

**AWARENESS, ATTITUDE TOWARDS AND UTILIZATION OF
MATERNITY WAITING HOME BY MOTHERS IN MERTI
SUB COUNTY, ISIOLO COUNTY.**

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**Awareness, attitude towards and utilization of maternity waiting home by
mothers in Merti Sub County, Isiolo County**

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**A thesis submitted in partial fulfillment for the degree of Master of Science in Public
Health in the Jomo Kenyatta University of Agriculture and Technology**

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DECLARATION

I hereby declare that, except for specific references which have been duly acknowledged, this thesis is the result of my own work and it has not been submitted either in part or whole for any other degree in another university.

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This thesis has been submitted for examination with our approval as University supervisors.

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DEDICATION

I dedicate this work to my husband and precious daughter, my loving parents, my two brothers and sister. I dedicate it to them for their love and support through all these years and particularly during the duration of this course.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
EMOC	Emergency obstetric care.
FGD	Focused group discussion
GOK	Government of Kenya
KDHS	Kenya Demographic and Health Survey
KEMRI	Kenya medical training institute
MDGs	Millennium Development Goals
MNMR	Maternal and neonatal mortality ratio
MOMS	Ministry of medical services
MOPH	Ministry of public health
MWH	Maternity waiting home
PNC	Postnatal Care
SBA	Skilled Birth Attendant
TBA	Traditional Birth Attendant
UNFPA	United Nations Fund For Population Agency.
WHO	World Health Organization

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DEFINITION OF TERMS

Maternal Mortality Rate

Number of maternal deaths in given time period per 100,000 women of reproductive age, or woman-years of risk exposure, in same time period

Skilled Attendance

The process by which a pregnant woman is provided with adequate care during labour, birth, and the postpartum and immediate newborn periods. The attendant must have the necessary skills and must be supported by an enabling environment at the domiciliary, primary (health center), or first referral (hospital) levels which includes adequate supplies, equipment, and infrastructure, as well as an efficient and effective system of communication and referral/transport.

Skilled Health Worker

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”

Maternal Mortality Ratio

The number of maternal deaths per 100,000 live birth.

Maternal waiting homes

A maternity waiting home is a facility that is within easy reach of a hospital or health center that provides antenatal care with skilled birth attendants and emergency obstetric care.

ABSTRACT

Despite the relatively high antenatal attendance rate, the rate of delivery in health facilities is low in Kenya. Only 43 percent of live births in the five years preceding the 2008-09 KDHS took place in a health facility. Consequently, complications of pregnancy, childbirth and puerperium are leading causes of inpatient morbidity and mortality among expectant women. The main objective of the study was to assess the knowledge, attitude and practice of women of child bearing age towards skilled delivery services in a maternity waiting home. The study was conducted in Merti Sub County, Isiolo County. It was a cross sectional mixed method study employing both qualitative and quantitative methods. Data was obtained using questionnaires, focused group discussion, checklist and in depth interview. The chi-square test of association was used in bivariate analysis to find associations between factors. The significant factors from bivariate analysis were then subjected to multivariate analysis using odds ratio. A majority, 255 (66.4%) of respondents attended the first ANC between 4-6 months and only 128 (33.4%) of them attended ANC at least four times during their pregnancy. Half of the mothers 194 (50.5%) had delivered their last child at home. Majority of those who delivered at home, 155 (79.9%) said customs was the main reason for delivering at home. Majority of the mothers 255 (66.4%) were not aware of the presence of a maternal waiting home. Most 231(61.1%) said they would use the facility, though 74 (19.3%) cited high cost of financing as reason of not using the maternal waiting home.

TBAs still play a key role in home deliveries and this study revealed that the percentage of home deliveries was 56.26%, higher than health facility delivery (43.75 %.).Accessibility of the MWH itself, risk identification process, the quality of community education, antenatal care and the quality of service at the maternity waiting home are areas that need interventions for utilization of this facility to improve.

CHAPTER ONE

INTRODUCTION

1.1 Background

The global maternal mortality ratio is unacceptably high. About 800 women die from pregnancy or childbirth related complications around the world every day. In 2013, 289 000 women died during and following pregnancy and childbirth. 99% of maternal deaths occur in developing countries. More than half of these deaths occur in Sub Saharan Africa and almost one third occur in South Asia (WHO, 2014). Globally, an estimated 42% of maternal deaths are intrapartum related, defined as deaths during birth or the first day after delivery. There were an estimated 535 900 maternal deaths worldwide in 2005 (Lawn *et al.*, 2009)

Complications linked to pregnancy and childbirth is the second cause of death for 15-19 years old girls globally. Some 11% of all births worldwide are to girls aged 15 to 19 years, and the vast majorities are in low and middle-income countries. Women in developing countries have on average many more pregnancies than women in developed countries, and their lifetime risk of death due to pregnancy is higher. The probability that a 15-year-old woman will eventually die from a maternal cause is 1 in 3700 in developed countries while 1 in 160 is in the developing countries (WHO, 2014). In Kenya, despite the high rate of antenatal attendance, the rate of delivery in a health facility is at 62 percent (2014 KDHS).

A maternity waiting home is a facility that is within easy reach of a hospital or health center that provides antenatal care with skilled birth attendants and emergency obstetric care. They may also provide women with health education about pregnancy, giving birth and infant care. It is mostly women with high-risk pregnancies or those that are living far away that are encouraged to stay in these facilities at the end of their pregnancy. The extent to which women are cared for in the homes and the help that is available to them differs from country to country. A further

difficulty is that home delivery is less expensive and that women may not be willing to leave their families on whom they depend for their care, or their farms which are their means of livelihood (Van Lonkhuijzen, Stegeman, Nyirongo & Van Roosmalen, 2003).

The World Health Organization considers maternity waiting homes (MWH) as an important element of maternity care, especially where women live far from a health facility and transport is poor. When complications of labor occur, maternity waiting homes can play an important role in reducing maternal and perinatal mortality. The effectiveness of maternity waiting homes depends on the ability to recognize and refer women at risk, and the utilization of the maternity waiting home by such women. This identification and referral is dependent on an effective system of community health services, staffed by providers who have been specifically trained in the identification and referral of high risk pregnancies (WHO, 2006).

African countries are confronted by high maternal mortality and infant mortality rates for which there is urgent need for interventions. One of the tested and proven strategies is the establishment of maternity waiting homes a practice which has been in existence for more than 100 years. Ante natal care services are also quite crucial for making risk assessments and timely referrals and the concept of maternity waiting homes has been based on the premise that it is possible to identify pregnancies likely to develop complications and need skilled obstetric care. Women need to be identified and (Eckermann and Deodato, 2008). In low resource countries even under the best of times, the delivery rate in health facilities is less than 30% with as low as 15% in other settings (Zemichael, Nyarang'o & Mufunda, 2008). There is gross unmet need for Emergency Obstetric Care (EmOC) in facilities in this region. This is as a result of a poorly functioning referral system especially at the community level including ill-equipped and inadequately staffed facilities. This is further aggravated by the paucity of skilled birth attendants in rural health facilities as a result of the ongoing staff attrition thus posing major

challenge for the provision of Emergency Obstetric (EMCOR) and Newborn services. (KDHS, 2014).

In 2007, through the assistance of the UN Population Fund a number of maternity waiting homes were set up in selected districts in the country. Whether these shelters have been able to sustain themselves would be of interest if maternal mortality is to be reduced (UNFPA, 2012).

Mater Care International and Apostolic Vicariate Diocese of Isiolo started a project to provide comprehensive rural essential obstetrics in the District of Isiolo, which includes normal care during pregnancy and delivery, and treatment of most obstetric and medical complications. It is centered around the base hospital in Isiolo which has 8 obstetrical beds, 4 intensive care beds 2 operating rooms 4 delivery rooms; a small laboratory; pharmacy; kitchen and laundry and 4 Manyattas (traditional maternity waiting homes) close to the hospital , each with 2 beds. The hospital provides treatment for most obstetrical complications and is fully equipped. The first of 6 rural parish maternity clinics with a maternal waiting home in the village of Merti with 4 beds for normal cases located some 225 km from Isiolo opened in June 2011, and is staffed by midwives. An emergency transport is provided for long distances and two motorbike ambulances for travel to the villages.

The Garissa Maternal Waiting Home in North Eastern Province, Kenya is the only such facility in an area with the country's highest maternal mortality rate, at 646 deaths per 100,000 live births. (UNFPA,2012).

Kilifi District Hospital is also among government hospitals with a similar facility. The hospital has a maternal shelter for expectant women who live far from the hospital and are almost due to deliver or for women who are likely to develop complications during delivery. This was a project of the Danish International Development Assistance (Danida) in conjunction with the Ministry of Health in 2005.

1.2 Problem Statement

Maternal mortality rate in Kenya is still high at 400 per 100,000 live births, with some regions reporting MMRs of over 1000 /100 000 live births. Neonatal mortality rate is 26 per 1,000 live births (KDHS, 2014). The infant mortality rate is 39 deaths per 1,000 live births. Currently in Kenya, neonatal mortality contributes to 60% of all infant mortality cases in Kenya.

Access to a continuum of care, including appropriate management of pregnancy, delivery, postpartum care and access to life-saving obstetric care when complications arise are crucial to safe motherhood. (WHO, 2008). Traditional birth attendants continue to play a big role in delivery, assisting with 28 percent of births. Isiolo County has a maternal mortality rate of 790 deaths per 100,000 live births, according to government statistics. It is among the top fifteen counties with high burden of maternal mortality ratio. Most of these deaths, 56% occur during delivery. (UNFPA, 2012).

The proportion of births with skilled personnel in attendance is a proxy indicator for tracking progress in achieving MDG-5. Low resource countries are confronted by high maternal mortality and infant mortality rates for which there is urgent need for interventions. One of the tested and proven strategies is the establishment of maternity waiting homes a practice which has been in existence for more than 100 years (Eckermann and Deodato, 2008).

Maternity waiting home was introduced in Merti Sub County, Isiolo County in 2011 as a strategy to mitigate against the high maternal morbidity and mortality rates as well as improve postnatal health in this region but its utilization remained very low. However, though these homes have been introduced, there is lack of documented evidence in respect to the awareness, attitude and practice of the women towards them.

1.3 Justification of the Study

Proper monitoring and evaluation of targeted projects and programs by the government and development partners require a wide range of data to track progress towards achievement of desired outcomes.

Few studies have been published to assess the role of maternity waiting homes. While anecdotal evidence indicates that maternity waiting homes are successful in reducing maternal mortality. Utilization rates and user satisfaction have also been insufficiently documented.

The purpose of this study was to determine perception of the community and to assess the knowledge of women of child bearing age to this service with the ultimate aim of improving maternal health particularly in Merti Sub County because of the high maternal deaths originating from the area. The maternity waiting homes acts as a proxy for facility based births, hence the awareness of its existence is crucial to its utilization.

In other countries where such home has been established for example in Cuba the results of maternity homes have been empirically rated as positive. On the other hand, they have undoubtedly helped to raise the rate of institutional delivery in Cuba, which has attained a level of 98% of all births since 1973. A continuous audit of all cases of maternal death showed that between 1960 and 1984 maternal deaths from hemorrhage decreased dramatically from 32 per 100,000 births to 2 per 100,000 births (Cardoso, 1986).

1.4 Research Questions

1. What is the awareness of mothers in Merti Sub County about the MWH?
2. What are the services experienced by mothers at the MWH in Merti Sub County?
3. What are the practices experienced by the mothers at the MWH in Merti Sub County?
4. What is the perception/attitude of the mothers about the MWH in Merti Sub County?
5. What are the ANC practices by the mothers in Merti Sub County?

1.5 Objectives

1.5.1 General Objective

To assess awareness, attitude towards and utilization of maternity waiting home by mothers in Merti Sub County, Isiolo County.

