more than half (53%) of the respondents who said they had no particular preference for the gender of the provider may be explained first, by the recognition among respondents that providers are bound by a code of ethics and the fact that all staff undergo similar professional training and thus gender consideration does not compromise quality of care and competence among providers. Second, owing to the remote location of the district and the fact that there are limited choices of health care facilities, expectant women may not have opportunity to make choices of health care providers based on among other things gender and that they have to do with what is available.
As expected, Figure 4.9 shows that over two fifths (42%) of the respondents wanted to be attended to by female providers. Several factors can explain this. One respondent who preferred to be attended to by a female health care practitioner said that:

“kuna mambo mengine huwezi mueleza mwanamume.....mwanamke ni bora haswa amabaye amezaa yuajua kila kitu hati lazima umwelezee”. (Translated this means that there are some issues that you cannot open up to a man....women are better especially those who have given birth because they have experienced childbirth and so know everything so you don’t need to tell them everything).

Another respondent who would like to be attended to by a female practitioner retorted that:

“Muche dza mino” (Translated into english means that the female practitioner is a woman just like herself).

Further, it is noted in Figure 4.9 that only 5% of the women would like to be attended to by a male health care provider. This is interesting and unexpected given the private and confidential nature of ANC procedures. This probably is because of the ethical confidence patients have of health care providers to handle private and confidential details regardless of gender differentials of their patients. More interestingly, two respondents among the 5% who said they would like to be attended to by a male health care provider retorted that:

“mimi napenda sana huyo daktari awe mwanamume, hawa wa kike wana madharau sana.” (Translated into english means that she would like the midwife to be a male because the female ones are usually not so friendly). To the contrary, another respondents observed
that “daktari wa kiume wanantia aibu” (Translated into english means that male practitioners make her shy).

4.2.18 Type of Provider

The type of provider was considered as a vital variable in this study as this may affect utilization of maternal health care services if the preferred type of provider by the mothers cannot be easily found in the facility. Results of the study on the type of preferred provider are presented in Figure 4.10.

![Preferred type of provider](image)

Figure 4.10: Distribution of respondents by their preferred type of provider

Findings in Figure 4.10 indicate that slightly more than four fifths (80.9%) of the interviewed respondents prefer to be attended to by trained medical professionals such as Medical Doctors (53.4%), Midwives (14.8%) or Nurses (12.7%). Others preferred T.B.A’s (3.2%) or a combination of all the practitioners (3.7%) whilsts more than one tenth (12.2%) had no preference. Despite more than half (53.4%) of women preferring to be attended to
by a doctor, not even a single doctor has been posted to serve in the sub-district hospital, health center and dispensaries that serve the expansive district.

However, the high number of respondents (80.9%) who preferred to be attended to by a trained medical professional might be a result of the awareness that health professionals are better trained in handling the birth process and emergency cases should any arise in the process of child birth which is always a risky affair. The finding supports MDG’s objectives especially goal five (5) that strives to make sure that women of reproductive age bracket are attended to in health care facilities and by professionals. The fact that over four fifths (80.9%) of interviewed women cited the need to be attended to by professional doctors shows goodwill in what the world is striving to achieve on the part of women.

4.3 Bivariate Analysis

Various statistical tools have been used in this work to provide an in-depth insight on the relationships that exist between the studies’ dependent and independent variables. Bivariate analysis using Chi-square ($\chi^2$) statistic for the test of significance (i.e. goodness of fit) and Cross-tabulation was used to examine the relationship between Socio-Demographic characteristics of the study respondents and utilization of Maternal Health care services.

Further, this thesis uses the Contingency Coefficient (C) to provide a measure of association between the study variables. The rationale behind this is that Contingency Coefficient is appropriate for tables of any size (Mangal, 1987). The value of (C) is given by the formula:

$$C = \sqrt{\frac{\chi^2}{n^2}}$$  \hspace{1cm} (Equation 4.1)
Where “n” is the sample size and “χ²” is the Chi-square value. Like γ' or phi and other coefficients of correlation, C has no limit (i.e. ±1). Its upper limit is dependent upon the number of categories (i.e. the size of the table). Like Chi-square (χ²), it does not have negative values (Mangal, 1987). For a table made up of an equal number of columns and rows (K×K), the upper limit of the Contingency Coefficient is given by the formula:

\[
C_{(upper\ limit)} = \frac{\sqrt{K-1}}{K}
\]

(Equation 4.2)

Thus, for a 2×2 table, it is 0.7, for a 3×3 table \(\sqrt{2}/3\approx 0.82\) and for a 4×4 table \(\sqrt{3}/4 = 0.87\), e.t.c. However, when the number of columns and rows differ in a table, to calculate the upper limit, the smaller number is taken as K.

Important to note in this thesis is that all the analysis in this work have been conducted using version 20.0 of the Statistical Package for Social Sciences (SPSS), with all the associations/ relationships being tested at 95.0% confidence interval.

4.3.1 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Place of Delivery

In this series of bivariate analyses, using Chi-square and Contingency Coefficient, a number of socio-economic characteristics were tested for their influence on the utilization of MHCS. Results of analysis based on Chi-square statistics and Contingency Coefficient for each independent variable and dependent variable have been presented, interpreted and discussed.
Discussion of findings of analysis was done with a view to integrate the results within the existing framework of knowledge in research literature reviewed in Chapter Two of this thesis. In this regard, the discussion of results in this section will draw from the Chi-square and Contingency Coefficient analyses of various Socio-Demographic characteristics (independent variable(s) and place of delivery (dependent variable) in the order in which they are reflected in Table 4.9.

Findings in Table 4.9 shed some light, inter alia, on the relationship between Socio-Demographic Characteristics (SDC) of the respondents and Place of Delivery (PoD). The presentation of the results of analysis follows next.

From Table 4.9, an attempt is made to show whether there exists a relationship between age and use of health facilities for delivery. It is observed that women aged 28 years and above had the highest (54.5%) percentage of users who delivered in health care facilities. Further, women aged below 28 years accounted for over half (54.2%) of all home deliveries with women aged 28 years and above accounting for (4.5%) of all deliveries that took place either at the T.B.A’s clinic or on the way to hospital. Contrary to our expectations, women aged 28 years and above had more (54.5%) health facility deliveries than young women who accounted for only (40%) of health facility deliveries.
Table 4. 9: Relationship between Socio-Demographic Characteristics of respondents and Place of Delivery

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Health Facility</th>
<th>Home</th>
<th>T.B.A’s clinic &amp; on the way to hospital</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below28 years</td>
<td>40.5</td>
<td>54.2</td>
<td>5.3</td>
<td>1.539</td>
<td>2</td>
<td>.463</td>
<td>.100</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>40.9</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>5.043</td>
<td>2</td>
<td>.056</td>
<td>.191</td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>54.6</td>
<td>5.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>21.384</td>
<td>4</td>
<td>.001**</td>
<td>.350</td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>36.2</td>
<td>5.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>45.0</td>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>57.5</td>
<td>12.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>18.216</td>
<td>4</td>
<td>.001**</td>
<td>.326</td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>20.7</td>
<td>3.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>32.1</td>
<td>60.5</td>
<td>7.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>58.1</td>
<td>2.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Respondents Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>13.612</td>
<td>4</td>
<td>.009**</td>
<td>.286</td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>64.2</td>
<td>4.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>41.2</td>
<td>5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.860</td>
<td>4</td>
<td>.762</td>
<td>.114</td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>59.4</td>
<td>6.2</td>
<td></td>
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<td></td>
<td></td>
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<td>Primary</td>
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<td>Secondary and above</td>
<td>50.0</td>
<td>43.3</td>
<td>6.7</td>
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<tr>
<td><strong>Respondents’ income (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>4.129</td>
<td>2</td>
<td>.127</td>
<td>.267</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>55.9</td>
<td>8.8</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>.539</td>
<td>2</td>
<td>.764</td>
<td>.097</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>52.6</td>
<td>10.5</td>
<td></td>
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<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>55.3</td>
<td>5.3</td>
<td></td>
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</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$
Overall, age was not significantly associated with place of delivery ($\chi^2=1.539; \text{df}=2; \ p =.463; C=.100$). Moreover, the relationship was found to be weak as indicated by the value of C (0.10). A review of literature shows that the findings of the study do not concur with the findings of studies carried out in Nigeria, Uganda and Ethiopia by (Adamu, 2011; Anyait et al., 2012; Teferra et al., 2012; Daniels et al., 2013; Wolelie et al., 2014; Abeje et al., 2014) who contended that age of women of reproductive age was significantly associated with institutional delivery service utilization.

Results in Table 4.9, also show that more than half (54.6%) of married women gave birth at home with three quarters (75.0%) of mothers who are either single, separated, divorced or widowed delivering in a health facility. Interestingly, women who are either single, divorced separated or widowed have a high likelihood (75.0%) of having a health facility delivery than married women. Nonetheless, the relationship between marital status and the place of delivery was not significant ($\chi^2=5.043 \text{ df }=2 \ P=.056 \ C=.191$). This finding is in agreement with other studies from Ethiopia and Uganda (Assfaw & Sebastian, 2010; Anyait et al., 2012) who affirmed that marital union does not influence place of delivery.

Findings in Table 4.9 reveal further that more than half (58.0%) of Christians delivered in a health facility whereas more respondents with no religion and from non-Christian religions delivered at home and in a T.B.A’s clinic or on the way to a health facility. Indeed, religion was significantly associated with place of delivery ($\chi^2=21.384; \text{df }=4; \ p=0.001; \ C=0.350$). Hence we conclude that religion has a significant influence on utilization of maternal health care services. The findings concur with that of Adamu (2011) in Nigeria who contended that religion had a significant association with institutional delivery with Christian women.
more likely to deliver in health facilities. Hence we conclude that religion has a significant influence on utilization of maternal health care services.

Data in Table 4.9 reveals that slightly more than three quarters (75.9%) of the Primiparae women had health facility deliveries with less than a tenth (2.3%) of Grandmultiparae women delivering either at the T.B.A’s clinic or on the way to hospital. This suggests that lower parity women have a high (75.9%) likelihood of taking hospital deliveries. This finding confirms that parity has an influence on women’s place of delivery. These may be probably women in their first pregnancy and that they are being cautious of perceived risks that are associated with child birth. Indeed, parity was significantly associated with place of delivery ($\chi^2=18.216; df=4; p=0.001; C=0.326$). The study’s findings are consistent with those of (Assfaw & Sebastian, 2010). The findings also confirms those of (Tsegay et al., 2013) who contended that parity is an important determinant of place of delivery.

Table 4.9 also depicts that all (100%) women who had secondary and above level of education delivered in a health care facility. Further, more than three fifths (64.2%) of women with no level of education were observed to have had home deliveries. This finding could be explained by the fact that women with a high education level have the capability to uptake information about maternal health care services subsequently leading to utilization of such services. As reported by (Elo, 1992; Tura & G/Mariam, 2008; Gupta et al., 2010; Adamu, 2011; Anyait et al., 2012; Daniels et al., 2013; Abeje et al., 2014; Ayele et al., 2014; Odo & Shifti, 2014; Wolelie et al., 2015) maternal education level is a critical aspect in the utilization of maternal institutionalized delivery services.
Indeed, maternal education was significantly related to the place of delivery ($\chi^2=13.612; \text{df}=4; p=0.009; C=0.286$). These findings are in tandem with that of (Woldemicael, 2007) and also confirms those of (Teferra et al., 2012) who posited that there is a positive relationship between maternal education and place of delivery.

Findings in Table 4.9 depict that half (50.0%) of women whose husbands had secondary and above level of education had hospital deliveries with slightly less than three fifths (59.4%) of women who were married to men with no formal education having their deliveries at home alone or assisted by a relative. This finding may be explained by the fact that husbands education may act as an enabling factor in ensuring the mother receives quality care during child birth as the husband has knowledge on maternal health issues. This finding suggests that women married to men with a high educational level are more likely to deliver in a health facility than those women married to men with no formal education.

However, spousal education level was not significantly associated with place of delivery ($\chi^2=1.860; \text{df}=4; P=0.762; C=0.114$). Apparently, this finding is contrary to those of (Woldemicael, 2007); Gupta et al., 2010; Anyait et al., 2012; Teferra et al., 2012; Ayele et al., 2014; Wolelie et al., 2014; Prasad, 2014; Odo & Shifti, 2014; Abeje et al., 2014) who contended that spousal education level is significantly associated with maternal health care utilization in institutional setups.

Results in Table 4.9 depict that three fifths (60%) of women who earned 4,000 shillings and above had hospital deliveries with more than half (55.9%) of women earning less than 4,000 shillings having home deliveries. The high number of women earning 4,000 shillings
and above having health facility deliveries with only (35.3%) of women earning less than 4,000 shillings having health facility deliveries could be as a result of the costs involved. As reported by Tura & Mariam, (2008) and maternal income has an influence on utilization of institutional delivery services. However, maternal income was not significantly associated with place of delivery ($\chi^2=4.129$, df=2, p=0.127; C=0.267).

From Table 4.9, it is evident that less than one tenth (5.3%) and more than half (55.3%) of women whose spouses earned 4,000 shillings and above delivered either at the T.B.A’s clinic or on their way to hospital or at home respectively. Further, slightly more than one third (36.8%) of women whose spouses earned less than 4,000 shillings had health facility deliveries. As expected, women whose husbands earned 4,000 shillings and above were bound to have more health facility deliveries because this acts as an enabling factor than their counterparts married to husbands who earn less than 4,000 shillings. This could be explained by the fact that they have resources that they could use in the course of seeking institutional delivery services as opposed to their counterparts who may not be able to access institutional delivery services due to shortage or lack of needed resources. However, spousal income level was not significantly associated with place of delivery ($\chi^2=0.539$; df=2; p=0.764; C=0.097). Hence we conclude that spousal income level has no relationship with place of delivery.

4.3.2 Relationship between Socio-Demographic Characteristics and Utilization of Maternal Health Care Services (MHCS) as Measured by Antenatal Care

Table 4.10 shows the relationship between Socio-Demographic Characteristics and Antenatal care. In this set of tests, the researcher first makes an attempt to determine
whether a relationship exists between age and number of ANC visits made to the clinic before delivery.

Findings in Table 4.10 show that women aged 28 years and above were found to be more likely (90.9%) to make 4 visits and above to the ANC clinic. More than one third (37.7%) of young women below 28 years were observed to make less than the required four visits to the ANC clinic prior to delivery of child born at last birth. A possible explanation for why less than two fifths (37.7%) of women below age 28 years made less than the required four visits could be as a result of lack of information on the required number and timing of visits to the ANC clinic. As reported by Anchang-Kimbi et al., (2014), young age (less than 20 years) is a significant risk factor associated with fewer clinic visits (less than 4).

Indeed, maternal age was significantly associated with the number of ANC visits ($\chi^2=7.063; \text{ df}=1; p=0.008; C=0.190$). These findings are consistent with those of Banda, (2013), Tsegay et al., (2013) and Anchang-Kimbi et al., (2014), that maternal age has an influence on number of ANC visits hence we conclude that maternal age significantly influences number of ANC visits women make before delivery.
### Table 4.10: Relationship between Socio-Demographic characteristics of respondents and number of ANC visits

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>&lt;4 visits</th>
<th>4 Visits and above</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>37.7</td>
<td>62.3</td>
<td>7.063</td>
<td>1</td>
<td>.008**</td>
<td>.190</td>
</tr>
<tr>
<td>28 years and above</td>
<td>9.1</td>
<td>90.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>31.2</td>
<td>68.8</td>
<td>7.747</td>
<td>1</td>
<td>.005**</td>
<td>.198</td>
</tr>
<tr>
<td>Other statuses</td>
<td>63.2</td>
<td>36.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>38.3</td>
<td>61.7</td>
<td>7.674</td>
<td>2</td>
<td>.022*</td>
<td>.198</td>
</tr>
<tr>
<td>Other religions</td>
<td>8.7</td>
<td>91.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>37.5</td>
<td>62.5</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
<td>69.4</td>
<td>30.6</td>
<td>24.609</td>
<td>3</td>
<td>.001**</td>
<td>.339</td>
</tr>
<tr>
<td>Primiparae</td>
<td>24.1</td>
<td>75.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>28.4</td>
<td>71.6</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Grandmultiparae</td>
<td>23.3</td>
<td>76.7</td>
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<td></td>
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<tr>
<td><strong>Maternal Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>27.1</td>
<td>72.9</td>
<td>4.237</td>
<td>2</td>
<td>.120</td>
<td>.148</td>
</tr>
<tr>
<td>Primary</td>
<td>39.1</td>
<td>60.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>20.0</td>
<td>80.0</td>
<td>6.133</td>
<td>2</td>
<td>.047*</td>
<td>.186</td>
</tr>
<tr>
<td>Primary</td>
<td>29.9</td>
<td>70.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>46.2</td>
<td>53.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>26.8</td>
<td>73.2</td>
<td>1.242</td>
<td>1</td>
<td>.265</td>
<td>.136</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>19.0</td>
<td>81.0</td>
<td>.255</td>
<td>1</td>
<td>.613</td>
<td>.059</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>24.5</td>
<td>75.5</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note: p values *: \( p \leq 0.05 \) **: \( p \leq 0.01 \)

Findings in Table 4.10 show that more than three fifths (68.8%) of married women made four visits and above, while slightly more than three fifths (63.2%) of women who were single, separated, widowed or divorced made less than four visits before delivery of their
latest child. The above findings suggest that married women have a higher likelihood of having four visits and above than unmarried women. This could be attributed to the fact that they get maternal services support from their spouses either in form of maternal care information, social or financial support. The finding of this study that male spouses had higher level of education than their wives further strengthen the support that women receive for ANC services during pregnancy.

Indeed, marital status was significantly associated with ANC visits ($\chi^2=7.747; \text{df}=1; p=0.005; C=0.198$). This finding is consistent with that of a study carried out in India by Gupta et al., (2010) and also confirms that of Anchang-Kimbi et al., (2014) who stated that being single is a significant risk factor associated with fewer clinic visits (less than 4).

Table 4.10 further depicts that majority (91.3%) of women who profess Islam and African Traditional Religion (ATR) made four visits and above, while more than one third (38.3%) of Christian women had less than four visits to the clinic before birth of their latest child. These findings show that women who profess Islam and African Traditional Religion have a high likelihood (91.3%) of having made four visits and above. Indeed, religion was significantly associated with ANC visits ($\chi^2=7.674; \text{df}=2; P=0.022; C=0.198$). The study finding corroborates that of Adamu, (2011) who contends that religion has an influence on number of ANC visits.

Findings in Table 4.10 reveal that more than three fifths (69.4%) of Nulliparae women made less than four visits, while slightly more than three quarters (76.7%) of grand Multiparae women made four and above ANC visits. This finding can be possibly explained by the fact that women of a higher parity have had previous birth experiences
which might have been occasioned by a complication warranting them to make all the
required visits to avert any complication that may arise. Indeed, parity was significantly
associated with ANC visits ($\chi^2=24.609$; df=3; $P=0.001$; $C=0.339$). This finding is in
agreement with that of Banda, (2013) who reported that parity is significantly associated
with number of visits to the ANC clinic.

Table 4.10 further depicts that slightly less than three quarters (72.9%) of women with no
formal education made four visits and above with one half (50.0%) of women with
secondary education and above making 4 visits and above. The high (72.9%) number of
women with no formal education having had more than four ANC visits and half (50%) of
women with secondary education or more having less than four visits could be explained
by the fact that most respondents knew about maternal health care services irrespective of
their educational status. This suggests that existence of informal means such as radio and
television among others could be significant sources of information in educating women of
reproductive ages as opposed to formal education only. As argued by Banda, (2013),
education level does not seem to influence number of ANC visits to the clinic but those
with secondary education were more likely to make more visit to the ANC clinic. In
essence, this finding contradicts that of Banda (2013) where more (72.9%) women with no
formal education were observed to have had four visits and above.

Further, maternal education is associated with improved health, women empowerment and
reduction of gender disparities. However, the relationship between maternal education level
and ANC visits was not significant ($\chi^2=4.237$; df=2; $P=0.120$; $C=0.148$). This study finding
contradict those of (Elo, 1992; Chakraborty et al., 2003; Woldemicael, 2007; Gupta et al.,
2010) who reported that maternal education has a significant bearing on the number of ANC visits.