1.5.2 Specific Objectives

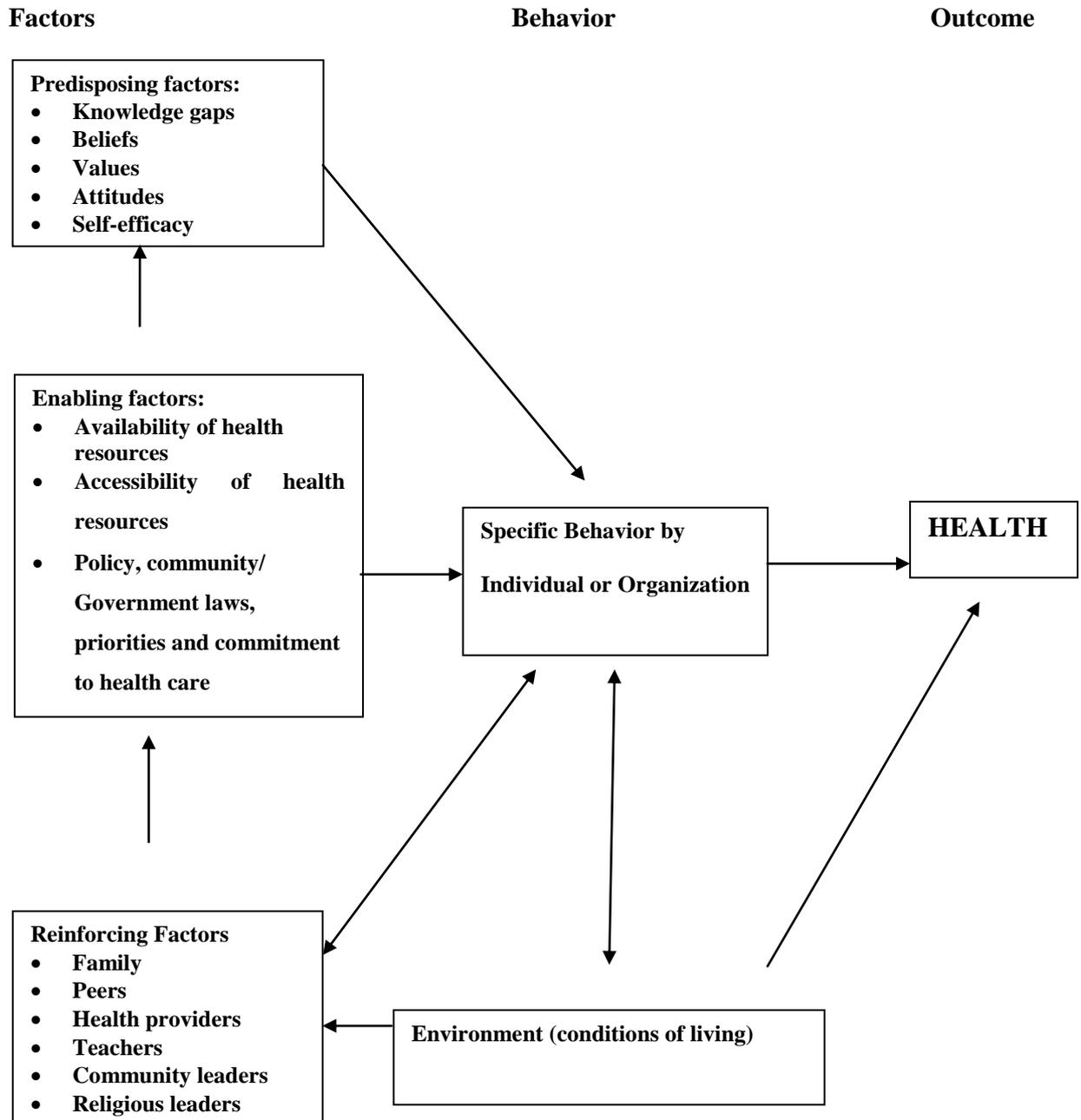
- 1.5.2.1 To determine awareness of mothers of child bearing age of the maternity waiting home in Merti Sub County, Isiolo County.
- 1.5.2.2 To determine the services experienced by the mothers at the maternity waiting home in Merti Sub County, Isiolo County.
- 1.5.2.3 To explore the practices of health care workers at the maternity waiting home in Merti Sub County, Isiolo County.
- 1.5.2.4 To establish community perception on the maternity waiting homes in Merti Sub County, Isiolo County.
- 1.5.2.5 To determine the ANC practices among the mothers in Merti Sub County, Isiolo County.

1.6 Theoretical Framework

Figure.1: THEORETICAL FRAMEWORK

The PRECEDE – PROCEED theoretical model postulated by Green and Kreuter (1999) outlines multiple determinants of health and behavior. These are illustrated in Figure 1 below

Precede – Proceed Model



Adapted from the PRECEDE-PROCEED model outlining the theory of causal relationship and the order of causation for the 3 sets of factors influencing behavior (Green and Kreuter, 1999)

CHAPTER TWO

LITERATURE REVIEW

Facilities called maternity waiting homes by the WHO are also described in literature as maternity villages, maternity waiting shelters or dormitories, antenatal villages, antenatal shelters or hostels. Despite this variety of names, relatively few data are known about the functioning of maternity waiting homes. The African studies on MWHs stem from Ethiopia, Zimbabwe and Zambia and show better pregnancy outcomes among women making use of these homes (Millard et al. 1991; Poovan et al. 1990; Chandramohan et al. 1994; Tumwine and Dungare 1996; van Lonkhuijzen et al. 2003; Spaans et al. 1998).

The maternity waiting home was originally intended to be used by women with high risk pregnancies whose homes are in remote and inaccessible rural areas. This original concept is adapted in various ways all over the world. In some studies women with low risk pregnancies also utilize the waiting homes in areas where there is poor skilled delivery services.. One of the important factors on which the success of a maternity waiting home is based is a properly functioning referral system. All women with high risk pregnancies should be referred. (WHO 2006).

2.1 History of Maternity Waiting Homes around the World

The idea of homes for pregnant women with obstetric and social problems is not new. For many centuries, voluntary organizations in Europe have provided shelters for single mothers in an effort to reduce abortion and infanticide. Since the beginning of the 20th century, waiting homes have existed in Northern Europe, Canada and the United States to serve women in remote geographic areas with few obstetric facilities (Aday & Anderson, 1974). At present in European countries with remote communities (e.g. Finland) nurses' dormitories have been converted to "patient hotels" for the same purpose.

In Africa one of the early experiments with maternity waiting homes (known as "Maternity Villages") was in Eastern Nigeria in the 1950s (Poovan, Kifle, & Kwast, 1990). The rural nature of the population meant that a trip to the hospital during labor often entailed a journey of many miles, usually on foot. In maternity waiting areas that had been developed in small buildings adjacent to a high-risk women were housed for the last 2-3 weeks of pregnancy. Such homes helped to reduce maternal mortality in hospitals from ten to less than one per 1000 deliveries and the stillbirth rate from 116 to 20 per 1000 in ItukMbang, Eastern Nigeria (Lawson and Stewart, 1968). In Uganda where similar houses were instituted in the 1960s recorded maternal deaths in one remote area fell by half once such a maternity waiting area was instituted (Minkler, 1972). Cuba built its first home in 1962. By 1984 there were 85 such homes in the country and 99% of babies were delivered in hospital. Maternal mortality fell from 118 to 31 per 100 000 live births. Today various forms of maternity waiting homes have been documented in 18 countries.

Maternity waiting homes have demonstrated such benefits as an increased proportion of facility-based deliveries (Cardoso, 1986), improved maternal health (Cardoso, 1986; Knowles, 1988), a lower risk of perinatal death (Chandramohan, Cutts, & Chandra, 1995), decreased incidence of obstructed labor (Chandramohan, Cutts, & Millard, 1994), improved access to essential and emergency obstetric care (Spaans, Van Roosmalen & Van Wiechen., 1998), and the potential to decrease rates of stillbirths (Bhutta et al., 2009; Chandramohan et al., 1995; Lee et al., 2009). Systematic reviews have concluded that MWHs have proven to be effective, but the evidence is limited because of a lack of properly designed intervention studies (van Lonkhuijzen, Stekelenburg & Van Roosmalen, 2012).

There are also recognized barriers to accessing healthcare within developing countries that apply to MWHs. These include such variables as cost, location, lack of knowledge about the MWH,

and cultural barriers. The cost associated with staying in a home can be prohibitive, and for all the risk, home deliveries remain the least expensive birthing option (van Lonkhuijzen, Stekelenburg & Van Roosmalen, 2012). Indirect and direct costs pose significant and often insurmountable challenges to many would-be service users.

In Ghana, a MWH built in an abandoned hospital suffered from very low use (Wilson et al., 1997). The low use of the MWH facility was mainly attributed to its deserted surroundings and distance from the hospital (Wilson et al., 1997). Meanwhile, a MWH in Timor-Leste failed to improve access to facility-based deliveries for women who lived farther from the facility in more remote locations (Wild, Barclay, Kelly & Martins, 2012). In rural or isolated areas, women and communities may be unaware of a home's existence or its uses. In these contexts, the most expedient manner in which to instill knowledge of the home and its services can be through social networks.

A study of a failed intervention in Kenya revealed the majority of women surveyed stated they would need their husband's approval to use the MWH (Mramba, Nassir, Ondieki & Kimanga, 2010), indicating the importance of family and community support, regardless of whether the intervention was initiated by the community or an external organization. Homes act as a proxy for facility-based births, yet traditional birthing practices may mean that facility-based births are unacceptable due to separation from family and lack of privacy.

The largest study to date, conducted in Ethiopia, cited that acceptance and support by the local community is vital and attributed the success of their MWH to community links (Kelly et al., 2010). Incorporating women's needs for comfort by integrating cultural practices helps to negotiate the space between these systems while maintaining positive outcomes. Traditional birth attendants encouraging and referring a woman to MWHs was cited in an Eritrean study as an influential factor in use (Andemichael, Haile, Kosia, & Mufunda, 2010)

2.2 Purpose of Maternity Waiting Home

The purpose of Maternity Waiting Home (MWH) is to provide a setting where high-risk women can be accommodated during the final weeks of pregnancy near a hospital with Comprehensive Emergency Obstetric and Newborn care facilities. Some MWHs have expanded their purpose to include not only decreased maternal mortality but also improved maternal and neonatal outcomes (WHO, 1996).

Many consider MWH to be the key element to 'bridge the geographical gap' in obstetric care between rural areas, with poor access to facilities and urban areas where the services are available. In these maternal waiting homes additional emphasis is put on education and counseling regarding pregnancy, delivery and care of the newborn infant and family (Figa, 1996).

Some of these homes were launched as a result of government initiatives (e.g. Mongolia, Cuba) and others created by medical/academic and community groups (e.g. Colombia, Indonesia).. In addition, the lack of formal evaluation of existing maternity waiting homes jeopardizes the future of this alternative solution to problems of access to emergency obstetric care for high-risk pregnant women. Although anecdotal accounts provide a favorable impression, operations research is needed to determine the impact of maternity waiting homes on maternal mortality. Women's perceptions of maternity waiting homes should also be explored before final conclusions are drawn (WHO, 1996).

2.3 Factors in Success and Utilization of a MWH

In Zimbabwe, a cluster survey (including 235 respondents) examined the use of maternal care services and found that nearly all (97%) women attended antenatal care during their last pregnancy at least once, and 66% gave birth in hospital. The use of a MWH increased the likelihood of hospital delivery nearly six-fold. Only one-third of all respondents, however, did

use the MWH. Complaints that were mentioned about the MWHs were that the houses were too small and crowded, the toilets needed improvement and there was a shortage of water and firewood (Van den Heuvel, DeMey, Buddingh & Bots, 1999).

A survey done in the same district in Zimbabwe in 1991, two thirds of the women stated that they would use a MWH if provided. The other third mentioned the absence of food provision and no help with cooking, the necessity to collect own water and firewood, poor hygiene and lack of transport for referrals, as important factors for their refusal to use a MWH (Nhindiri, Munjanja, Zhanda, Lindmark & Nystrom, 1996).

In a rural district in Ghana, 83% of women attended antenatal clinics at least once and 90% of respondents were willing to stay in a MWH when advised to do so (Martey, Djan, Twum, Browne & Opuku, 1995). In another district in Ghana the introduction of a MWH failed. This MWH was located in a refurbished ward in an old hospital. In the first year, 25 women were referred and only one spent one night there. After the first year, attitudes and barriers were assessed, through focus group discussions with the people involved. There appeared to be strong financial barriers: home delivery is less expensive. Costs of living are higher in a MWH. In addition, women could not take care of their families and their farms. The location of the MWH was also considered problematic because it was still some way from the hospital and arranging transport at night was difficult.

2.4 The Effect of the MWH

The effectiveness of maternity waiting Homes has been described in general terms. Cuba has improved its national health system since 1961. Maternal waiting homes were part of an extensive project to improve the care for women giving birth. The first MWH opened in 1962, and by 1984 there were 85 facilities. In the same period, the proportion of deliveries in health institutions increased from 63% to 99%. A continuous audit of all cases of maternal death

showed that between 1960 and 1984 maternal deaths from hemorrhage decreased dramatically from 32 per 100,000 births to 2 per 100,000 births (Cardoso, 1986).

In Honduras, the introduction of MWH was part of a strategy to improve maternal health. It consisted of improving the referral of obstetric emergencies through the training of traditional birth attendants. Secondly, it aimed to identify women with high-risk.

2.4.1 Definition of Risk and Selection of Women

The concept of maternity waiting homes has been based on the premise that it is possible to identify pregnancies likely to develop complications and need skilled obstetric care. With experience, however, it has become clear that the "risk approach" may not be able to deal adequately with the issue of identification. Apparent risk factors; For example, a study in the United States which examined the rate of serious complications found that in spite of intense scrutiny to screen out all possible high risk cases, nonetheless, nearly 8% of "low risk women" developed serious complications. Moreover, half of the women who did, in fact, have complications had no medical or obstetric risk factors (WHO, 1996)

Many countries using maternity waiting homes have progressed from medical definitions of what constitutes high risk pregnancy, towards a broader concept based on a combination of distance, Socioeconomic and medical risk factors. Gradually in some instances (e.g. Cuba) maternity waiting homes have become a proxy for institutional delivery (Rooks *et al.*, 1989).

2.4.2 Identification and Referral of Women

The effectiveness of maternity waiting homes depends on the ability to recognize and refer women at risk, and the utilization of the maternity waiting home by such women. This identification and referral is dependent on an effective system of community health services, staffed by providers who have been specifically trained in the identification and referral of high risk pregnancies. As mentioned previously, an important role of management for the maternity

waiting home will be working in cooperation with these community health services. (Faundes, Rosenfield & Pinnoti 1988)

A study conducted in Zimbabwe indicates that the effectiveness of maternity waiting homes in reducing maternal mortality and morbidity depends on the validity of the criteria used to identify women at risk for complications; the effectiveness of screening and referral by health workers; and the acceptance and use of maternity waiting homes by the women who are identified as being high obstetric risk. 4488 women constituted the study population, which comprised 1573 women who were maternity waiting home users (MWH users) and 2915 who stayed at home and self-referred or were referred to the hospital by a traditional midwife during labour (MWH non-users) (Millard *et al.*, 1991). The risks of assisted delivery and the risks of obstructed labor, ruptured uterus and maternal death were compared between the maternity waiting homes users and non-users (Chandramohan *et al.*, 1994).

2.4.3 Skilled Obstetric Services

A crucial element of an effective maternity waiting home is its access to qualified obstetric Services waiting homes have been set up near hospitals with no facilities for operative deliveries, or near district or teaching hospitals with operative facilities. In Cuba and in Colombia a rural maternity waiting home are set up near primary level hospitals, but the access to the district or to the teaching hospital by ambulance is easy and rapid. In other cases, especially in Africa, maternity waiting homes are near a district or teaching hospital, where deliveries (both normal and complicated) take place (Rooks *et al.*, 1989).