Results in Table 4.10 also show that four fifths (80%) of women married to men with no formal education made four visits and above, while more than two fifths (46.2%) of women whose spouses had secondary and above level of education made less than four visits. Interestingly, respondents who utilized the services more had spouses with lower levels of education as compared to those who did not utilize them. This could be attributed to the fact that use of antenatal care is not limited to formal education only. Further, Maternity services are now free and there is massive awareness creation by the Ministry of Health (MoH) on utilization of MHCS in the rural areas, in addition to other initiatives such as the Beyond Zero Campaign by the First Lady Margaret Kenyatta.

Indeed, spousal education level was significantly associated with number of ANC visits ($\chi^2=6.133; \text{ df}=2; p=0.047; \text{ C}=0.186$). This study finding corroborate those of Woldemicael, (2007; and Daniels et al., (2013) when they contended that spousal educational level was associated with 4 and above antenatal visits.

Findings of the study in Table 4.10 also show that slightly less than three quarters (73.2%) of women who earned 4,000 shillings and above four visits and above with two fifths (40.0%) of women earning below 4,000 shillings making less than four visits. This finding could be explained on the basis of the Output Based Approach (OBA) program which aims to improve access, equity and uptake of quality reproductive health services to economically disadvantaged women. The women purchase the vouchers at a subsidized price of 100 shillings which entitles them to access reproductive health services such as
Safe Motherhood (SMH), Family Planning (FP) and Gender Based Violence (GBV) recovery services free of charge.

Maternal income was not significantly associated with number of ANC visits ($\chi^2=1.242; df=1; p=0.265; C=0.136$). Notably, this finding is not in tandem with that of Gupta et al., (2010) when they contended that maternal income had a significant influence on the number of ANC visits.

Finally, results in Table 4.10 depict that slightly more than four fifths (81.0%) of women whose spouses earned less than 4,000 shillings made four ANC visits or more compared with (75.5%) of women whose spouses earned 4,000 shillings and above. This finding could be explained by the fact that the Government of Kenya (GoK) abolished maternity fees in all public health facilities through a presidential decree on 1st June 2013 (“MaternalNewbornHealthCare_Kenya_Oct2013.pdf,” n.d.). However, spousal income level was not significantly associated with the number of ANC visits ($\chi^2=0.255; df=1; p=0.613; C=0.059$). Hence we conclude that spousal income level does not influence the number of ANC visits the woman makes during pregnancy.

4.3.3 Relationship between Socio-Demographic Characteristics and Utilization of Skilled Birth Attendance (SBA)

Table 4.11 shows the relationship between Socio-Demographic Characteristics and use of Skilled Birth Attendants services. In this study, an attempt was made to understand the relationship between age and Utilization of Skilled Birth Attendance.
Results of analysis in Table 4.11 indicate that slightly less than three fifths (59.5%) of women aged below 28 years did not have SBA service at birth of their latest child while more than half (54.5%) of the women aged 28 years and above had SBA service during their latest birth. This could be explained by the fact that marriage is seen as a sacred institution in the African set up and thus getting children before marriage was a sign of lack of morals. Accordingly, many young women who were not married ran away from their parent’s home and went to give birth elsewhere.

The relationship between age and SBA service was not significant ($\chi^2=1.530; \text{df}=1; p=0.216; C=0.099$). This finding contradicts those of Daniels et al., (2013) when they contended that use of SBA was more associated with the youth.

Table 4.11 shows that slightly more than three fifths (60.3%) of married women did not have SBA of child born at last birth, while three quarters (75.0%) of women who were unmarried had SBA services. Being married means one has a partner who could take care of them and that is why most respondents had no skilled attendance at birth, while being unmarried makes one to seek SBA services in case labour pains commence when they are all alone at home. Indeed, marital status was significantly associated with SBA services ($\chi^2=5.634; \text{df}=1; p=0.018; C=0.188$). This study’s finding is consistent with that of Daniels et al., (2013) that marital status has a significant association with SBA with single mothers more likely to seek SBA.
Table 4. 11: Relationship between Socio-Demographic characteristics of respondents and use of a Skilled Birth Attendant (SBA)

<table>
<thead>
<tr>
<th>Socio-Demographic characteristics</th>
<th>Skilled Attendance</th>
<th>Unskilled Attendance</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below28 years</td>
<td>40.5</td>
<td>59.5</td>
<td>1.530</td>
<td>1</td>
<td>.216</td>
<td>.099</td>
</tr>
<tr>
<td>28 years and above</td>
<td>54.5</td>
<td>45.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>39.7</td>
<td>60.3</td>
<td>5.634</td>
<td>1</td>
<td>.018*</td>
<td>.188</td>
</tr>
<tr>
<td>Other statuses</td>
<td>75.0</td>
<td>25.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>58.0</td>
<td>42.0</td>
<td>13.463</td>
<td>2</td>
<td>.001**</td>
<td>.284</td>
</tr>
<tr>
<td>Other religions</td>
<td>40.0</td>
<td>60.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>26.6</td>
<td>73.4</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nulliparae</td>
<td>0.0</td>
<td>0.0</td>
<td>16.951</td>
<td>2</td>
<td>.001**</td>
<td>.316</td>
</tr>
<tr>
<td>Primiparae</td>
<td>75.9</td>
<td>24.1</td>
<td></td>
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<tr>
<td>Multiparae</td>
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<td>67.9</td>
<td></td>
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</tr>
<tr>
<td>Grandmultiparae</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Maternal Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>30.9</td>
<td>69.1</td>
<td>12.934</td>
<td>2</td>
<td>.002**</td>
<td>.279</td>
</tr>
<tr>
<td>Primary</td>
<td>52.9</td>
<td>47.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>100.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>34.4</td>
<td>65.6</td>
<td>1.590</td>
<td>1</td>
<td>.451</td>
<td>.106</td>
</tr>
<tr>
<td>Primary</td>
<td>40.5</td>
<td>59.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>35.3</td>
<td>64.7</td>
<td>3.113</td>
<td>1</td>
<td>.078</td>
<td>.233</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>60.0</td>
<td>40.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>36.8</td>
<td>63.2</td>
<td>.037</td>
<td>1</td>
<td>.847</td>
<td>.025</td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>39.5</td>
<td>60.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$
Results in Table 4.11 show that less than three fifths (58.0%) of Christians had skilled attendance at birth, while three fifths (60.0%) of women who belong to Islam and African Traditional Religion had no skilled attendance at birth of child born at last birth. Christian women tend to use SBA more (58.0%) than women who profess Islam and ATR who report (60.0%) utilization of unskilled attendance at birth. According to Stenlund, (2012) women belonging to religions other than Islam have higher odds of delivering with assistance of SBA’s. Indeed, religion was significantly associated with use of SBA services ($\chi^2=13.463; \text{df}=2; \ p=0.001; \ C=0.284$). This finding corroborates that of Stenlund, (2012) who contended that women belonging to other religions had higher odds of delivering with assistance of SBA’s than those of Islamic faith.

Further, findings in Table 4.11 indicate that slightly more than three quarters (75.9%) of Primiparae women had skilled attendance services at birth during latest birth, while more than three fifths (67.9%) of Multiparae women had no skilled attendance during latest birth. Lower parity women are more likely to use SBA than higher parity women because higher parity women have experience due to previous births. As reported by Worku et al., (2013), women who had births for the first time were more likely to use Skilled Birth Attendance services. Indeed, parity was significantly associated with Skilled Birth Attendance ($\chi^2=16.951; \text{df}=2; \ p=0.001; \ C=0.316$). The study’s finding is consistent with those of (Ochako et al., 2011; Kabakyenga et al., 2012; Worku et al., 2013) who contended that parity has a strong bearing on utilization of SBA.

Table 4.11 also depicts that slightly less than one third (30.9%) of women with no formal education had skilled attendance at birth with all women with secondary and higher
education level background having skilled attendance at birth. Education exposes women to information and knowledge on the importance of utilization of SBA and thus skilled birth attendance increases with secondary education and above. According to (Kabakyenga et al., 2012), women with secondary education and above are more likely to use SBA’s than those with lower levels of education. Indeed, maternal education was significantly associated with Skilled Birth Attendance ($\chi^2=12.934; df=2; p=0.002; C=0.279$). This finding is in tandem with those of (Ochako et al., 2011; Worku et al., 2013) who reported that maternal education has a significant bearing on use of SBA.

Table 4.11 further indicates that half (50.0%) of women whose spouses had secondary and higher level of education had skilled attendance services at birth, while more women (65.6%) whose spouses had no formal education had no access to skilled services at delivery. Spousal education level acts as an enabling factor for utilization of SBA. However, spousal education level was not significantly associated with Skilled Birth Attendance ($\chi^2=1.590; df=1; p=0.451; C=0.106$). The finding contradicts those of Daniels et al., (2013) when they reported that spousal educational level was significantly associated with assistance at delivery by a trained medical personnel.

Results in Table 4.11 also indicated that three fifths (60.0%) of women who earned more than 4,000 shillings had skilled attendance at birth, while more than three fifths (64.7%) of the women who earned less than 4,000 shillings did not have skilled attendance during the birth of their current child. Maternal income was not significantly associated with Skilled Birth Attendance ($\chi^2=3.113; df=1; p=0.078; C=0.233$). The study finding is inconsistent with that of Stenlund (2012) who contended that women belonging to the poor and poorest
wealth groups are more likely to receive unskilled assistance than their counterparts in the richest and richer wealth groups.

Results in Table 4.11 show that more than three fifths (63.2%) of women whose spouses earned less than 4,000 shillings did not receive skilled attendance at birth while (60.5%) of those whose spouses earned more than 4,000 shillings received skilled attendance at birth. These proportions are about the same. Hence, spousal income level is not significantly associated with Skilled Birth Attendance ($\chi^2=0.037; \text{df}=1; p=0.847; C=0.025$). Hence we conclude that spousal income level does not have a significant association with use of SBA.