2.4.4 Community and Cultural Support

The final crucial element to a successful maternity waiting home is the acceptance and participation of community and cultural institutions. Maternity waiting homes are the kind of health service that is best organized by communities using their local resources. Even in situations such as Cuba and Mongolia, where the state operates the maternity waiting homes,

communities where local support was greater have been able to sustain their activities despite the reduction of state support. Credibility of the maternity waiting home is a critical factor because women and their families may not be easily convinced to move away from home before their expected delivery date. "Word of mouth" has in fact, been shown to be the best way to increase the acceptability and use of health services. (WHO, 1996).

A study of four maternity waiting homes in Tanzania indicates that user satisfaction and utilization is highly dependent upon the services that are provided. For example, in three of the maternity waiting homes food was provided and prepared by the women themselves. They stated that their expenditures on food were too high, and in the one case where food was provided, the women complained that this food was unacceptable, both in terms of quantity and quality. In all four homes management was reported to be poor (Winful, 1994).

2.5 Situation Analysis of Maternal and Neonatal Health

Maternal mortality levels in Kenya have remained unacceptably high at 400 per 100,000 live births, with some regions reporting MMRs of over 1000 /100 000 live births. The neonatal mortality rate is 26 per 1,000 live births (KDHS, 2014). Currently in Kenya, neonatal mortality contributes to 60% of all infant mortality cases in Kenya.

Overall, 62 percent of births in Kenya are delivered under the supervision of a skilled birth attendant, usually a nurse or midwife. Traditional birth attendants continue to play a vital role in delivery, assisting with 28 percent of births (the same percentage as are assisted by nurses and midwives). The proportion of births assisted by medically trained personnel has increased tremendously — from 42 percent in 2008/9 to 62 percent in the 2014 survey (KDHS, 2014).

2.6 Status of Interventions to Reduce Maternal Morbidity and Mortality

Approximately 9 out of 10 (92%) of all pregnant women in Kenya attend antenatal care at least once from a health care provider and 57.6 % make four or more ANC visits. In Isiolo county ANC attendance is also high at 96% percent with 50.2% making at least four ANC visits.

Among women who deliver outside the health facility, a vast majority (6 out of 10) do not receive postnatal care. 51% attend postnatal care within two days of delivery (KDHS 2014). This is despite the fact that majority of maternal deaths occur during the postpartum period.

2.7 Utilization of Health Services:

The Kenya Service Provision Assessment 2010 indicated that some 74 percent of all facilities (excluding stand-alone VCT facilities) offer ANC (compared with 79 percent in 2004), 59 percent offer PNC compared with 35 percent in 2004), and 69 percent provide TT vaccine (compared with 84 percent in 2004). Fifty-six percent of facilities offer all three services (compared with 33 percent in 2004).

Thirty percent of facilities provide services for normal deliveries, a decline from 38 percent in 2004. Only 5 percent of facilities provide caesarean section services, similar to 7 percent in 2004. Half of hospitals (a decline from 76 percent in 2004) provide the service. Overall, half ((49 percent) of all facilities have transportation support for maternity emergencies (KSPA, 2004; KSPA, 2010)

CHAPTER THREE

METHODOLOGY

3.1 Study Site

The study was conducted in Merti Sub county, one of the three sub counties of Isiolo County, the other being Garbatula and Isiolo. The Sub County has four divisions namely Merti North, Merti South, Cherab and Chari. The study was conducted in each of the four divisions. According to the 2009 Census, the Sub County has a population of about 20,000 people, with an average household size of 5. Majority of the residents are of the Borana Community whose main economic activity is pastoralism.

The district has six health facilities and one dispensary which have a maternal wing and a maternity waiting home which is managed by the Catholic Church.

3.2 Study Design

This study applied a cross-sectional study design.

3.3 Study Population

The target population for this study was the women of reproductive age in Merti Sub County. A total of 10,133.

3.3.1 Inclusion criteria

Criteria for inclusion of subjects for general survey:

- I. Women of child bearing age
- II. The women who had given birth at least once.
- III. Women under the age of 18 who are willing to participate in the study and whose husbands signed the consent form.

3.3.2. Criteria for exclusion of subjects:

- i. Women of child bearing age who may have been unable to respond due to illness.
- ii. Women who did not consent to participate in the study
- iii. Under age women whose husbands were not around to consent to the study.

Criteria for inclusion for Key Informant Interview (KII)

- i. Health Workers attached to the health facilities in Merti Sub county
- ii. Facility Based Community Health Workers in Merti Sub county

Criteria for inclusion for Focus Group Discussion (FGD)

- i. Women of child bearing age who had already given birth to a first child.

3.4 Sampling frame

The sampling frame consisted of the Population and Census Enumeration Areas (EAs) used in the 2009 Population and Housing Census in Kenya conducted by National Bureau of Statistics.

A list of all the villages and households in the study area was obtained from the County Commissioners office. Villages were used as primary sampling units (PSU) in the study area. In total 25 PSUs were randomly selected from a total of 61 villages. Before conducting the main study in the PSUs, a household recording was carried out. This was used as the sampling frame for the identification of the household in the second stage. In the next stage 16 households were randomly selected within 1 hour walking distance from each facility.

A list of all the facility in charges was obtained for the Key informant guide. Notices for focus group discussions were communicated to women and those who were willing were recruited.

3.5 Sampling and sample size determination

Mugenda and Mugenda (1999) argues that it is not necessary to study the entire population in order to be accurate and reliable in describing a population characteristic. In most cases studying the sample is sufficient. If the sample is adequate, it will have the same characteristics as the population (Zikmund, 2003).

3.5.1 Sample Size Calculation for the General survey.

The sample size for the study was derived using Fisher's method (Fisher *et al*, 1991) of sample size determination with a 95% confidence interval and a sampling error of 5%.

$$n = \frac{Z_{\alpha/2}^2 * p * (1-p)}{d^2}$$

Where:

n= is the desired sample size

p= Assumed prevalence of utilization of MWH among women (15- 49 yrs.) in Merti Sub county =50%

Z $\alpha/2$ = is the corresponding value from the normal distribution for the desired confidence (in our case, 95% confidence) = 1.96

d= is absolute precision. =0.05

$$n = \frac{1.96 \times 0.5 (0.5)}{0.05^2} = 384 \text{ people.}$$

3.5.2 Sample Size for the Key Informant Interview and Focus Group Discussion

For the focus group discussions, every sampled cluster had one focus group discussion. On the key informant interview, only the facilities which were within the sampled clusters were

required to have the nurse-in-charge interviewed. Thus based on the above, the numbers of focus group discussions were equivalent to the number of clusters which were sampled for the general survey. On the other hand, the nurse-in-charges who were interviewed corresponded to the number of facilities in the sampled clusters.

3.5.3 Sampling procedure

A two stage sampling methodology was employed for the survey. The primary sampling unit (PSU) referred to as a cluster in this survey was a village. In the first stage 25 clusters were randomly selected based on presence of a facility from sampling frame of 61 clusters (census enumeration areas) which represented all the villages in Merti Sub County. Probability proportional to size (PPS) was applied for the entire survey with population data projections obtained from Kenya National Bureau of Statistics. The number of villages selected was determined based on population weights from the 2009 Kenya Population and Housing Census which detailed the number of women and men per household in each locality and presence of a facility in the village.

In the second stage of sampling 16 households were selected using simple random samplings from each village, in order to achieve the required sample size of 384 women. Out of the targeted 400 women, 384 participated in the study.

3.5.4 Sampling Technique for the FGD and KII

For both cases, that is, the FGDs and KIIs, purposive sampling was applied to select the respondents. In total there were 25 FGDs which were conducted and this corresponded to the total number of clusters sampled. In addition, every FGD had a maximum of 12 participants and a minimum of 8 participants. The participants were purposively selected from the villages and they fulfilled the inclusion criteria for the FGD. The FGDs were facilitated by the trained research assistants using FGD guide (Appendix 7). There were two research assistants who are

registered nurses per group where one moderated the discussions and the other took notes. Soon after the discussion, the research assistant back translated the responses from Borana to English. The FGDs were conducted at the village level.

On the KII, the participants who were the nurses-in-charge were selected purposively being the ones managing the facility and were equivalent to the number of facilities within the 25 clusters that were selected. The KIIs were facilitated by the researcher using a KII guide (Appendix 6) and the responses recorded in note books. The discussions were also audio-taped using a voice recorder.

In addition to KII, checklist (Appendix 9) was also used to determine the services offered at the facility.

3.6 Data Collection

Both quantitative data and qualitative data were collected. The quantitative data were collected using a semi structured questionnaire, while the qualitative data was collected through key informants interviews (KIIs) and focus group discussions (FGDs) which gave more insight on knowledge and attitude of women towards utilization of maternal health services. The questionnaire was used to collect demographic information from the selected respondents. The KIIs was conducted with the health care personnel while the FGDs were conducted with the mothers from the sampled clusters. FGDs and KIIs provided an environment to give in-depth and nuanced information on women access knowledge on maternity waiting home, the services offered at these homes and the general perception of the community toward these homes. Both the FGDs and the general survey were conducted at village level. Each of the 25 FGDs had 8 -12 participants who were all women who had at-least given birth. Women were mobilized for FGD within the villages and the general survey conducted at household level.

FGDs were conducted by facilitators in the Borana language. The KIIs was conducted at the facilities.

3.6.1 Training and Pretesting of tools

Training for the data was conducted in two parts, one day training for the mapping and listing and two days training for the main survey. Training covered interviewing technique and the contents of the questionnaires, obtaining consent, brief explanation of maternity waiting home and mock interviews between trainees to gain practice in asking questions. The household listing was carried out by five teams each comprising 3 persons to do the listing.

Before administration of the tools the questionnaire was interrogated for content and comprehensiveness by researchers. Two samples comprising 25 respondents were collected from two different areas five days apart. The results were then reviewed for any variations in the data captured.

3.6.2 Administration of tools

The questionnaires were administered specifically to the women selected using the above inclusion/exclusion criteria. 5 teams each with 3 members collected the data from 5 clusters each day.

3.7 Data Management and Analysis

3.7.1 Data Management

The quantitative data from the field was coded and double entered into a computer database designed using CSPro application. Files Back-up was regularly done to avoid any loss or tampering. Data cleaning and validation was performed in order to achieve a clean dataset that was exported into a Statistical Package format (SPSS) for analysis. All the questionnaires were stored in a lockable drawer for confidentiality.

3.7.2 Data Analysis

3.7.2.1 Quantitative data

Quantitative Data Analysis was conducted using SPSS version 20.0. Exploratory data techniques were used at the initial stage of analysis to uncover the structure of data and identify outliers or unusual entered values. Various descriptive statistics measures were also determined including proportions and measures of central tendency such as mean, standard deviation (SD), median and ranges for continuous variables. Further, inferential statistics was applied to analyse the data. These include Pearson's Chi-square and Fisher Exact Tests that were used to test for the strength of association between categorical variables. The threshold for statistical significance was set at $p < 0.05$.

3.7.2.2 Qualitative Data:

Qualitative data was summarized into themes which were deduced from the Key Informants Interviews and the Focus Group Discussion. This was done by identifying themes or patterns which emerged from the KIIs and FGDs and organizing them into coherent categories that summarized and brought meaning to the texts. The qualitative information was used to complement the results of the quantitative data.

3.8 Ethical Considerations

The study was undertaken after obtaining approval from both the Scientific Steering Committee (SSC) of KEMRI (No.2527) where this work was done and from the National Ethical Review Committee (ERC) which grants approval for research studies involving human subjects (Appendix 11). The study was well explained to all the participants. A written informed consent was sought from the respondents before participation in the study. The respondents were informed of their right to opt out at any stage without any fear of retribution.

Anonymity and confidentiality was ensured during data collection, storage and analysis. The research team did not discuss information relating to the study outside the objectives of the study. Names of clients and providers did not appear on any of the data-collection instruments, databases, or reports. Rather, questionnaires were assigned unique identification numbers by the research team. Data was kept under lock-and-key, only accessible to the members of the research team and other users within the project. All data collected was used for the purposes of the assessment only. Only survey organizers and the Committee that oversees the ethical aspects of this study viewed the data. The responses provided were kept strictly confidential and were not shown to other persons. Participation in this study or refusal to participate did not affect ability to access health services or any other service. The interview questionnaires were designed to take a maximum of 30 minutes so as not to take too much time with the informants. The participants were informed about the duration of the interview before requesting for their informed consent.