4.3.4 Relationship between Socio-Demographic Characteristics and utilization of maternal health care services as measured by Trimester women sought ANC care

Table 4.12 shows that none of the Socio-Demographic characteristics had a significant association with trimester in which women sought ANC care. Age ($\chi^2=.001; \text{df}=1; p=.982; C=.002$) and marital status ($\chi^2=.224; \text{df}=1; p=.636; C=.042$) were not significantly associated with trimester the woman started ANC visits. These findings are inconsistent with those of (Daniels et al., 2013) who stated that age and marital status plays a significant role in use of ANC services within the first trimester. Religion was not significantly associated with trimester ($\chi^2=.941; \text{df}=2; p=.625; C=.086$). These findings are inconsistent with those of (Olayinka, Joel, & Bukola, 2012) who contended that there was a relationship between religion and trimester women started their ANC visits.
Table 4.12: Relationship between Socio-Demographic Characteristics and Trimester women sought ANC care

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>1st Trimester</th>
<th>2nd &amp; 3rd Trimesters</th>
<th>$\chi^2$</th>
<th>df</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
<td>.001</td>
<td>1</td>
<td>.982</td>
<td>.002</td>
</tr>
<tr>
<td>Below 28 years</td>
<td>24.0</td>
<td>76.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td>23.8</td>
<td>76.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status (%)</strong></td>
<td></td>
<td></td>
<td>.224</td>
<td>1</td>
<td>.636</td>
<td>.042</td>
</tr>
<tr>
<td>Married</td>
<td>24.6</td>
<td>75.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td>18.2</td>
<td>81.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion (%)</strong></td>
<td></td>
<td></td>
<td>.941</td>
<td>2</td>
<td>.625</td>
<td>.086</td>
</tr>
<tr>
<td>Christianity</td>
<td>21.1</td>
<td>78.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>28.3</td>
<td>71.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity (%)</strong></td>
<td></td>
<td></td>
<td>.302</td>
<td>2</td>
<td>.860</td>
<td>.049</td>
</tr>
<tr>
<td>Nullipara</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>28.6</td>
<td>71.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multipara</td>
<td>22.4</td>
<td>77.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandmultipara</td>
<td>26.2</td>
<td>73.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>.803</td>
<td>2</td>
<td>.669</td>
<td>.080</td>
</tr>
<tr>
<td>No formal education</td>
<td>26.3</td>
<td>73.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>20.8</td>
<td>79.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>0.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spousal Education Level (%)</strong></td>
<td></td>
<td></td>
<td>.842</td>
<td>2</td>
<td>.656</td>
<td>.085</td>
</tr>
<tr>
<td>No formal education</td>
<td>31.0</td>
<td>69.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>24.2</td>
<td>75.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary and above</td>
<td>20.0</td>
<td>80.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maternal income (%)</strong></td>
<td></td>
<td></td>
<td>.899</td>
<td>1</td>
<td>.343</td>
<td>.136</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>22.6</td>
<td>77.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>35.3</td>
<td>64.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income of Spouse (%)</strong></td>
<td></td>
<td></td>
<td>.089</td>
<td>1</td>
<td>.765</td>
<td>.042</td>
</tr>
<tr>
<td>Below 4,000 shillings</td>
<td>17.6</td>
<td>82.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,000 shillings and above</td>
<td>21.2</td>
<td>78.8</td>
<td></td>
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</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

Additionally, Parity was not significantly associated with trimester women started their ANC visits ($\chi^2=.302; \ df=2; \ p=.860; \ C=.049$). These findings are inconsistent with those of
(Daniels et al., 2013) who contended that parity has a bearing on trimester that women start receiving antenatal care.

Maternal education was not significantly associated with trimester ($\chi^2 = .803; df=2; p=.669; C=.080$). The study findings are consistent with those of (Daniels et al., 2013) who stated that education level did not have a significant relationship with use of ANC during the first trimester. In addition, spousal education was not significantly associated with trimester ($\chi^2 = .842; df=2; p=.656; C=.085$). The study findings are contrary to those of (Daniels et al., 2013) who contended that spousal education level was associated with trimester women start receiving antenatal care.

Maternal income ($\chi^2 = .899; df=1; p=.343; C=.136$) and spousal income ($\chi^2 = .089; df=1; p=.765; C=.042$) were not significantly associated with the trimester they started ANC visits.

4.3.5 Women’s Preference and Perception of ANC Services Offered at the Healthcare Facilities

Results from Table 4.13 indicate that, more than four fifths (80%) of women visiting a dispensary, a health centre or a sub-district hospital reported being happy with the facility space, neatness and adequacy of privacy that was provided. Of women visiting both categories of facilities, less than a tenth (6.4%) of them preferred being attended to by a male provider with more than two fifths (45.6%) of those visiting the dispensary preferring a female health care provider and those attending health centres and sub-district hospital accounting for less than two fifths (35.9%) preference of female health care provider. This
could possibly be explained by either cultural issues surrounding child birth in the community.

**Table 4.13: Women’s preference and perception of ANC services offered in the health facilities**

<table>
<thead>
<tr>
<th></th>
<th>Dispensary (n= 125)</th>
<th>Health Centre + Sub district hospital (n= 64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting time (minutes) Mean</td>
<td>39.08</td>
<td>54.61</td>
<td>.010**</td>
</tr>
<tr>
<td>Happy with waiting time (%)</td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Yes</td>
<td>99.2</td>
<td>85.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Happy with facility space (%)</td>
<td></td>
<td></td>
<td>.301</td>
</tr>
<tr>
<td>Yes</td>
<td>83.2</td>
<td>88.9</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.8</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>Happy with neatness (%)</td>
<td></td>
<td></td>
<td>.327</td>
</tr>
<tr>
<td>Yes</td>
<td>93.6</td>
<td>89.1</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6.4</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td>Adequate privacy (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>92.0</td>
<td>98.4</td>
<td>.208</td>
</tr>
<tr>
<td>No</td>
<td>8.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Preferred gender of provider (%)</td>
<td></td>
<td></td>
<td>.208</td>
</tr>
<tr>
<td>Male</td>
<td>6.4</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45.6</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>48.0</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td>Preferred type of provider (%)</td>
<td></td>
<td></td>
<td>.001**</td>
</tr>
<tr>
<td>Doctor</td>
<td>53.6</td>
<td>53.1</td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>12.0</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td>20.8</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Traditional Birth Attendant</td>
<td>4.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>A combination</td>
<td>4.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>No preference</td>
<td>5.6</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td>Would you come back to this</td>
<td></td>
<td></td>
<td>.129</td>
</tr>
<tr>
<td>facility (%)</td>
<td>Yes</td>
<td>91.2</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.6</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>7.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Will you recommend this facility to others (%)</td>
<td></td>
<td></td>
<td>.413</td>
</tr>
<tr>
<td>Yes</td>
<td>96.8</td>
<td>98.4</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.4</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: p values *: p < 0.05 **: p < 0.01
Table 4.13 further presents women’s preferences and perceptions of ANC services that are offered at the dispensaries, health centres and sub-district hospital in Ganze District. More than 90% of women attending dispensaries or either health centre or sub-district hospital reported that they would return to the same health facility or would recommend it to others. The mean waiting time in the health centre and sub-district hospital per visit was significantly higher (54.61 minutes) than that in the dispensaries (39.08 minutes). Contrary to expectations, more (99.2%) women were happy with the waiting time at the dispensaries compared to health centres and sub-district hospitals (85.9%), with the latter being higher in the health care delivery system hierarchy in the country.

Results in Table 4.13 show that more than two fifths (48.0%) of women at the dispensaries had no preference on the preferred gender of provider with slightly more than three fifths (60.9%) at the health centres and sub-district hospitals having no preference for gender of health provider. This could be attributed to the fact that both are trained professionals as supported by field interviews and observations. Findings show that half (50%) of women visiting both set of facilities preferred being attended to by a doctor with only 1.6% of those visiting health centres and sub-district hospitals preferring TBA’s as opposed to 4% of those visiting the dispensary. There is a significant relationship between category of facility and waiting time (p=0.010) and the preferred type of provider (p=0.001).

### 4.3.6 Proportion of women who felt reassured about common pregnancy related concerns by health care providers

Study findings on reassurance patterns that women received from their providers about common pregnancy related issues are avidly presented in Table 4.14. Overall, among the
women who attended either a health facility or sub-district hospital, slightly more than four fifths (83%) felt reassured about the position of the baby and that of their own health. However, 87.8% of women who visited dispensaries did not receive information about the size of their unborn baby with more than three fifths (62.7%) receiving information about foetal abnormality. More than three fifths (68.3%) of our total sample who visited the dispensary had received information about the position of the baby, over three fifths (62.6%) on foetal abnormality and over four fifths (82.9%) on mothers own health and those who visited either a health centre or a sub-district hospital had received information about the position of the baby (83.9%), size of the baby (58.1%), foetal abnormality (67.7%) and mothers own health (87.1%) and felt reassured except that only (12.2%) of those who visited dispensaries received information on the size of their babies.