3.9 Limitation to the study.

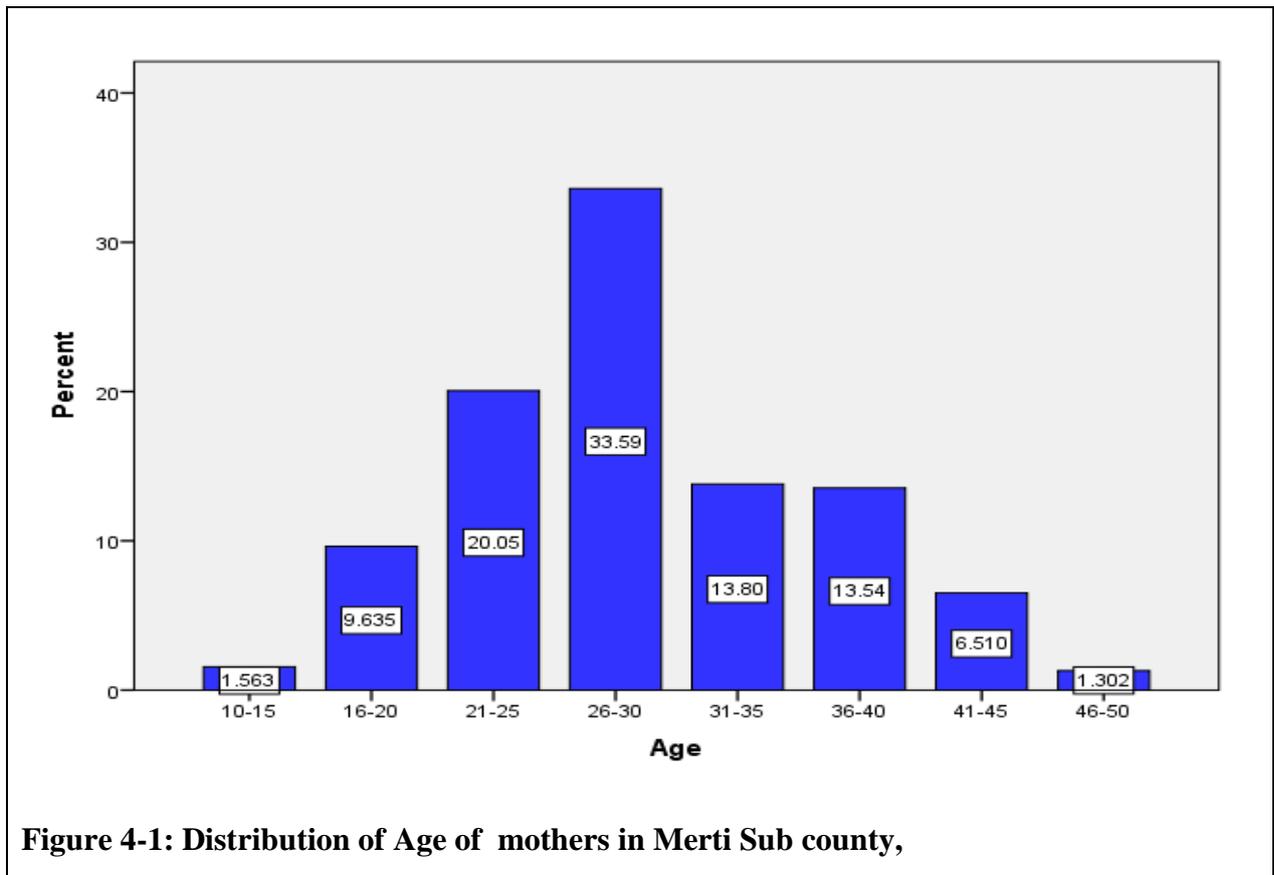
World Health Organization considers maternity waiting homes (MWH) as an essential element of maternity care especially where women live far from a health facility and transport is poor and often impossible when complications of labor occur, maternity waiting homes can play an important role in reducing maternal and perinatal mortality. However, the findings of this study may not be applicable to all regions in Kenya as the concept has been introduced to address challenges experienced by the people living in the northern arid lands where access to essential services is more limited, with poor road infrastructure and paucity of skilled birth attendants in rural health facilities

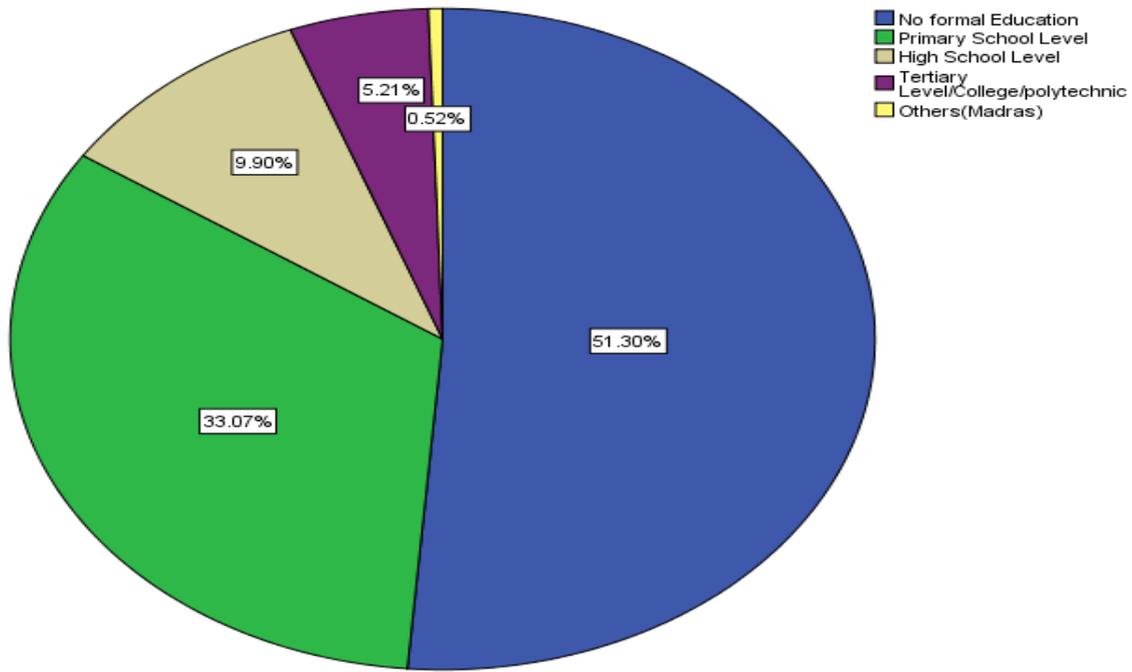
CHAPTER FOUR

RESULTS

4.1 Socio demographic characteristics

A total of 384 participants were interviewed. , The highest proportion of the respondents, 129 (33.6 %.), were aged between 26 – 30 years (Figure 4.1). About half of the respondents, 197 (51.3%), had no formal education while 33.1% had attained primary school level (Figure 4.2).Majority 319 (83.07%) of the Mothers in Merti Sub county were Housewives (Figure 4.3). Nearly all, 374 (97.4%), of the respondents were born in Isiolo. Almost half, 187 (48.7%), of the respondents had lived in Merti for 21-30 years. Most, 351 (91.4%), of the respondents were Muslims. Majority, 308 (80.2%), of the mothers were in a monogamous type of marriage. Almost two thirds, 243 (63.3%), of their husbands were pastoralists. (Table 4.1)





Figure

4-2: Highest education level of the mothers in Merti Sub county

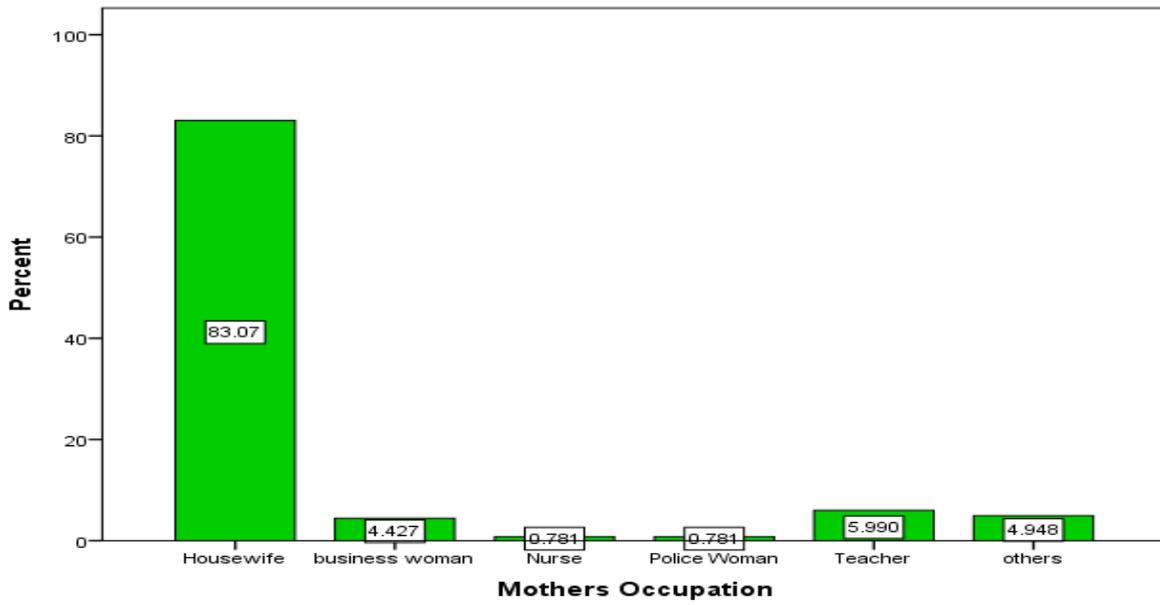


Figure 4-3: Occupation of the Mothers in Merti Sub county

Table 4-1: Socio-demographic characteristics of Mothers in Merti Sub County

Variable	Frequency	Percentage %
Place of Birth		
Isiolo	374	97.4
Marsabit	5	1.3
Others (Garissa, Mandera)	5	1.3
Period lived in Merti (years)		
1-10	7	1.8
11-20	71	18.5
21-30	187	48.7
31-40	95	24.7
41-50	24	6.3
Religion		
Christian	33	8.6
Islam	351	91.4
Marital status		
Single	11	2.9
Married Monogamous	308	80.2
Married Polygamous	36	9.4
Divorced	15	3.9
Separated	7	1.8
Widowed	7	1.8
Husband occupation		
Pastoralist	243	63.3
Businessman	39	10.2
Teacher	21	5.5
Nurse	2	.5
Others (police man, civil servant)	79	20.6

4.2 History of previous pregnancy

The study collected details pertaining history of previous pregnancies and the outcomes presented as indicated in Fig 4.4, Table 4.2 and Table 4.3. Two thirds, 254 (66.2%), of the mothers got their first pregnancy between 16-20 years (Figure 4.4). More than half, 201 (52.3%), of the mothers given birth 1-3 times. Majority, 315 (82%), of the mothers had last child aged 1-3 years. Nearly all, 362 (94.3%), of the mothers consulted a nurse during last pregnancy. Most, 255 (66.4%), of the mothers received first ANC services between 4-6 months of their pregnancy. Only 128 (33.4%) of the mothers received ANC services 4 times during their pregnancy. Majority, 336 (87.5%), of the mothers were not charged any fee for ANC services. Most, 330 (85.7%), of the mothers were advised to deliver in a hospital facility. About three quarters, 275 (71.6 %), of the mothers were told where to go in case of complications.

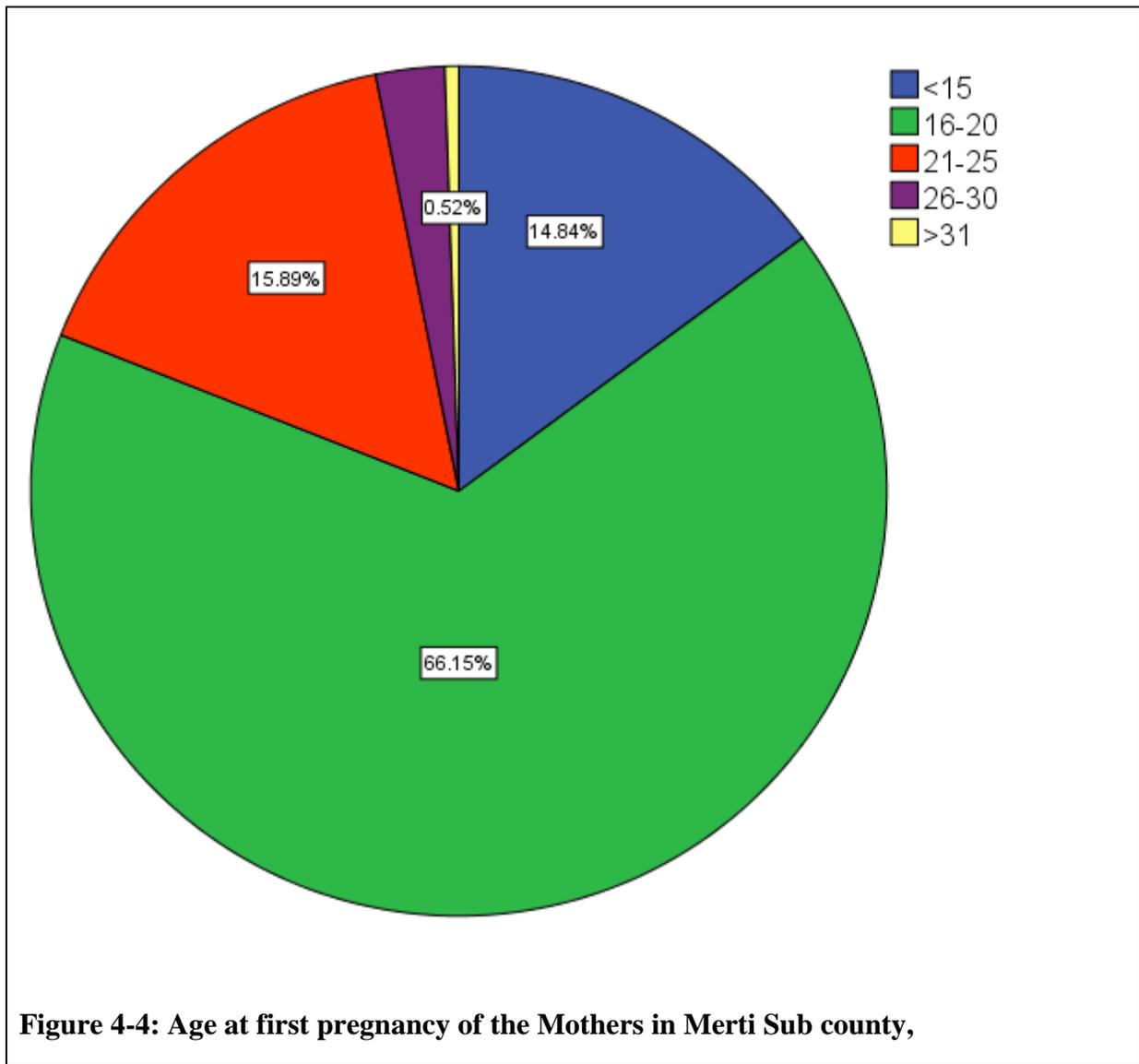


Table 4 -2: History of birth and pregnancy among Mothers in Merti Sub county,

Variable	Frequency	Percentage %
No of Births		
1-3	201	52.3
4-6	114	29.7
7-9	64	16.7
>10	5	1.3
Age of last child		
1-3yrs	315	82.0
4-6yrs	50	13.0
7-9yrs	11	2.9
>10yrs	8	2.1
Whom seen during last pregnancy		
Doctor	4	1.0
Nurse	362	94.3
Midwife	12	3.1
Other (TBA, Health attendants)	6	1.6
Stage of pregnancy during 1stANC		
0-3months	49	12.8
4-6 months	255	66.4
7-9 Months	70	18.2
Don't Know	10	2.6
No. of times attended ANC during pregnancy		
1	20	5.2
2	69	18.0
3	89	23.2
4	128	33.4
above 4	78	21
Amount Charged for ANC services during pregnancy?		
No charges	336	87.5
100 Kshs	2	0.5
200 Kshs	35	9.1
>500 Kshs	11	2.9
Where advised to deliver		
HF?	330	85.9
TBA	1	0.3
Home	41	10.7
None	12	3.1