Significantly, those women visiting either a health centre or a sub-district hospital feel much more reassured about the four highlighted pregnancy related complications than those visiting the dispensaries. Women visiting a health centre or a sub-district hospital were significantly associated with receiving information about the position of the baby (p=0.23) and the size of the baby (p=0.001). These findings corroborate those of a study carried out in Gambia by Jallow et al., (2012) which observed that category or type of health facility had a bearing on receiving information about position and size of the unborn baby with women attending private health facilities likely to receive such information than those attending public health facilities.
Table 4.14: Proportion of women who were reassured about common pregnancy related concerns by their service providers

<table>
<thead>
<tr>
<th></th>
<th>Dispensary (n= 125)</th>
<th>Health Centre + Sub district hospital (n= 64)</th>
<th>$\chi^2$</th>
<th>df</th>
<th>P</th>
<th>C</th>
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<tbody>
<tr>
<td><strong>Position of the baby (%)</strong></td>
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<tr>
<td>Yes</td>
<td>68.3</td>
<td>83.9</td>
<td><strong>5.138</strong></td>
<td>1</td>
<td>.023*</td>
<td>.164</td>
</tr>
<tr>
<td>No</td>
<td>31.7</td>
<td>16.1</td>
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</tr>
<tr>
<td><strong>Size of the baby (%)</strong></td>
<td></td>
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</tr>
<tr>
<td>Yes</td>
<td>12.2</td>
<td>58.1</td>
<td><strong>43.435</strong></td>
<td>1</td>
<td>.001**</td>
<td>.436</td>
</tr>
<tr>
<td>No</td>
<td>87.8</td>
<td>41.9</td>
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<tr>
<td><strong>Foetal abnormality (%)</strong></td>
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<td></td>
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</tr>
<tr>
<td>Yes</td>
<td>62.6</td>
<td>67.7</td>
<td>.475</td>
<td>1</td>
<td>.491</td>
<td>.051</td>
</tr>
<tr>
<td>No</td>
<td>37.4</td>
<td>32.3</td>
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</tr>
<tr>
<td><strong>Mother’s own health (%)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Yes</td>
<td>82.9</td>
<td>87.1</td>
<td><strong>.542</strong></td>
<td>1</td>
<td>.461</td>
<td>.054</td>
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</tbody>
</table>

Note: p values *: $p \leq 0.05$  **: $p \leq 0.01$

However, no significant relationship exists between receiving information on foetal abnormality ($p=0.491$) and mothers own health ($p=0.461$) and the category of health facility one visits. This finding is inconsistent with that of Jallow et al., (2012) who contended that category of facility had a significant association with receiving information about foetal abnormality and the health of the mother during the pregnancy term. Thus, findings in Table 4.14 clearly show that women of reproductive age (18-49) in Ganze District would prefer to visit either a health centre or a sub-district hospital owing to reassurance they get concerning complications to their unborn children and that of their own health.
4.4: Logistic Regression Analyses

Binomial logistic regression was undertaken because it examines the influence that a set of independent (predictor) variables have on a categorical (usually dichotomous) variable by estimating the probability of the outcome occurring (Wuensch, 2014). Binomial logistic regression was undertaken for the three dependent variables: Place of Delivery, Number of ANC visits to the clinic before birth of current child and Skilled Birth Attendance which is without doubt the single most critical intervention in reducing maternal mortalities and morbidities (Mpembeni et al., 2007).

In this part of the analysis, only five socio-demographic variables were included in the model: age, marital status, religion, education and parity. The rationale behind this is that preliminary analysis showed that only these five socio-demographic variables were significant either at the bivariate and multivariate level of analysis.

4.4.1 Binary Logistic Regression on Socio-Demographic Characteristics and Institutional Delivery Service Utilization

In Table 4.15 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization of Institutional Delivery services. Results from Table 4.15 indicate that except for mother’s age and level of education, all the selected socio-demographic characteristics are significant predictors of utilization of institutional delivery services in Ganze district.
Table 4.15: Binary Logistic Regression results with odds ratios and 95% confidence interval for Institutional Delivery service utilization

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
</tr>
<tr>
<td>28 years and above</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>153</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td>0.330</td>
</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Parity</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primiparae®</td>
<td>29</td>
<td>12.301</td>
<td>2</td>
<td>12.301</td>
<td>2</td>
<td>0.002**</td>
<td>(2.315-19.897)</td>
<td></td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.915</td>
<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>0.001**</td>
<td>(1.618-21.668)</td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>0.007**</td>
<td>(1.618-21.668)</td>
<td></td>
</tr>
</tbody>
</table>

Missing Cases =36  ® - Reference category; Note: p values *: p ≤ 0.05  **: p ≤ 0.01

From Table 4.15, it is evident that Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) likely to have institutional delivery service utilization than Primiparae women. Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) likely to have institutional delivery service utilization than Primiparae women. Institutional delivery service utilization was also more common among women belonging either to Islam, ATR and those women who professed no religion (AOR 3.091,
95% CI, 1.447-6.602, p=0.004). The probability was much less for women who were unmarried (AOR 0.170, 95% CI 0.039-0.749, p= 0.019).

4.4.2 Regression on Socio-Demographic Characteristics and Number of ANC Visits

In Table 4.16 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the number of ANC visits made to the clinic.

Table 4.16: Binary Logistic Regression results with odds ratios and 95% confidence interval for Number of ANC visits

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 28 years</td>
<td></td>
<td>1.766</td>
<td>0.844</td>
<td>4.384</td>
<td>1</td>
<td>5.849 (1.120-30.553)</td>
<td>0.036*</td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td>1.766</td>
<td>0.844</td>
<td>4.384</td>
<td>1</td>
<td>5.849 (1.120-30.553)</td>
<td>0.036*</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>189</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td>-1.320</td>
<td>0.573</td>
<td>5.297</td>
<td>1</td>
<td>0.267 (0.087-0.822)</td>
<td>0.021*</td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td>-1.320</td>
<td>0.573</td>
<td>5.297</td>
<td>1</td>
<td>0.267 (0.087-0.822)</td>
<td>0.021*</td>
<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Christian</td>
<td></td>
<td>0.080</td>
<td>0.362</td>
<td>0.048</td>
<td>1</td>
<td>1.083 (0.533-2.199)</td>
<td>0.826</td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td>0.080</td>
<td>0.362</td>
<td>0.048</td>
<td>1.083</td>
<td>1</td>
<td>1.083 (0.533-2.199)</td>
<td>0.826</td>
<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>189</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td>-0.153</td>
<td>0.407</td>
<td>0.141</td>
<td>1</td>
<td>0.859 (0.387-1.906)</td>
<td>0.708</td>
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</tr>
<tr>
<td>Some formal education</td>
<td></td>
<td>-0.153</td>
<td>0.407</td>
<td>0.141</td>
<td>1</td>
<td>0.859 (0.387-1.906)</td>
<td>0.708</td>
<td></td>
</tr>
<tr>
<td>Parity</td>
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<td>Nulliparae®</td>
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<td>36</td>
<td>13.605</td>
<td>3</td>
<td></td>
<td>6.499 (2.097-20.145)</td>
<td>0.003**</td>
<td></td>
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<tr>
<td>Primiparae</td>
<td></td>
<td>29</td>
<td>1.872 .577</td>
<td>10.515</td>
<td>1</td>
<td>6.499 (2.097-20.145)</td>
<td>0.001**</td>
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</tr>
<tr>
<td>Multiparae</td>
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<td>81</td>
<td>1.508 0.481</td>
<td>9.841</td>
<td>1</td>
<td>4.516 (1.761-11.585)</td>
<td>0.002**</td>
<td></td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td></td>
<td>43</td>
<td>1.314 0.609</td>
<td>4.660</td>
<td>1</td>
<td>3.722 (1.129-12.273)</td>
<td>0.031*</td>
<td></td>
</tr>
</tbody>
</table>

® - Reference category; Note: p values *:p≤ 0.05 **: p≤ 0.01
Results from Table 4.16 indicate that mother’s age, marital status and parity are significant predictors of the number of ANC visits women will make before delivery in Ganze district.

From Table 4.16, it is evident that women aged above 28 years (AOR 5.849, 95% CI 1.120-30.553, p=0.036) and those who were single, separated, divorced and widowed (AOR 0.267, 95% CI 0.087-0.822, p=0.021) were more likely to make four or more antenatal visits to the clinic before delivery of their latest child. Further, parity was found to have a significant impact on the number of ANC visits with Primiparae women being six times (AOR 6.499, 95% CI 2.097-20.145, p=0.001) more likely to make four or more ANC visits than Nulliparae women; Multiparae women being five times (AOR 4.516, 95% CI 1.761-11.585, p=0.002) likely to make four or more visits than Nulliparae women and lastly Grandmultiparae women being four times (AOR 3.722, 95% CI 1.129-12.273, p=0.031) likely to make four or more visits to the ANC clinic than Nulliparae women.

**4.4.3 Binary Logistic Regression on Socio-Demographic Characteristics and Skilled Assistance during Delivery**

In Table 4.17 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the utilization skilled attendance during delivery. Results from Table 4.17 indicate that apart from mother’s age educational status, all other selected socio-demographic characteristics are significant predictors of utilization of skilled assistance during delivery in Ganze district.
Table 4.17: Binary Logistic Regression results with odds ratios and 95% confidence interval for Skilled Assistance during Delivery

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>153</td>
<td>-0.843</td>
<td>0.566</td>
<td>2.216</td>
<td>1</td>
<td>0.430</td>
<td>(0.142-1.306)</td>
<td>0.137</td>
</tr>
<tr>
<td>Below28 years</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
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</tr>
<tr>
<td>Marital status</td>
<td>153</td>
<td>-1.771</td>
<td>0.756</td>
<td>5.485</td>
<td>1</td>
<td>0.170</td>
<td>(0.039-0.749)</td>
<td>0.019*</td>
</tr>
<tr>
<td>Married</td>
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</tr>
<tr>
<td>Other statuses</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>153</td>
<td>1.128</td>
<td>0.387</td>
<td>8.492</td>
<td>1</td>
<td>3.091</td>
<td>(1.447-6.602)</td>
<td>0.004**</td>
</tr>
<tr>
<td>Christian</td>
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<td></td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>153</td>
<td>-0.397</td>
<td>0.408</td>
<td>0.949</td>
<td>1</td>
<td>0.672</td>
<td>(0.302-1.495)</td>
<td>0.330</td>
</tr>
<tr>
<td>No formal education</td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
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<tr>
<td>Primiparae®</td>
<td>29</td>
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<td>0.549</td>
<td>12.180</td>
<td>1</td>
<td>6.787</td>
<td>(2.315-19.897)</td>
<td>0.002**</td>
</tr>
<tr>
<td>Multiparae</td>
<td>81</td>
<td>1.779</td>
<td>0.662</td>
<td>7.220</td>
<td>1</td>
<td>5.921</td>
<td>(1.618-21.668)</td>
<td>0.007**</td>
</tr>
<tr>
<td>Grandmultiparae</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Missing cases = 36 Ⓞ - Reference category; Note:p values *: p ≤ 0.05 **: p ≤ 0.01

Table 4.17 depicts that Muslim women, those who believed in ATR and who professed no religion were three times (AOR 3.091, 95% CI 1.447-6.602, p=0.004) more likely to use the assistance of a Skilled Birth Attendant than Christian women. Further, women who were unmarried were (AOR 0.170, 95% CI 0.039-0.749, p=0.019) less likely to use the assistance of a Skilled Birth Attendant. Multiparae women were seven times (AOR 6.787, 95% CI 2.315-19.897, p=0.001) more likely to use a Skilled Birth Attendant than
Primiparae women and Grandmultiparae women were six times (AOR 5.921, 95% CI 1.618-21.668, p=0.007) more likely to use a Skilled Birth Attendant during birth than Primiparae women.

4.4.4 Binary Logistic Regression on Socio-Demographic Characteristics and Trimester women started attending ANC clinic

In Table 4.18 Binary Logistic Regression (BLR) was carried out to determine the influence of the socio-demographic characteristics on the trimester that women started making ANC visits to the clinic. Results from Table 4.18 indicate that all selected socio-demographic characteristics are not significant predictors of the timing that women start making ANC visits to the clinic in Ganze district.

Table 4.18: Binary Logistic Regression results with odds ratios and 95% confidence interval for Trimester women started attending ANC clinic

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N</th>
<th>B</th>
<th>Std Error</th>
<th>Wald</th>
<th>df</th>
<th>Exp(B)</th>
<th>CI (95%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at most recent birth</td>
<td>125</td>
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<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038</td>
<td>(0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Below 28 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 years and above</td>
<td></td>
<td>0.37</td>
<td>0.622</td>
<td>0.004</td>
<td>1</td>
<td>1.038</td>
<td>(0.306-3.515)</td>
<td>0.952</td>
</tr>
<tr>
<td>Marital status</td>
<td>125</td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474</td>
<td>(0.296-7.344)</td>
<td>0.636</td>
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<tr>
<td>Married</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other statuses</td>
<td></td>
<td>0.388</td>
<td>0.819</td>
<td>0.224</td>
<td>1</td>
<td>1.474</td>
<td>(0.296-7.344)</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>125</td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789</td>
<td>(0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other religions &amp; No Religion</td>
<td></td>
<td>-0.237</td>
<td>0.449</td>
<td>0.278</td>
<td>1</td>
<td>0.789</td>
<td>(0.327-1.904)</td>
<td>0.598</td>
</tr>
<tr>
<td>Respondents Education status</td>
<td>125</td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1</td>
<td>1.326</td>
<td>(0.516-3.365)</td>
<td>0.558</td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some formal</td>
<td></td>
<td>0.282</td>
<td>0.482</td>
<td>0.343</td>
<td>1</td>
<td>1.326</td>
<td>(0.516-3.365)</td>
<td>0.558</td>
</tr>
</tbody>
</table>
Results in Table 4.18 show that there exists no significant relationship between the socio-demographic characteristics of the respondents and the trimester that they first started attending ANC clinic. However, women aged above 28 years (AOR 1.038, 95% CI 0.306-3.515, p=0.952) and those who were unmarried (AOR 1.474, 95% CI 0.296-7.344, p=0.636) were one time more likely to make their first visit to the ANC clinic during the first trimester of their pregnancy. Multiparae women (AOR 1.708, 95% CI 0.284-10.295, p=0.559) were two times more likely to make their first ANC visit during the first trimester than Primiparae women with Grandmultiparae women (AOR 1.438, 95% CI 0.207-9.997, p=0.714) being one more time likely to make their first ANC visit during the first trimester than Primiparae women.
CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary
This section presents a summary of the comparison of results of the relationship between the socio-demographic characteristics of the study respondents and variables used to measure the utilization of MHCS at both the Bivariate and Multivariate Logistic Regression Analyses to try and find out what determines utilization of maternal healthcare services in Ganze district. The findings of this study as shown in Table 5.1, Table 5.2, Table 5.3 and Table 5.4 confirm that the four indicators of utilization of maternal health care services are affected differently by the various socio-demographic characteristics in the entire Ganze district at the bivariate and multivariate levels of analyses. Further, the differences in the utilization of the different maternal health care services as espoused by the two levels of analyses will enable us to clearly focus on what should be done in an effort to improve utilization levels.

5.1.1 Comparison of results of relationship between socio-demographic characteristics and institutional service delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.1 shows the relationship of all the socio-demographic characteristics of the respondents with institutional delivery service utilization both at the Bivariate and Multivariate levels of analyses to find out what predicts institutional delivery service utilization.
Table 5.1: Comparison of results of relationship between Socio-Demographic characteristics and Institutional Service Delivery utilization at the Bivariate and Multivariate Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>1.539</td>
<td>0.463</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.043</td>
<td>0.056</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>21.384</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>Respondents education</td>
<td>13.612</td>
<td><strong>0.009</strong></td>
</tr>
<tr>
<td>Parity</td>
<td>18.216</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

Findings in Table 5.1, interestingly show that while at the Bivariate level analysis, maternal education was significantly ($p=0.009$) related to institutional delivery services utilization, at the Multivariate level analysis it has no significant bearing on the utilization of the institutional delivery services ($p=0.330$). This is not to imply that education is not an important predictor of institutional delivery service utilization at all since it exposes women to access and knowledge on maternal health issues. This finding could be attributed in the way the variable education was coded and it could also be explained by the fact that there has been massive campaigns by the GoK and MoH in sensitizing the population about the importance of utilization of maternal health care services to avert the dangers that are associated with pregnancy and child birth through other media such as the radio, television and even the chiefs ‘barazas’. Marital status of the mothers is insignificant ($p=0.056$) at the bivariate level analysis but proves to be significant ($p=0.019$) at the multivariate level analysis. Religion and Parity of the mothers were found to be both significant at the bivariate and multivariate levels of analyses.
5.1.2 Comparison of results of relationship between Socio-Demographic characteristics and the Number of ANC Visits at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.2 shows the relationship of all the socio-demographic characteristics of the respondents and number of ANC visits that women make to the health facilities both at the Bivariate and Multivariate levels of analyses to find out what predicts the number of ANC visits that mothers make to the health facility.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>P</td>
</tr>
<tr>
<td>Age</td>
<td>7.063</td>
<td><strong>0.008</strong></td>
</tr>
<tr>
<td>Marital Status</td>
<td>7.747</td>
<td><strong>0.005</strong></td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>7.674</td>
<td><strong>0.022</strong></td>
</tr>
<tr>
<td>Respondents’ education</td>
<td>4.237</td>
<td>0.120</td>
</tr>
<tr>
<td>Parity</td>
<td>24.609</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Note: p values **:*p≤ 0.05 **: p≤ 0.01

From Table 5.2, it is interesting to note that despite the fact we expected education to be a significant determinant of the number of ANC visits that mothers make to the clinic due to access and use of knowledge on maternal health issues acquired during formal education, maternal education is insignificant both at the Bivariate and Multivariate level analyses. Further, while religious affiliation is significant at the Bivariate level (p=0.022), it is insignificant (p=0.826) at the Multivariate level analysis after controlling for the effects of the other variables under study.

Age of the mothers, marital status and parity prove to be significant at the 95.0%
confidence interval both at the Bivariate and Multivariate level analyses as shown in Table 5.2. The study found out that mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the number of visits they make to the health facility at the Multivariate regression analysis level as indicated by these findings.

### 5.1.3 Comparison of results of relationship between Socio-Demographic characteristics and use of Skilled Birth Attendants at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.3 shows the relationship of all the socio-demographic characteristics of the respondents and the use of Skilled Birth Attendants (SBA) both at the Bivariate and Multivariate levels of analyses to find out what predicts utilization of Skilled Birth Attendants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>1.530</td>
<td>0.216</td>
</tr>
<tr>
<td>Marital Status</td>
<td>5.634</td>
<td>0.018*</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>13.463</td>
<td>0.001**</td>
</tr>
<tr>
<td>Respondents education</td>
<td>12.934</td>
<td>0.002**</td>
</tr>
<tr>
<td>Parity</td>
<td>16.951</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

Note: p values *: $p \leq 0.05$ **: $p \leq 0.01$

From Table 5.3, apart from the age of the mothers; marital status, religious affiliation, maternal education, and parity all prove to be significant at the 95.0% confidence interval at the Bivariate level of analysis. However, while marital status, religious affiliation and parity still prove to be significant at the Multivariate level of analysis and thus strongly
predicting the utilization of Skilled Birth Attendants, but maternal education does not.

5.1.4 Comparison of results of relationship between Socio-Demographic characteristics and trimester mothers started attending ANC clinic at the Bivariate and Multivariate Logistic Regression Analyses

Table 5.4 shows the relationship of all the socio-demographic characteristics of the respondents and the trimester that mothers started attending ANC clinic both at the Bivariate and Multivariate levels of analysis to find out what predicts utilization of maternal health care services.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Bivariate analysis</th>
<th>Logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>$p$</td>
</tr>
<tr>
<td>Age</td>
<td>0.001</td>
<td>0.982</td>
</tr>
<tr>
<td>Marital Status</td>
<td>0.224</td>
<td>0.636</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td>0.941</td>
<td>0.625</td>
</tr>
<tr>
<td>Respondents education</td>
<td>0.803</td>
<td>0.669</td>
</tr>
<tr>
<td>Parity</td>
<td>0.302</td>
<td>0.860</td>
</tr>
</tbody>
</table>

Note: $p$ values *:* $p \leq 0.05$ **:* $p \leq 0.01$

From Table 5.4, it is evident that all the socio-demographic characteristics have no significant bearing on the trimester that women start attending antenatal clinic for their check-ups both at the Bivariate and Multivariate levels of analyses.

5.2 Conclusion
The findings of this study confirm that a woman’s marital status, religious affiliation and parity are strong predictors of institutional delivery service utilization. Further, mother’s age at birth, marital status and parity strongly predict utilization of ANC services by the
number of visits that the mothers make to the health facility and lastly marital status, religious affiliation and parity strongly predict utilization of SBA’s. In addition, Parity proved to be a strong predictor of utilization of almost all the four maternal health care services apart from trimester that women started attending ANC clinic as it predicts their utilization both at the bivariate and multivariate level analysis at 95.5% confidence interval.

More women who are unmarried, those affiliated to non-Christian faiths, low parity women and those aged 28 years and above utilize maternal health care services more.

5.3 Recommendations

Evidence from this study enables making of suggestions and recommendations in three vital areas. First, the findings have some implications on the formulation of public health policies that will lower maternal morbidities and mortalities by improving utilization of MHCS. Second, it has practical implications on public health care practice and lastly it has implications for further research to uncover whatever has not been researched on in this study and others and thus update sociological knowledge on this important topic to help reduce maternal morbidities and mortality.