Table 4-2: History of previous pregnancy of Mothers in Merti, Sub County Cont'

Variable	Frequency	Percentage %
Advised where to go in case of pregnancy related complication		
yes	275	71.6
No	109	28.4
Advised by whom.		
Nurse	196	78.2
Doctor	13	3.6
CHW	58	15.9
Other Source(Fellow women)	8	2.3

4.3 Delivery of the latest child

More than half, 216 (56.2%), of the mothers in Merti Sub county had delivered their latest child at home (Figure 4.5). Majority, 311 (81%), of the mothers did not pay any fee for the delivery services. Most, 340 (88.5%), of the mothers did not have any problem getting to the health facility. Among those who had problems, 26 (59.1%), lack of transport was the major problem experienced in getting to the health facility. Less than one third, 112 (29.2%), of the mothers accessed place of delivery through walking. More than two thirds, 267 (69.5%), of the mothers took 0-30 minutes to reach the place of delivery. Most, 264 (68.8%), of the mothers made their own decision on the place of delivery. For those who delivered at home, 155(79.9%) customary practice was the major reason of delivering at home (Table 4.3).

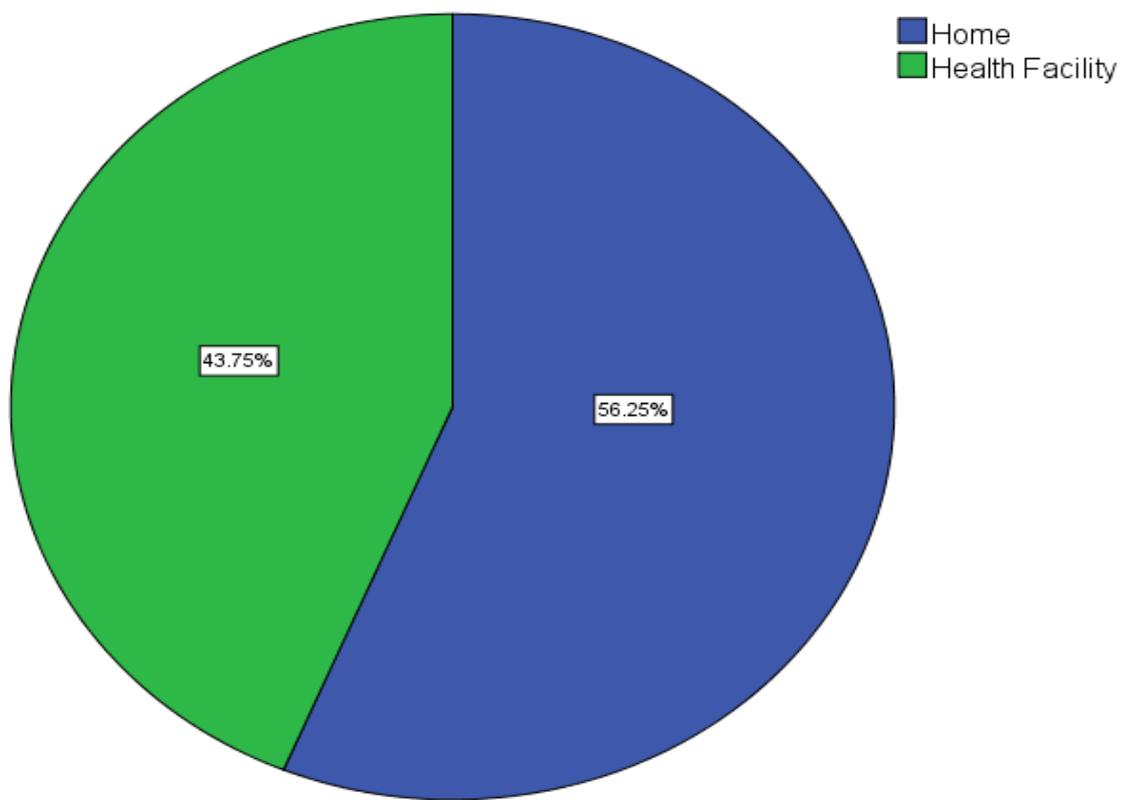


Figure 4-5: Place of delivery of the latest child of Mothers in Merti Sub county,

Table 4-3: Delivery of the latest child responses among Mothers in Merti Sub County

Variable	Frequency	Percentage %
Amount paid for delivery (KES)		
Cash payment	33	8.6
No payment	311	81.6
Payment in kind	40	10.4
Problem getting to health facility		
yes	44	11.5
No	340	88.5
If yes, what was the problem		
lack of transport means	26	59.1
lack of money	11	25
others	7	15.9
Mode of Access to the place of delivery (Not applicable to those who delivered at home)		
Walking	112	59.1
motorbike	40	21.1
Personal Car	14	7.4
Taxi	8	4.2
Others	16	8.4
Time taken from home to place of delivery		
0-30mins	267	69.5
31-60mins	77	20.1
61-90mins	11	2.9
91-120mins	18	4.7
121-150mins	2	0.5
>150mins	9	2.3
Who decided on place of delivery		
Self	264	68.8
Husband	113	29.4
Mother	7	1.8
If delivered at home main reason		
Customs/culture	155	79.9
Ignorance	30	15.5
Finance	9	4.6

4.4 Awareness and willingness to use maternal waiting home

Two thirds, 255 (66.4%), of the mothers were not aware of the presence of the maternal waiting home (Figure 4.6). For those who were aware, 129 (33.6%), majority, 88 (68.2%), had learnt about the maternal waiting home through either community health workers or nurses. Most, 234 (61.1%), of the mothers said that they would use maternal waiting home if they were to give birth (Figure 4.7). Of those who would use the facility, 136 (35.4 %) said they would use the facility because of safety and skilled labor while 74 (19.3%) cited high cost/finance as reason of not using maternal waiting home (Table 4.4).

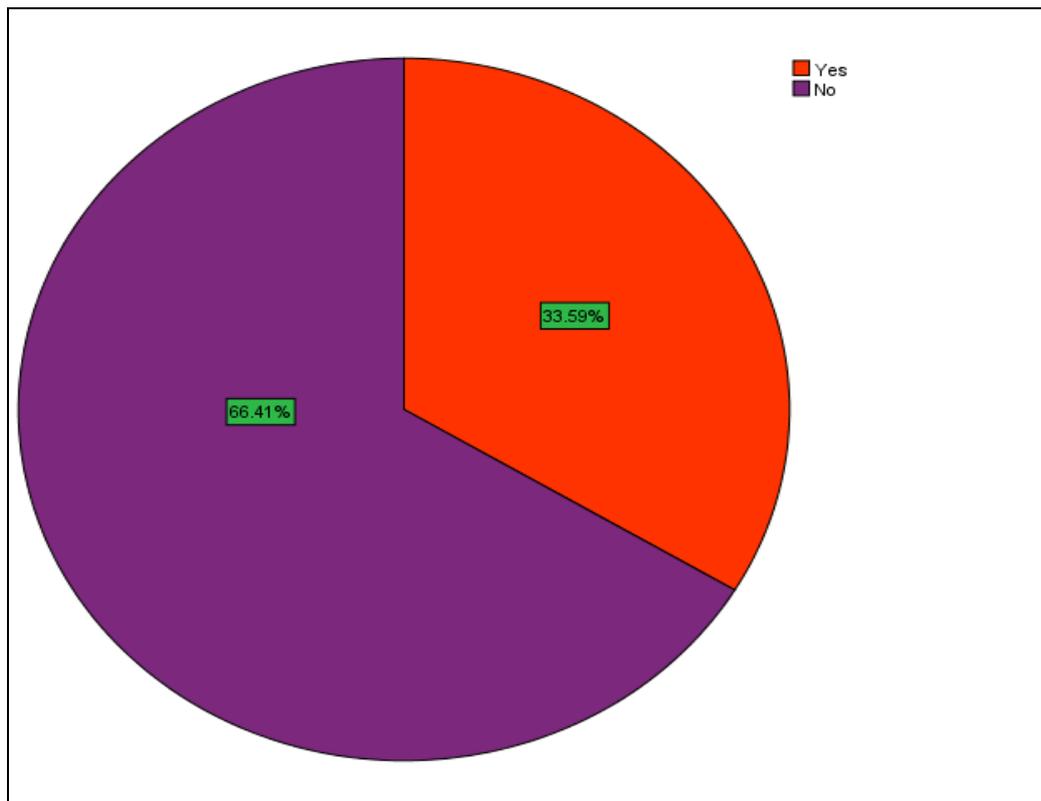


Figure 4-6: Proportion of Mothers who were aware of maternal waiting home in Merti Sub County

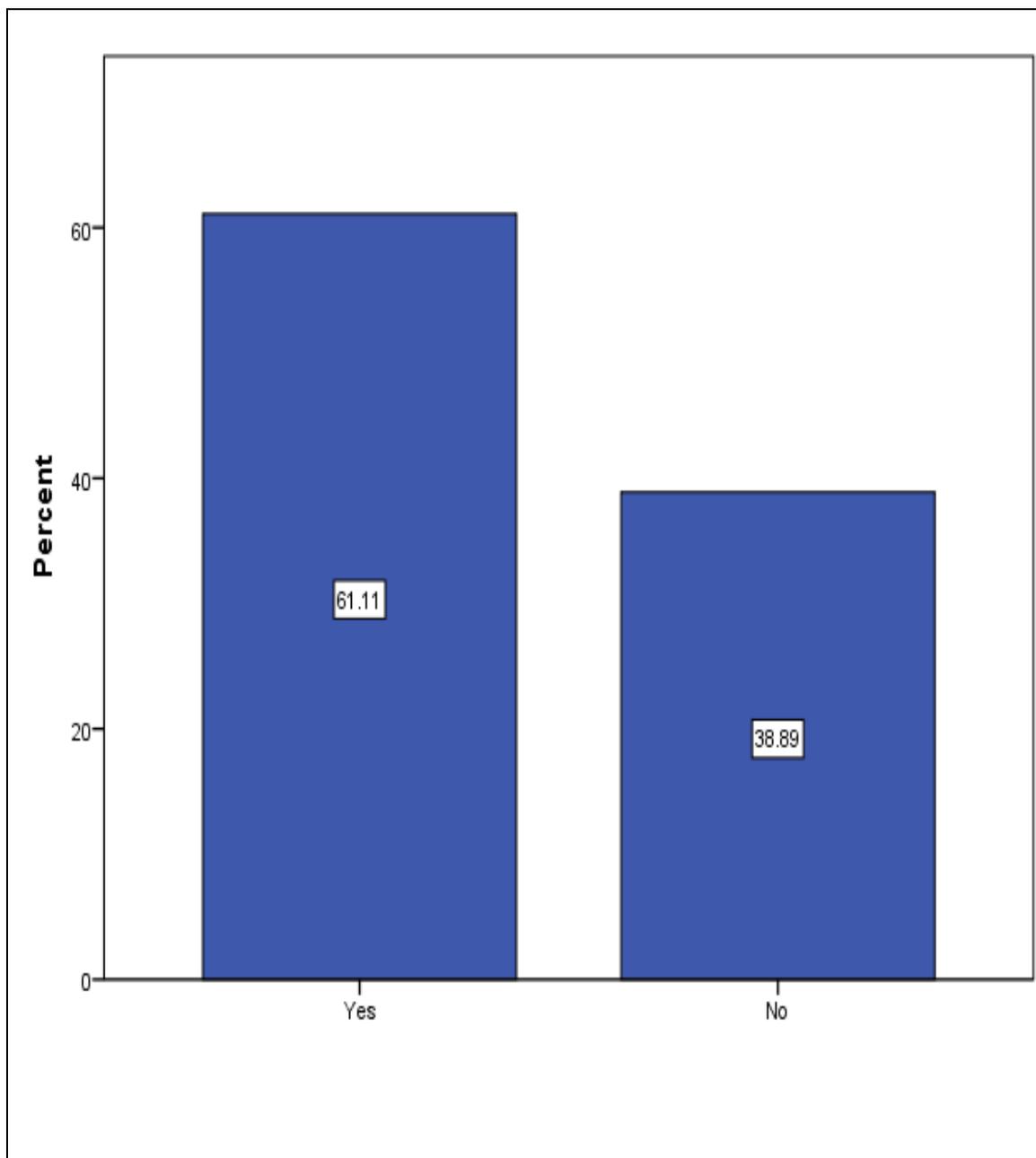


Figure 4-7: Proportion of Mothers in Merti Sub County who would use Maternal waiting home again.