5.3.1 Recommendations for Policy

1. It is recommended from the findings of this study that stakeholders in maternal health care such as the National and County governments and the Civil Society Organizations make deliberate policies that will involve women aged 28 years and above as role models to sensitize other women on the importance of making the required number of ANC visits.
2. Policy provisions can also be developed by county governments and the civil society organizations to enhance women utilization of maternal health care services through an incentive and reward system to those women who make the required ANC visits and deliver in institutional care or under SBA supervision.

3. It is recommended that the national government come up with a policy that will ensure that maternal health care services are provided in most public health care facilities on a daily basis and not on specific days so that expectant women can access the services whenever they need them.

4. Further, deliberate policy should be formulated to encourage county governments to have ANC facilities at sub county levels. Alternatively, it can be a matter of policy, especially at the county government level that most health facilities should have at least a delivery room and trained personnel to provide an opportunity for expectant women to access professional ANC services and deliver under the care of professional staff. Such a policy will enhance women delivery under professional care reducing maternal morbidity and mortality and that of their new born babies.

5. It is recommended through the Ministry of Education, Science and Technology that the government strengthen affirmative action as a matter of policy to ensure that girl child education is prioritised in order to improve educational standards of women. This is envisioned as a long term policy strategy that will provide them with avenues and opportunities of acquiring information about use and importance of utilizing maternal health care services.
6. It is recommended that public health policy on awareness on the importance of utilization of institutional delivery service be initiated with a clear focus on high parity women, women with low education levels and women who professed Islam and ATR. Such a policy strategy can be a panacea for ensuring enhanced utilization of institutional delivery to this segment of the population especially in the study area.

5.3.2 Recommendations for Practice

1. With regards to the prevailing pattern of late and irregular antenatal clinic attendance, it is recommended that there be awareness creation by maternal health care stakeholders such as governments and NGOs on (ANC timing) when mothers should commence their ANC visits and the number of visits they should make until they give birth.

2. It is recommended that there be awareness creation by the National and County governments, NGOs and FBOs on the importance of using institutional delivery service or skilled midwifery assistance/skilled birth attendance at every child birth as it helps in reducing maternal and child deaths.

3. It is recommended to health and development workers that improving community awareness and perception on skilled providers and their care through community meetings by targeting women who prefer non skilled health care providers and those who lack awareness on the importance of utilization of maternal health care
services to themselves and their unborn children will help in reducing maternal and child deaths.

4. It is recommended that a doctor be posted to serve in the district as most mothers said they would like to be attended to by a trained medical doctor and only Clinical Officers and nurses were found at their work stations during the study period.

5. It is recommended that at least one ambulance should be supplied to the district and it be stationed at a central facility where it can easily coordinate in case maternal emergencies occur.

6. It is recommended that efforts be made by the health providers to ensure patients privacy during ANC and delivery care is kept to improve institutional delivery thus enhancing utilization of a major maternal health care service thus reducing maternal mortality.

5.3.3 Recommendations for Further Research

1. Given the high maternal morbidity and mortality not only in the study area but in Kenya and the region, it is prudent for researchers to understand the why with regard to the persistency of the problem and the how best can governments and the civil society mitigate the problem.

2. It is recommended that further research be carried out to establish why is it that women who profess Islam make the required (four and more) number of ANC visits but rarely have Institutional delivery service utilization.
3. More research is also needed to bring out the rural urban differential in not only maternal health care utilization but the differential factors with significance influence on ANC visits and institutional delivery.

4. Further research is also prudent to focus on other determinants of maternal health care utilization not considered in this study. Understanding the multiplicity of factors with an influence on maternal health care utilization is key in the development of interventions that will work in reducing maternal morbidity and mortality including that of their infants.
REFERENCES


Appendix 1: Consent Form

CONSENT FORM

PART 1: INFORMATION SHEET

I am Stanley Wechuli Wanjala a postgraduate student at Pwani University registration number C50/PUC/2098/11 and E-mail address: (stanleywanjala@gmail.com) supervised by Professor Halimu Suleiman Shauri- E-mail address hshauri@yahoo.com. I am carrying out a research titled “Determinants of Maternal Health care Utilization in Ganze District, Kilifi County of Kenya.” I am going to give you information about all what the research entails and invite you to be part of this research as a respondent. If you have any questions later, you can ask.

Purpose of research

Maternal and child health are key health issues in the world. The reason I am doing this research is to find out the factors that affect utilization of maternal health care services and to establish women’s preference and perception of ANC services offered at the healthcare facilities with regard to their influence on maternal health care utilization in Ganze district. By so doing, I will be able to advice the government and other health stakeholders on best practices in maternal health and help in policy formulation.

The reason why I am inviting you to be a respondent is because I am inviting all women between the ages of 18-49 years to participate in this research. Your participation in this research is entirely voluntary- It is your choice whether to participate or not.

The information that you give during this research will be kept confidential. Information about you that will be collected during the research will be put away and no one but the researcher (I) will be able to see it. Any information on you will have a number on it instead of your name for confidentiality purposes. You can ask any questions regarding the study or your participation in this study.

PART 2: CERTIFICATE OF CONSENT

I have read the foregoing information or it has been read to me. I have had the opportunity to ask questions about it and any questions that have been asked have been answered to my satisfaction.

I consent voluntarily to participate as a respondent in this research.

Name of participant: ______________________________

Signature of participant: __________________________

Date: _____________________________________________


Appendix 2: Interview Schedule

DETERMINANTS OF MATERNAL HEALTH CARE SERVICE UTILIZATION IN GANZE DISTRICT, KILIFI COUNTY OF KENYA

INTERVIEW SCHEDULE

Dear respondent,
Please answer the questions to the best of your understanding. Your cooperation in this study is highly appreciated and all the information you provide will be treated with utmost confidentiality. Thank you for your cooperation.

Name of Health Facility: __________________________
Category of Facility: [  ] Dispensary [  ] Health Centre [  ] Sub-District Hospital [  ] District Hospital
Ownership: [  ] Government [  ] Private for Profit [  ] Faith Based [  ] NGO/CBO
Division: _________________________________________
Location: _________________________________________
Sub-Location: _____________________________________

PART I: SOCIO - DEMOGRAPHIC CHARACTERISTICS

Q1. Could you please tell me your age?
   a) 18-22 years [  ]
   b) 23-27 years [  ]
   c) 28-32 years [  ]
   d) 33-37 years [  ]
   e) 38-42 years [  ]
   f) 43-47 years [  ]
   g) 48-52 years [  ]

Q2. What is your marital status?
   a) Single [  ]
   b) Married [  ]
   c) Divorced [  ]
   d) Widowed [  ]
   e) Separated [  ]
   f) Other (State) ________________________________

Q3. What is your religious affiliation?
   a) Christian (Catholic) [  ]
   b) Christian (Protestant) [  ]
   c) Christian (SDA) [  ]
   d) Jewish [  ]
   e) Muslim [  ]
   f) Hindu [  ]
Q4. What is your level of education?
   a) Non Formal Education [ ]
   b) Some primary education [ ]
   c) Primary school Completed [ ]
   d) Some Secondary education [ ]
   e) Secondary school completed [ ]
   f) University (Bachelors) [ ]
   g) Other (State) __________________________

Q5. If married, or in a stable relationship, could you kindly state your spouse’s level of education?
   a) Non Formal Education [ ]
   b) Some primary education [ ]
   c) Primary school Completed [ ]
   d) Some Secondary education [ ]
   e) Secondary school completed [ ]
   f) University (Bachelors) [ ]
   g) Other (State) __________________________

Q6 (a) If have some level of education, have you undergone any formal professional training since completion/dropping out of school?
   a) Yes [ ]
   b) No [ ]

(b) If Yes State which one(s)
   __________________________________________________________________________
   __________________________________________________________________________

Q7. What is your main source of income?
   a) Farming [ ]
   b) Government employee [ ]
   c) Employment private sector [ ]
   d) Employment NGO/CBO [ ]
   e) Employment FBO [ ]
   f) Small business person [ ]
   g) Casual Employee [ ]
   h) No source of income at the moment [ ]
   i) Other (State) __________________________

Q8. What would you consider as the main source of income for your spouse/partner?
   a) Farming [ ]
   b) Government employee [ ]
Q9. What is your average monthly earning from all your sources of income?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8000 to 10,000 [ ]
   f) 10,000 to 12,000 [ ]
   g) 12001 to 14000 [ ]
   h) 14001 to 16000 [ ]
   i) 16000 to 18000 [ ]
   j) 18001 to 20000 [ ]
   k) KShs. 20001 or more (State amount) ______________________________________

Q10. What is the approximate average monthly earnings of your spouse or partner from all the sources?
   a) KShs. 2000 or less [ ]
   b) KShs. 2001 to 4000 [ ]
   c) KShs. 4001 to 6000 [ ]
   d) 6001 to 8000 [ ]
   e) 8000 to 10,000 [ ]
   f) 10,000 to 12,000 [ ]
   g) 12001 to 14000 [ ]
   h) 14001 to 16000 [ ]
   i) 16000 to 18000 [ ]
   j) 18001 to 20000 [ ]
   k) KShs. 20001 or more (State amount) ______________________________________

Q11. (a) How many children do you have in total? (Indicate number by Gender)
      Males: ___________ Females: ___________ Total: ___________

      (b) Could you kindly indicate their age beginning from the eldest to this one?
<table>
<thead>
<tr>
<th>Child number</th>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td></td>
<td></td>
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<td>6</td>
<td></td>
<td></td>
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<td>7</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q 12. Who makes the decision for you to seek maternal health care?
- Self [ ]
- Husband [ ]
- Husband and me [ ]
- If other explain ________________________________

SECTION B: KNOWLEDGE OF ANC

Q1. How did you first know about ANC?
- Through friends [ ]
- School [ ]
- Hospital [ ]
- Others [ ]

Q2. Are you aware of the services rendered at ANC Clinic?
- Yes [ ]
- No [ ]

Q3. ANC helps detect complications during pregnancy
- Yes [ ]
- No [ ]

Q4. ANC helps reduce maternal mortality and morbidity
- Yes [ ]
- No [ ]

SECTION C: ACCESS TO REPRODUCTIVE HEALTHCARE

Q1. Have you ever delivered any of your children in the hospital?
- Yes [ ]
- No [ ]
Q2. Kindly indicate the place of birth of your children beginning from the first born to the last born. (1=Hospital with the help of a trained health professional; 2=Home with the help of Traditional Birth Attendant; 3= At home alone or with the help of a relative; 4=At the Traditional Birth Attendants special clinic/home; 5= On the way to hospital with the help of a stranger-relative; 6=Other (State))

<table>
<thead>
<tr>
<th>Child number</th>
<th>Place of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
</tbody>
</table>

Q3. (a) Reflecting back on your first pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)

(c) How many visits did you make to the ante natal clinic before the delivery of your first born child?