Table 4.4: Awareness and willingness to use MWH among Mothers in Merti Sub County

Variable	Frequency	Percentage %
Source of information about the facility (n=384)		
CHW	44	11.5
Nurse	44	11.5
Doctor	7	1.8
Others(Fellow women)	38	9.9
N/A	251	65.4
Reason for willingness to use facility (n=384)		
Safety/skilled labour	136	35.4
Low cost	76	19.8
Others	22	5.7
N/A	150	39.1
If not willing the reasons for not Using maternal waiting home		
High cost/finance	74	19.3
Ignorance	40	10.4
Others	32	8.3
N/A	238	62.0

4.5: Bivariate Analysis

4.5.1 Association between Demographic characteristics and stage of pregnancy during first ANC visit

The chi-square test of association was used in bivariate analysis to find associations between demographics and stage of pregnancy during first ANC services. Age ($\chi^2=19.758$ p=0.53), Place of birth ($\chi^2=8.509$ p=0.20), Religion ($\chi^2=2.166$ p=0.53), Period lived ($\chi^2=11.14$ p=0.51), Educational level ($\chi^2=11.265$ p=0.50), mothers occupation ($\chi^2=13.946$ p>0.53) and husband occupation ($\chi^2=19.944$ p=0.12) were not significantly associated with stage of pregnancy during first ANC visit. Marital status ($\chi^2=28.201$ p=0.20) was statistically significantly associated with stage of pregnancy during pregnancy first ANC visit (Table 4.4).

Table 4-4: Association between demographic characteristics and stage of pregnancy during first ANC visit in Merti.

Variable		Stage of pregnancy during first ANC visit (months)				Total	Pearson chi-square	P value
		0-3(%)	4-6(%)	7-9(%)	Don't know (%)			
Age	10-15	0(0)	6(100)	0(0)	0(0)	6	19.758	0.537
	16-20	5(13.5)	20(54)	10(27)	2(5.7)	37		
	21-25	11(14.3)	55(71.4)	10(13)	1(1.3)	77		
	26-30	19(14.7)	87(67.4)	20(15.5)	3(2.3)	129		
	31-35	4(7.6)	35(66)	12(22.6)	2(3.8)	53		
	36-40	4(7.6)	37(71.2)	10(19.2)	1(2)	52		
	41-45	6(24)	11(44)	7(28)	1(4)	25		
	46-50	0(0)	4(40)	1(20)	0(0)	5		
Place of birth	Isiolo	47(12.6)	249(67)	68(18.2)	10(2.7)	374	8.509	0.203
	Marsabit	2(40)	1(10)	2(40)	0(0)	5		
	Others(Garisa)	0(0)	5(100)	0(0)	0(0)	5		
Religion	Christian	4(12.1)	25(75.8)	4(12.1)	0(0)	33	2.166	0.539
	Muslim	45(13)	230(65)	66(19)	10(3)	351		
Period Lived in Merti	1-10	0(0)	6(85.7)	1(14.3)	0(0)	7	11.141	0.517
	11-20	9(12.7)	42(59.3)	18(25.2)	2(2.8)	71		
	21-30	26(13.9)	132(71)	25(13)	4(2.1)	187		
	31-40	9(9.5)	62(65.3)	21(22.1)	3(3.1)	95		
	41-50	5(20.8)	13(54.2)	5(20.8)	1(4.2)	24		
Educational Level	No formal Education	20(10.2)	132(67)	37(18.7)	8(4.1)	197	11.265	0.506
	Primary School Level	19(15)	81(63.8)	26(20.4)	1(0.8)	127		
	High School Level	5(13.2)	26(68.5)	6(15.7)	1(2.6)	38		
	Tertiary Level	5(25)	14(70)	1(5)	0(0)	20		
	Others(Madras)	0(0)	2(100)	0(0)	0(0)	2		
Marital Status	Single	4(36.7)	7(63.3)	0(0)	0(0)	11	28.201	0.020*
	Married Mono	34(11)	209(68)	55(17.8)	103.2)	308		
	Married Poly	8(22.2)	22(61.1)	6(16.7)	0(0)	36		
	Divorced	3(20)	9(60)	3(20)	0(0)	15		
	Separated	0(0)	6(85.7)	1(14.3)	0(0)	7		
	Widowed	0(0)	2(28.6)	5(71.4)	0(0)	7		
Mothers Occupation	Housewife	41(12.6)	209(66)	59(18.4)	10(3.0)	319	13.946	0.530
	business woman	1(6)	16(94)	0(0)	0(0)	17		
	Nurse	0(0)	2(66.7)	1(33.3)	0(0)	3		
	Police Woman	0(0)	3(100)	0(0)	0(0)	3		
	Teacher	3(13)	16(69.5)	4(14.5)	0(0)	23		
	Others(civil)	4(21)	9(47.4)	6(31.6)	0	19		
Husband Occupation	Pastoralist	30(12.3)	151(62)	52(21.4)	10(4.1)	243	19.944	0.172
	Businessman	4(10.2)	34(87.1)	1(2.7)	0(0)	39		
	Teacher	5(23.8)	14(66.7)	2(9.5)	0(0)	21		
	Nurse	0(0)	2(100)	0(0)	0(0)	2		
	Others(civil)	9(12.7)	48(67.6)	14(19.7)	0(0)	71		

*Significance (p<0.05)

4.5.2 Association between Demographic characteristics and Number of times received ANC services

The number of times ANC services were received during pregnancy was subjected to bivariate analysis with socio demographic characteristics using chi-square test of association. Age ($\chi^2=48.143$, $p=0.01$), Educational level ($\chi^2=41.578$, $p=0.00$), Mothers Occupation ($\chi^2=47.631$, $p=0.00$), Husband occupation ($\chi^2=42.445$, $p=0.00$) and Religion ($\chi^2=11.245$, $p=0.24$) were significantly associated with number of times received ANC services. Place of birth ($\chi^2=15.413$, $p=0.052$), Period lived ($\chi^2=20.700$, $p=0.19$) and marital status ($\chi^2=15.036$, $p=0.77$) were not statistically significantly associated with number of times ANC services were received (Table 4.5).

Table 4-5: Association between demographic characteristics and Number of times ANC services were received during pregnancy in Merti

Variable		No. of times received ANC				Total	Pearson chi-square	P value
		1(%)	2(%)	3(%)	> 4(%)			
Age	10-15	0(0)	0(0)	2 (33.3)	4 (66.7)	6	48.143	0.010*
	16-20	1(2.8)	12(33.3)	6(16.7)	17(47.2)	36		
	21-25	2(2.5)	7(9)	26(33.7)	42(54.5)	77		
	26-30	7(5.4)	22(17)	24(18.7)	76(58.9)	129		
	31-35	3(5.6)	14(26.4)	12(22.6)	24(45.2)	53		
	36-40	1(1.9)	11(21.2)	13(25)	27(51.9)	52		
	41-45	5(20)	3(12)	3(12)	14(56)	25		
	46-50	1(20)	0(0)	3(60)	1(20)	5		
place of birth	Isiolo	19(5)	68(18.2)	88(23.5)	199(53.3)	374	15.413	0.052
	Marsabit	2(33.4)	1(16.6)	0(0)	3(50)	6		
	Others(Garisa	0(0)	0(0)	1(20)	4(80)	5		
Period Lived in Merti (Years)	1-10	0(0)	1(14.3)	2(28.7)	4(57)	7	20.700	0.190
	11-20	5(7)	9(12.6)	15(21)	41(59.4)	71		
	21-30	6(3.2)	31(16.6)	47(25.1)	103(55.1)	187		
	31-40	4(4.2)	24(25.3)	20(21)	47(49.5)	95		
	41-50	5(20.8)	4(16.6)	5(20.8)	10(41.8)	24		
Religion	Christian	0(0)	1(3)	8(23.5)	25(73.5)	34	11.245	0.024*
	Muslim	20(5.8)	68(19.4)	81(23.1)	181(51.7)	350		
Educational Level	No formal Education	15(7.6)	34(17.3)	53(26.9)	95(48.2)	197	41.578	0.000*
	Primary School	3(2.3)	29(23)	25(19.8)	69(54.7)	126		
	High School	2(5.3)	6(15.8)	9(23.6)	21(55.3)	38		
	Tertiary Level	0(0)	0(0)	2(10)	18(90)	20		
	Others (Madrassa.	0(0)	0(0)	0(0)	2(100)	2		
Marital Status	Single	0(0)	2(18)	4(36.5)	5(45.5)	11	15.036	0.774
	Married Monogamous	15(5)	56(18.3)	73(23.7)	163(53)	307		
	Married Poly	4(11)	7(19.4)	6(16.8)	19(52.8)	36		
	Divorced	0(0)	2(13.3)	2(13.4)	11(73.3)	15		
	Separated	1(14.2)	0(0)	2(28.7)	4(57.1)	7		
	Widowed	0(0)	2(28.7)	2(28.7)	3(42.6)	7		
Wife Occupation	Housewife	20(6.3)	65(20.4)	77(24.2)	156(49.1)	318	47.631	0.000*
	business woman	0(0)	0(0)	4(23.5)	13(76.5)	17		
	Nurse	0(0)	0(0)	0(0)	3(100)	3		
	Police Woman	0(0)	0(0)	1(33.3)	2(66.7)	3		
	Teacher	0(0)	2(8.7)	3(13)	18(78.3)	23		
	others	0(0)	2(10.5)	4(21)	13(68.5)	19		
Husband Occupation	Pastoralist	18(7.5)	57(23.5)	64(26.4)	103(42.6)	242	42.445	0.002*
	Businessman	0(0)	3(7.7)	9(23)	27(69.3)	39		
	Teacher	0(0)	0(0)	4(19)	17(81)	21		
	Nurse	0(0)	0(0)	0(0)	2(100)	2		
	Others	2(4)	9(18.4)	11(22.4)	27(55.2)	49		

*Significance (p<0.05)

4.5.3 Association between Demographic characteristics and place of delivery of the latest child

Place of delivery of the latest child was subjected to bivariate analysis with social demographic characteristics using chi- square test of association. According to the results, Period lived ($\chi^2=27.671$ $p<0.00$), Religion ($\chi^2=36.181$ $p=0.00$), Educational level ($\chi^2=84.333$ $p=0.00$), Mother's Occupation ($\chi^2=68.013$ $p=0.00$), Husband occupation ($\chi^2=41.976$ $p=0.00$) were statistically significantly associated with place of delivery of the last child. Age ($\chi^2=20.985$ $p=0.10$), Place of birth ($\chi^2=5.642$ $p=0.22$), Marital status ($\chi^2=15.554$ $p=0.11$) were not significantly associated with place of birth (Table 4.6)

Table 4-6: Association between demographic characteristics and place of delivery of last child in Merti Sub County

Variable		Place of last child delivery		Total	Pearson chi-square	P value
		Home/TBA (%)	Health facility (%)			
Age	10-15	1(16.7)	5(83.3)	6	20.985	0.102
	16-20	18(48.6)	19(51.4)	37		
	21-25	35(45.4)	42(54.6)	77		
	26-30	77(59.7)	52(40.3)	129		
	31-35	30(56.6)	23(43.4)	53		
	36-40	31(59.6)	21(40.4)	52		
	41-45	19(76.0)	6(24.0)	25		
	46-50	5(100)	0(0)	5		
place of birth	Isiolo	209(55.8)	165(44.1)	374	5.642	0.228
	Marsabit	5(100)	0(0)	5		
	Others(Garissa)	2(40.0)	3(60.0)	5		
Period lived in Merti	1-10	0(0)	7(100)	7	27.671	0.001
	11-20	29(40.8)	42(59.2)	71		
	21-30	104(55.6)	83(44.4)	187		
	31-40	63(66.3)	32(33.7)	95		
	41-50	20(83.3)	4(16.7)	24		
Religion	Christian	2(6.0)	31(94.0)	33	36.181	0.000*
	Muslim	214(60.9)	137(39.1)	351		
Educational Level	No formal Educ	150(76.1)	47(23.9)	197	84.333	0.000*
	Primary School	56(44.0)	71(56.0)	127		
	High School	9(23.6)	29(76.4)	38		
	Tertiary Level	1(5.0)	19(95.0)	20		
	Others(Specify)	0(0)	2(100)	2		
Marital Status	Single	4(36.3)	7(63.7)	11	15.554	0.113
	Married Mono	160(51.9)	130(48.1)	308		
	Married Poly	25(69.4)	11(30.6)	36		
	Divorced	6(40.0)	9(60.0)	15		
	Separated	2(28.5)	5(71.5)	7		
	Widowed	1(14.2)	6(85.8)	7		
Mother's Occupation	Housewife	217(68.0)	110(32)	319	68.013	0.000*
	business woman	2(11.7)	15(88.3)	17		
	Nurse	0(0)	3(100)	3		
	Police Woman	1(33.3)	2(66.7)	3		
	Teacher	1(4.3)	22(95.7)	23		
	others	3(15.7)	16(84.3)	19		
Husband Occupation	Pastoralist	164(67.4)	79(32.5)	243	41.976	0.000*
	Businessman	18(46.1)	21(53.9)	39		
	Teacher	7(33.3)	14(66.7)	21		
	Nurse	0(0)	2(100)	2		
	Others	23(32.4)	44(67.6)	71		

*Significance (p<0.05)

4.5.4 Association between Demographic characteristics and awareness of maternity waiting home

Awareness of maternity waiting home was subjected to bivariate analysis with socio demographic characteristics using chi- square test of association. Results showed that Educational level ($\chi^2=24.880$, $p=0.00$) Mother's occupation ($\chi^2=14.963$, $p=0.01$) and Husband occupation ($\chi^2=5.722$, $p=0.03$) were statistically significantly associated with awareness of maternity waiting home. Age ($\chi^2=4.671$, $p>0.70$), Place of birth ($\chi^2=2.466$, $p=0.26$), Period lived ($\chi^2=1.409$, $p=0.84$), Religion ($\chi^2=2.277$, $p=0.13$), Marital status ($\chi^2=6.602$, $p=0.25$) were not statistically associated with awareness of maternity waiting home (**Table 4.7**).

Table 4-7: Association between Demographic characteristics and awareness of maternity waiting home in Merti Sub County

Variable	Are you aware of maternity waiting home		Total	Pearson chi- square	P value
	Yes (%)	No (%)			
Age	10-15	3(50.0)	3(50.0)	6	4.671 0.700
	16-20	13(54.0)	24(46.0)	37	
	21-25	27(35.0)	50 (65.0)	77	
	26-30	44(34.1)	85(65.9)	129	
	31-35	17(32.0)	36(68.0)	53	
	36-40	19(36.5)	33(63.5)	52	
	41-45	6(24.0)	19(76.0)	25	
	46-50	0(0)	5(100)	5	
place of birth	Isiolo	127(34.0)	247(66.0)	374	2.644 0.267
	Marsabit	2(40.0)	3(60.0)	5	
	Others	0(0)	5(100)	5	
Period Lived	1-10	2(28.6)	5(71.4)	7	1.409 0.843
	11-20	22(30.9)	49(69.1)	71	
	21-30	65(34.7)	122(65.3)	187	
	31-40	34(35.7)	61(64.3)	95	
	41-50	6(25.0)	18(75.0)	24	
Religion	Christian	15(45.4)	18(54.6)	33	2.277 0.131
	Muslim	114(32.5)	237(67.5)	351	
Educatio nal Level	No formal Educ	46(23.3)	151(76.7)	197	24.880 0.000*
	Primary School	55(43.3)	72(56.7)	127	
	High School Level	20(52.6)	18(47.4)	38	
	Tertiary Level	6(30.0)	14(70.0)	20	
	Others(Specify)	2(100)	0(0)	2	
Marital Status	Single	3(27.3)	8(72.7)	11	6.602 0.252
	Married Mono	111(36.0)	197(64.0)	308	
	Married Poly	10(27.7)	26(72.3)	36	
	Divorced	4(26.6)	11(73.4)	15	
	Separated	0(0.0)	7(100)	7	
	Widowed	1(14.3)	6(85.7)	7	
Mothers Occupat ion	Housewife	99(31.0)	220(69.0)	319	14.963 0.011*
	business woman	11(64.7)	6(35.3)	17	
	Nurse	0(0)	3(100)	3	
	Police Woman	1(33.3)	2(66.7)	3	
	Teacher	7(30.4)	16(69.6)	23	
	others	11(57.8)	8(42.2)	19	
Husban d Occupat ion	Pastoralist	83(34.1)	160(65.9)	243	5.722 0.033*
	Businessman	15(38.4)	24(61.6)	39	
	Teacher	5(23.8)	16(76.2)	21	
	Nurse	1(50.0)	1(50.0)	2	
	Others	25(35.2)	46(64.8)	71	

***Significance (p<0.05)**

4.6 Multivariate Analysis

The significant factors from bivariate analysis (with $p < 0.05$) were then subjected to multivariate analysis (Multinomial logistic regression) to determine the final independent factors that were associated with dependent factors. After fitting factors which showed significant association in bivariate analysis and using multinomial logistic as method of analysis, 6 factors were retained in the final model (Table 4.8). Adjusting for other factors and keeping them constant, the results showed that marital status as a socio demographic variable was a significant determinant of the stage of pregnancy at first ANC visit. (Single $p=0.00$ Married monogamous $p=0.02$, Married polygamous $p=0.00$, Divorced $p=0.02$). However Separated $p=0.13$ was not significantly associated with stage of first ANC visit (Table 4.8).

The factors that were significantly associated with the number of times a mother received ANC services were Nurses $p=0.00$, police woman $p=0.00$ (wife occupation). Husband occupation pastoralists $p=0.11$, businessman $p=0.63$ and teacher $p=0.76$ were not statistically associated with number of times received ANC services. Religion, Christianity $p=1.0$ was not significantly associated with the number of times a mother received ANC services ($p > 0.05$). A mother who was a housewife was 10 times more likely to have attended ANC services more than four times than a mother who was not. The likelihood reduced to 3 times for mothers who were businesswomen, nurses, policewoman and teachers. Mothers whose husbands were pastoralists were 52 times more likely to have attended ANC services more than 4 times than mothers whose husbands were not. The odd reduced to 28 times for businessman, 20 times for teachers and 8 times for nurses (Table 4.8).

Place of last child delivery, Period lived, 1-10 years $p=0.00$, 11-20years $p=0.00$, 21-30 years $p=0.03$ were statistically associated with place of last child delivery. 41-50 years $p=0.23$ was not statistically associated with place of last delivery. Mothers who had lived in Merti for 1-10 years

were 1.5 times more likely to give birth in a health facility than mothers who had lived for more than 11 years. Education, no formal education $p=0.00$, primary school level $p=0.00$, high school level $p=0.00$, tertiary level $p=0.00$ and others madras $p=0.00$ were statistically associated place of last child delivery. Religion, Christianity $p=0.00$ was statistically associated with last place of delivery. A mother who had no formal education had seventy times odds of giving birth at home/TBA than a mother who had secondary and or higher level of education. The likelihood reduced to 11 times among those with tertiary level of education. Mothers occupation, housewife $p=0.00$ and nurse $p=0.00$ were statistically associated with place of last child delivery. Business mothers $p=0.72$, police $p=0.47$, and teachers $p=0.99$ were not statistically associated with place of the last delivery of the last child. Mothers who were housewives were 10 times more likely to give birth at home/TBA than mothers who were not. Mothers whose husbands were nurses were 7 times more likely to give birth in a health facility than those whose husbands were businessmen, pastoralists and teachers (Table 4.8).

Education $p=0.00$ was statistically associated with mothers awareness of maternity waiting home. Mothers occupation nurse $p=0.00$, housewife $p=0.02$ was statistically associated with mothers awareness of maternity waiting home. Business mothers $p=0.67$, police woman $p=0.44$ and teachers $p=0.07$ were not statistically associated with mothers awareness of maternity waiting home. A mother who had primary level of education was 7 times more likely not to be aware of maternity waiting home than a mother who had no formal education or secondary education or higher. It was also noted that a mother who was a business woman was 1.3 times more likely not to be aware of maternal waiting home than mothers who were not.

Table 4.8: Binary logistics regression for social demographic variable associated with stage of pregnancy during first ANC visit.

Predictor variable	β	S.E. (β)	Df	Adjusted OR	P-value
Stage of pregnancy during first ANC visit					
Marital status					
Single	-2.649	0.752	1	0.071	0.00
Married monogamous	-1.183	0.509	1	0.306	0.020
Married polygamous	-1.702	0.583	1	0.182	0.004
Divorced	-1.542	0.667	1	0.214	0.021
Separated	-1.158	0.783	1	0.314	0.139
Widowed	Reference				
No of times received ANC services					
Religion					
Christian	0.00	6114.63	1	1	1.000
Muslim	Reference				
Mothers occupation					
Housewife	16.133	2252.30	1	10.86	0.994
Business woman	1.099	1169.44	1	3.00	1.00
Nurse	1.099	0.00	1	3.00	0.00
Police woman	1.099	0.00	1	3.00	0.00
Teacher	1.099	9954.34	1	3.00	1.00
Others	Reference				
Husband occupation					
Pastoralist	3.960	2.93	1	52.438	0.177
Businessman	3.358	7.032	1	28.729	0.633
Teacher	3.004	9.805	1	20.173	0.759
Nurse	2.168	34.288	1	8.737	0.950
Others	Reference				
β –Coefficient for constant		S.E. – Standard error		Df – Degrees of freedom	
AOR – Adjusted odds ratio		P Significance at <0.05			

Table 4.8: Binary logistics regression for social demographic variables associated with Place of delivery of latest child.

Predict or variable	β	S.E. (β)	Df	Adjusted OR	P-value
Place of last child delivery					
Period lived					
1-10	-22.563	0.00	1	1.580	0.000
11-20	-1.706	0.558	1	0.182	0.002
21-30	-1.109	-0.524	1	0.330	0.034
31-40	-0.658	-0.547	1	0.518	0.230
41-50	Reference				
Education					
No Formal Education	20.389	1.040	1	71.2	0.00
Primary school level	18.959	1.041	1	17.8	0.00
High school level	18.058	1.095	1	69.13	0.00
Tertiary level	16.284	0	1	11.44	0.00
Others	Reference				
Religion					
Christian	-3.75	0.738	1	0.042	0.00
Muslim	Reference				
Mothers occupation					
Housewife	2.316	0.640	1	10.133	0.00
Business woman	-0.341	0.981	1	0.711	0.728
Nurse	-18.554	0.00	1	8.74	0.00
Police woman	0.981	1.377	1	2.66	0.476
Teacher	-18.554	5.403	1	8.74	0.997
Others	Reference				
Husband occupation					
Pastoralist	1.279	0.282	1	3.593	0.000
Businessman	0.394	0.405	1	1.484	0.330
Teacher	-0.145	0.524	1	0.865	0.783
Nurse	-18.680	0.000	1	7.717	0.00
Others	Reference				

β –Coefficient for constant
AOR – Adjusted odds ratio

S.E. – Standard error
P Significance at <0.05

Df – Degrees of freedom

Table 4.8: Binary logistics regression for socio demographic variables associated with awareness of maternity waiting home.

Predictor variable	β	S.E. (β)	Df	Adjusted OR	P-value
Awareness of maternity waiting home					
Education					
No Formal Education	-19.637	0.516	1	2.963	0.000
Primary school level	-18.718	0.520	1	7.431	0.000
High school level	-18.343	0.586	1	1.081	0.000
Tertiary level	-19.296	0.000	1	4.169	0.000
Others	Reference				
Mothers occupation					
Housewife	-1.117	0.480	1	0.327	0.020
Business woman	0.288	0.688	1	1.330	0.676
Nurse	-20.675	0.00	1	1.049	0.000
Police woman	-1.012	1.310	1	0.364	0.440
Teacher	-1.145	0.649	1	0.318	0.078
Others	Reference				
β –Coefficient for constant		S.E. – Standard error		Df – Degrees of freedom	
AOR – Adjusted odds ratio		P Significance at <0.05			

4.7. Services and practices of healthcare workers at the maternity waiting home.

4.7.1: Services at maternity waiting home.

MWHs should offer the following services as per WHO guidelines. Maternal Health Care with a weekly antenatal visit in the health facility, and daily, health staff should visit the MWH in order to monitor and assess pregnancies. Child birth classes, laboratory services. Preventive activities: multiple informative and counseling activities should be performed regularly concerning: neonatal care, post-partum care, and HIV and AIDS prevention. Recreational and productive activities.

The second research objective was to determine the health services at the maternity waiting home. According to the results from the checklist, health services, pre and postnatal care, laboratory tests, 24 hour nursing care, treatment of illness, uncomplicated delivery, education newborn care, nutrition, and child care were available services at maternity waiting home. Only natural method was the family planning method available since the facility was catholic based. There was no physician within the facility. Also health education, childbirth classes, literacy, skills training, food and laundry and recreational facilities were not available (**Table 4.9**).

Table 4-8: Health care services offered at maternity waiting home in Merti Sub County,

Services	Available	Not available
Health Services	Available	
Pre and Postnatal care	Available	
Physician exams		Not available
Laboratory tests	Available	
24 hour nursing care	Available	
Treatment of illness	Available	
Uncomplicated delivery	Available	
Health Education	Available	
Childbirth classes		Not available
Newborn care + breast feeding	Available	
Nutrition	Available	
Family planning	Only Natural method	
Literacy		Not available
Skills training		Not available
Food and laundry		Not available
Recreational activities (TV, games)		Not available
Child care		Not available
	Available	

4.7.2: Practices of healthcare workers at maternity waiting home

Key informant interview was used to collect information about the practices of healthcare workers at the maternity waiting home. The maternity home is based at the catholic dispensary within the same compound. At the time of the study, the patients were admitted at the maternity unit of the dispensary as the maternity is rarely fully occupied and has a capacity of 15 beds. The maternity waiting home had 4 beds that were occupied at the time of the study. Some cases like uncomplicated hypertension are managed at the dispensary.

“We admit mothers and take care of them until they deliver”.

Normal cases are admitted at the maternity and they pay between 500-1000/= 500 to 1000 KES for delivery. Payment for some mothers is waived if they do not afford. The payment is done in cash.

However, many mothers came to the facility late, when they were in critical conditions. Most of the time, they required referral for comprehensive care as the dispensary at the facility cannot handle surgical cases. The referral process was a major problem because of poor road network and communication.

“We have a problem bringing mothers who need emergency interventions to the health facilities”.

The catholic mission tried to reach the villages by using a motorbike ambulance, an innovation meant to rescue mothers who have difficulty accessing health facilities. They work closely with the GOK facilities to assist referral to the district hospital when necessary.

There is no monitoring being done but some organization on the ground is working on putting in place systems to run the waiting home. The facility has very few staff hence the same staff at the maternity handles the cases admitted.



Plate 1: Motorbike ambulance.

Through CHWs, TBAs and women living in the area, the importance of this facility was emphasized after several sensitizations were done at different locations. At the time of the study TBAs had been sensitized on the dangers of home delivery and importance of skilled delivery. Their role was to act as referral agents

4.8: Community perception on the maternity waiting home.

The third objective for this study was to find out community perception on maternity waiting home. A total of 25 Focus group discussions were held. A total of 250 Mothers participated in the FGDs, with majority of them being housewives; others were teachers and business ladies. Most of the mothers were in 25-30 age groups.