(d) How many visits did you make to the post natal clinic after the delivery of your first born child?

Q4. (a) Reflecting back on your last pregnancy, at what stage did you first visit a maternal health clinic? (Indicate the exact month of the 9 months and indicate never for those who did not visit one)

(b) Is there any reason why you did visit the clinic at the time you did? (Probe for what facilitated or any barrier if there is)
(c) How many visits did you make to the ante natal clinic before your latest delivery?

(c) How many visits did you make to the post natal clinic after your latest delivery?

Q5. How far is the nearest clinic offering maternal health services? *(How long does it take for an adult to walk to the facility?)* NB: one Kilometre may require 15 minutes of walk.

Q6. In your view, is the distance to the facility a concern? *(Explain your answer)*

   Yes [ ]

   No [ ]

Reason:

Q7. In your view, is the attitude of the health care providers a concern? *(Explain your answer)*

   Yes [ ]

   No [ ]

Reason:

Q8. In your view, does your religion influence how you seek ANC services? *(Explain your answer)*

   Yes [ ]

   No [ ]

Reason:

Q9. When visiting the nearest health facility during your pregnancy clinic appointments, what was the predominant means of transport used? *(Probe for cost and duration in minutes to facility)*

<table>
<thead>
<tr>
<th>Means</th>
<th>Tick one used</th>
<th>Cost (KShs.)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Motorcycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bicycle boda boda</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
123

<table>
<thead>
<tr>
<th>Own/family Motorcycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own/family bicycle</td>
</tr>
<tr>
<td>Private car/vehicle</td>
</tr>
<tr>
<td>Public Service vehicle</td>
</tr>
<tr>
<td>Other (State)__________</td>
</tr>
</tbody>
</table>

Q10. In the facility you visited (for those who did not visit, the nearest healthcare facility), what maternal healthcare services does that facility offer? *(Kindly indicate whether those attending received the services)*

<table>
<thead>
<tr>
<th>Service</th>
<th>Availability</th>
<th>Received service in last pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palpation of the abdomen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus vaccination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron supplementation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasound services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarial treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health talk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of PMTCT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Delivery Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Deliveries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration of births</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization of newborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of treated bed nets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling on family planning options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11. During your last visit to the maternal health care facility, did you receive information on the following services?

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foetal abnormality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your health status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q12.(i) are you aware of family planning methods?

a) Yes [ ]
b) No [ ]
(ii) Have you ever used any family planning method?
a) Yes [ ]
b) No [ ]
(iii) If YES which method have you used? (*Probe whether he is currently using the method*)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Ever Used</th>
<th>Currently Using</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pills (Postinor 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IUD (intrauterine device)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Norplant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Condoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sexual Abstinence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Tubal ligation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Calendar/safe days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13. (i) Have you ever stopped using any of the family planning methods at any one time?
   Yes [ ]
   No [ ]
(ii) If you have ever stopped, kindly provide reason for your decision

________________________________________________________________________
________________________________________________________________________

Q14 Are you aware of any taboos related to child birth in your community?
   Yes [ ]
   No [ ]

If yes, list them

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

b) Do you believe in these taboos?
   Yes [ ]
   No [ ]

If yes, which taboos do you believe in?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Perceptions: Maternal and Child health practices

Q1. When visiting the nearest health facility during your pregnancy clinic appointments, how many minutes did you wait before the healthcare provider attended to you?

___________________________________________________

Q2. Are you happy with the time you spent with the healthcare provider during your appointments?

   Yes [ ]  
   No [ ]

a) If yes, why?

___________________________________________________

___________________________________________________

b) If No, would you prefer to have?

   A lot more time [ ]
   A little more time [ ]
   Time is about right [ ]

b) Are you happy with the facility space?

   Yes [ ]
   No [ ]

Explain___________________________________________________

___________________________________________________

c) Are you happy with the facility neatness?

   Yes [ ]
   No [ ]

Explain___________________________________________________

___________________________________________________

d) Who is your preferred gender of provider?

   Male [ ]
   Female [ ]
   No preference [ ]

Explain___________________________________________________

___________________________________________________

e) Who is your preferred type of provider?

   Doctor [ ]
   Nurse [ ]
Midwife [ ]
Traditional Birth Attendant [ ]
A combination [ ]
No preference [ ]

Explain______________________________________________________________________________________

f) Would you come back to this facility?
   Yes [ ]
   No [ ]
   Don’t know [ ]
   Give reasons for your answer

________________________
________________________

_g) Will you recommend this facility to others?
   Yes [ ]
   No [ ]
   Don’t know [ ]
   Give reasons for your answer

________________________
________________________

Q3. Are you happy with the privacy that you were accorded during the consultation with the health care provider?
   Yes [ ]
   No [ ]

Q4. How would you rate the following services that you received at the health facility?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of food served</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reception upon arrival at the health facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude of medical personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of equipments/facilities</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Q5. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your first visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Q6. If you were given another option (healthcare facility) in your first visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain____________________________________________________________________________________

Q7. In your opinion, how would you rate the following ante-natal care services of the health care facility you visited during your last visit?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
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</thead>
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<td>Stool test</td>
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</tr>
<tr>
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<td>C-Section Deliveries</td>
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<tr>
<td>Registration of births</td>
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<tr>
<td>Provision of treated bed nets</td>
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<tr>
<td>Counselling on family planning options</td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Normal Delivery Services
C-Section Deliveries
Registration of births
Immunization of newborn
Provision of treated bed nets
Counselling on family planning options

Q8. If you were given another option (healthcare facility) in your last visit, would you have still attended this facility?
   Yes [ ]
   No [ ]

Explain________________________________________________________

Q9. Any additional comments
_____________________________________________________________
_____________________________________________________________
_____________________________________________________________

Thank you for your cooperation.
Appendix 3: Certificate of Ethical Approval

NACOSTI ACCREDITED

ETHICS REVIEW COMMITTEE
ACCREDITED BY THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION (NACOSTI, KENYA)

CERTIFICATE OF ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:
Mr. Stanley Wachuli Wanjala

REFERENCE NO:
ERC/MA/003/2014

ENTITLED:
Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya

TO BE UNDERTAKEN AT:
Ganze, Kilifi, Kenya

FOR THE PROPOSED PERIOD OF RESEARCH
HAS BEEN APPROVED BY THE ETHICS REVIEW COMMITTEE
AT ITS SITTING HELD AT PWANI UNIVERSITY, KENYA
ON THE 15TH DAY OF JANUARY 2014

CHAIRMAN

SECRETARY

LAY MEMBER

Pwani University, www.pu.ac.ke, email: kthawarani@pwaniuniversity.co.ke, tel: 0719-182288. The ERC, Giving Integrity to Research for Sustainable Development
Appendix 4: Graduate School Research Authorization

Pwani UNIVERSITY
SCHOOL OF GRADUATE STUDIES

P.O. Box 195 - 80100
KILIFI, KENYA

TEL: 234-41-7525102|3/4/6
FAX: 234-41-7522128
email: info@pwanioniversity.ac.ke
website: www.pwanioniversity.ac.ke

Ref: PU/SGS/PRAL/83/vol.1

16th January, 2014

Mr. Stanley W. Wanjala
School of Humanities and Social Sciences
PWANI UNIVERSITY

SUBJECT: RESEARCH AUTHORIZATION

Following approval of your Masters research proposal by the Ethics Review Committee on 15th January, 2014, we hereby write to formally grant authorization for you to conduct research for a Master’s thesis entitled “Determinants of Maternal Care Service Utilisation in Ganze District, Kilifi County of Kenya.”

You are advised to collect your original Certificate of Ethical Approval from the Ethics Review Committee office.

We wish you all the best as you embark on this critical stage of your Masters programme.

Yours faithfully,

[Signature]
Prof. Mleva C. Mwafate
DEAN, SCHOOL OF GRADUATE STUDIES

Cc
- Deputy Vice Chancellor (ASA)
- Dean, School of Humanities and Social Sciences
- Chairman, Social Sciences

[Stamp]
Appendix 5: Research Authorization from Department of Health

COUNTY GOVERNMENT OF KILIFI
DEPARTMENT OF HEALTH
KILIFI COUNTY HOSPITAL

Telephone (041) 7522777
Fax: (041) 7522025
Email: kdh@kamri-welcome.org
When Replying/Telephoning quote
Ref No.: ST.1/38/VOL.I/

OFFICE OF THE MEDICAL
SUPERINTENDENT
KILIFI COUNTY HOSPITAL
P. O. Box 9 - 80108
KILIFI
DATE: 31st March, 2014

Stanley Wechuli Wanjala
Pwani University
PO Box 195-80108
Kilifi County,
KENYA

Dear Mr Stanley. W. Wanjala,

RE: AUTHORIZATION TO CARRY OUT STUDY IN GANZE

The research committee of health Kilifi has received your request to carry out a study on
"Determinants of Maternal Care Service Utilization in Ganze District, Kilifi County of Kenya".

After going through the proposal, we grant you approval to proceed with your research. This
should not exceed a time period of 90 days. Please note you can always ask for an extension,
should you need it.

Upon completion of the study, you will be required to share your results with the County Health
Management Team.

Good luck!

Dr Barbara Mambo, Chairperson
Kilifi County Research Coordination Committee
KILIFI

Cc:
The Executive Secretary of Health- KILIFI COUNTY
The Director of Health Services-KILIFI COUNTY
Appendix 6: Map of Ganze District