4.8.1 Themes and responses

Qualitative data was sorted according to themes. Main themes were further broken down into sub themes. Multiple responses came out of the participants from the FGDs, (Table 4.9).

Table 4-9: Themes and responses from FGDs, (Mothers) Merti Sub County,

THEME (Perception)	RESPONSES
<p>Sub themes</p> <p>a) Maternal problems</p>	<p>The main problems identified were bleeding during and after pregnancy (ante partum and post-partum haemorrhage). <i>“We have had women who bleed profusely during, others after pregnancy and the TBAs were unable to control it and as a result lost their lives others end up with severe anemia.”</i></p> <p>Maternal anemia, nutritional deficiency in pregnancy, and hypertension is another problem affecting mothers in this region. <i>“Some women complain of headaches their legs and faces are swollen, the TBAs could not tell it was high blood pressure until the mother starts convulsing, and is rushed to a nearby dispensary for help or some even end up losing their baby.”</i></p> <p>Most of the mothers have undergone FGM this contributes to pain during delivery.</p> <p>Others sited distance as another problem affecting them (some mothers stay far from the health facility causing others to opt not to attend clinic) <i>“Motor vehicles are rare around here and you can only get transport during market days and communication is also another problem, we don’t have network.”</i></p> <p>Those reliant on TBA have difficulties when complications arise as they do not have the capacity to manage these complications. These problems have improved overtime because some mothers attend ANC. Some still prefer and trust TBAs to healthcare workers.</p>
<p>b) Source of Maternal and Child health information</p>	<p>They reported the information is obtained from nurses, CHWs when attending; ANC, visiting the hospital as a sick patient or during nutritional check-up and Child Welfare Clinic. <i>“We receive health education from CHWs at the facility and also during the home visit sessions. The nurses also educate us on health matters during our clinic days.”</i></p>
<p>c) Awareness about Maternal waiting home??</p>	<p>Most of the mothers were not aware of the maternal waiting homes. The few who knew about the MWH knew through the nurses, TBAs in Merti and CHW, local leaders. <i>“We got the information from the nurses during our visit to</i></p>

	<p><i>clinics for ANC, some CHWs also told us about it during their home visits sessions.”</i></p>
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Table 4.10: Themes and responses from FGDs, (Mothers) Merti Sub County,

THEME (Perception)	RESPONSES
<p>Sub themes</p> <p>Perception about Maternal waiting home</p>	<p>MWH were perceived to be good.</p> <p>This was because there is early diagnosis of problems and complications are dealt with in good time. Also a mother gets enough rest.</p> <p>Most mothers given the opportunity would use the services offered at MWH. For the few who said they would not, said that the time one stays at the MWH is too long and that they had no one to take care of their other children.</p>
<p>d) Experience during pregnancy and child birth</p>	<p>Husbands support</p> <p>Men in the community are supportive of their wives and encourage them to attend both ANC and PNC. Some accompany their wives during delivery.</p> <p>ANC services</p> <p>Women when pregnant seek care from health workers and TBAs for those not near the health facility. Though mothers have been discouraged from using TBAs and some practices they still opt for them. At the health facility the nurse checks their Hb level, blood pressure, child position and status etc.</p> <p>Child Birth</p> <p>Most Mothers do not seek skilled assistance during childbirth due to lack of basic equipment to handle delivery and designated delivery room. The facilities are usually one roomed handling all the available services. They also view it as expensive and for some accessibility is challenging.</p> <p>Quality of healthcare</p> <p>The quality of health care was viewed as poor. Also the existing health facilities were poorly equipped and understaffed thus forcing women to prefer home delivery.</p> <p><i>“Most of our facility does not have the capacity to assist women who come for delivery services, there is one room where all services are provided and another used as store.”</i></p>
<p>e) Traditional beliefs about pregnancy and child birth</p>	<ul style="list-style-type: none"> ➤ Pregnancy should not be discussed until it is noticeable and that they should continue working as usual as this helps to quicken labor. ➤ One should not buy items for a baby until birth. ➤ Eating warm food and thick porridge after birth aid in healing after child birth and also gain back strength heal quickly and produce breast milk quickly ➤ A mother should be given plenty of soup and meat

during the forty days to help her regain strength and also for the baby to grow well.

Table 4.10: Themes and responses from FGDs, (Mothers) Merti Sub county,

THEME (Perception)	RESPONSES
<p>Traditions</p>	<ul style="list-style-type: none"> ➤ During child delivery mothers should be assisted by a midwife who is from the laboring mother’s clan ➤ After delivery the mother should wrap a <i>leso</i> around her waist to support her uterus. ➤ Husband and wife are separated for 40 days after birth of the baby, referred to as “<i>ulma</i>” to allow for recuperation. During this period the mother is taken care of by her own mother and mother-in-law. <p><i>“The mother should not leave the house during the forty days with the baby it’s a taboo and it’s also considered not good for the baby “</i></p> <p>Harmless to women</p> <ul style="list-style-type: none"> ➤ The pregnant woman should not sit on a mortar (<i>moye in boran</i>). ➤ The pregnant woman put sticks behind their ears when feeling nausea <p>(These practices mentioned do not hurt the mother.)</p> <p><i>“Some practices we know is harmful to women is circumcision but we are forced to follow traditions”.</i></p>
<p>f) Maternal health improvement</p>	<p>Community</p> <ul style="list-style-type: none"> ➤ Community can prevent maternal death during pregnancy and childbirth by attending clinics and delivering in hospitals. <p><i>“When you attend clinic you get to know how well you are doing and you get some supplements which you don’t get when you stay at home.”</i></p> <ul style="list-style-type: none"> ➤ Mothers acknowledge their responsibility in attending of ANC, utilization of the maternity waiting home, listening to health talks and seeking care from a skilled attendant. <p>The role of Government.</p> <p>They also identified the following as areas that the government should address.</p> <ul style="list-style-type: none"> ➤ Improve maternity services ➤ Build more maternity ➤ Increase personnel at the facility ➤ Strengthen referral network.

The subjects discussed during this FGD were viewed as important and covered issues important to mothers.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion.

5.1.1 Awareness among mothers about MWH

Awareness about the maternity waiting home was quite low. In our study 66.4% of 384, that is two thirds of the respondents were not aware of the presence of maternity waiting home and 61.1% answered that they would be willing to stay in a MWH. High cost was one of the reasons mentioned that would hinder utilization of maternity waiting home.

5.1.2 Services and practices experienced by the mothers at the maternity waiting home.

From the results of this study, it appears that the referral system in our study area is quite poor. This has significantly affected the utilization of the maternity waiting home. The link, or liaison, between existing community health services (required for appropriate referrals) and hospital obstetric services (necessary for transfer in case of complications) is very weak. Access to both of these services is imperative if women are to be identified and referred to the maternity waiting home and then transferred to obstetric facility.

Selection of women with high risk pregnancies, who should be transferred to MWHs, has not been very successful either. This present study is similar to one done in Tanzania, a study by Jahn et al. showed very poor risk identification by health care workers; only risk factors like previous caesarean section and first pregnancy lead to a marked selection towards health facilities with essential obstetric care (Jahn et al. 1998).

A study done in Ghana, reported failure of a MWH. The MWH was built far from a hospital, and emergency transport was needed to travel to the main hospital where obstetric facilities were available. During twelve months, only one woman stayed for a night at the MWH. This project

lacked community support and clearly did not improve the accessibility of health care, and therefore was doomed to fail (Wilson et al. 1997).

This study also revealed the following health services, pre and postnatal care, laboratory tests, 24 hour nursing care, treatment of illness, uncomplicated delivery, education newborn care, nutrition, and child care were available services at maternity waiting home. There was no physician within the facility. Health education, childbirth classes, literacy, skills training, food, laundry and recreational facilities were not available.

5.1.3 Community perception on the maternity waiting homes.

In a rural district in Ghana, 83% of women attended antenatal clinics at least once and 90% of respondents were willing to stay in a MWH when advised to do so. After the first year, attitudes and barriers were assessed, through focus group discussions with the people involved. There appeared to be strong financial barriers: home delivery is less expensive. Costs of living are higher in a MWH. In addition, women could not take care of their families and their farms. The location of the MWH was also considered problematic because it was still some way from the hospital and arranging transport at night was difficult. It was not considered safe at night and no healthcare personnel were available (Wilson et al. 1997). In Nicaragua, being away from the family was also considered the main drawback of staying in a MWH. (Wessel. L.1990).

In southern Malawi not all hospitals have MWHs. In those hospitals without MWH women may be lodged in the antenatal or postnatal ward, or in the guardian shelter. In interviews, 55% of women who had used a MWH were satisfied with their stay. They perceived the easy access to skilled attendance during delivery, receiving treatment during ANC, and the development of new companionship, as important advantages of using a MWH. However, concerns were raised about lack of supervision by midwives and poor staff attitude during ANC and delivery. (Touray-Daffeh et al. 2003)

In our study MWH were perceived to be good. This was because there is early diagnosis of problems and complications are dealt with in good time. Most mothers given the opportunity would use the services offered at MWH. For the few who said they would not, they mentioned high cost and the time one stays at the MWH is too long and that they had no one to take care of their other children and husband.

5.1.4 Determine the ANC practices among the mothers.

Selection of women for referral to a maternity waiting home is important. Selection takes place during antenatal clinics by the attending health professional, either within the hospital or in health centres/clinics without labour facilities. Several studies suggest that risk assessment should play a central role in reducing maternal mortality. It was believed that by selecting women with risk factors such as a poor obstetric history, high parity or anaemia and advising them to stay near a hospital could prevent poor outcome. (Lennox CE.1984)

While staying in the MWH, women often have access to antenatal care. They may visit the routine antenatal care program in the health facility, but more often the MWH is visited regularly by a nurse. Often, the time women spend in the MWH is also used to give health education about pregnancy, giving birth and neonatal care.

In Zimbabwe, a cluster survey (including 235 respondents) examined the use of maternal care services and found that nearly all (97%) women attended antenatal care during their last pregnancy at least once and 66% gave birth in hospital. The use of MWH increased the likelihood of hospital delivery nearly six fold. Only one third of all respondents, however, did use the MWH. (Van den Heuvel et al.1999)

The Isiolo Multiple Indicator Cluster Survey from 2008 reports shows that only 34% of births were attended by a skilled professional, one of the lowest percentages within the Eastern Province. While ANC attendance is high, there is a clear disparity with the number of women who follow through the continuum of care to skilled delivery. Only 33.4% of women in this

study attended at least four ANC. The trend in delaying ANC has been seen within other research studies in Kenya. In our study about half, 50.5% of the respondents delivered their last child at home and 68.8% made their own decision on place of delivery.

5.2 Conclusion

As this study has demonstrated, the awareness about maternity waiting homes is still low, 66.4% of the mothers were not aware of its existence and this has hindered its utilization.

Willingness to use this facility was high (61.1%) but it will only be used if women will be assisted to bear the direct and indirect costs of their longer stay.

It was noted that women acknowledged home delivery by TBA is less expensive and the cost of living are higher in MWH in addition women could not take care of their families during their stay in the facility.

TBAs still play a key role in home deliveries and this study revealed that the percentage of home deliveries was 56.26%, this is slightly higher than health facility delivery (43.75 %.).

ANC attendance started late for most women, 66.4% received their first ANC between 4-6 months. Only 33.4% fulfilled the recommended minimum number of visits required which was at least 4 times.

It was also noted that mothers who were housewives were more likely to attend ANC services more than mothers who were not. And mothers who did not have any formal education were likely to deliver at home.

The maternity waiting home was offering the majority of the service as per the WHO recommendations.

5.3 Recommendations

The importance of community participation and the development of culturally appropriate maternity waiting homes which meet local needs is crucial to successful implementation and long-term sustainability.

Advocacy, communication and community mobilization efforts must be stepped up so as to disseminate information on maternity waiting homes especially in rural communities in the district.

Ensuring transparency, accountability, rationality and cost effectiveness in the management of financial resources for health is a priority for the above mentioned issues to be addressed.

Establishing a monitoring and evaluation system and appropriate referral systems. Through proper training and close follow up.

In addition, to improve community perception proper communication and interaction with the target community will have to take place to become familiar with their needs and expectations.

TBAs can become an important pillar in the referral system by referring women with risk factors to maternal waiting home and where necessary to higher level of care.

Harnessing the comparative strengths of NGOs in the management of integrated activities that focus on short or medium term goals, and interactive partnerships with beneficiaries in the management of social and development services to enhance performance.

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Appendices

Appendix 1. Informed consent document for women

Project Title: Knowledge and attitude of women in child bearing age to maternity waiting home as a way of improving uptake of skilled delivery services in Merti Sub County, Isiolo County.

Principal Investigator: Rukia Ware Abdulkadir

Study Location: MERTI

Purpose of the Research: To assess the knowledge of women in child bearing age to maternity waiting home as a way of improving maternal health.

Hello. My name is.....and I am a research assistant. We are conducting a survey about maternal health in this community. We would appreciate your participation in this survey. I would like to ask you about your health and issues related to pregnancy and childbirth. This information will be used to improve health services in this district. I will also be asking you some questions about the health facility you usually attend. We will not share your identity or your individual responses with the staff at that facility or with anyone else. There are no risks involved in participating in the study.

Only survey organizers and the Committee that oversees the ethical aspects of this study may view the data. The responses you provide will be kept strictly confidential and will not be shown to other persons. Participation in this study or refusal to participate will not affect your ability to access health services or any other services. The interview usually takes between 30 minutes to complete. Participation in this survey is voluntary and you can choose not to answer any individual question or all the questions. However, we hope that you will participate fully in this survey since your views is important. This study will present findings in areas of importance to maternal health and will also address problems in access to health care. It will also generate useful information that will help design appropriate strategies and interventions that will

improve uptake of skilled delivery services as well as address the gaps in knowledge and awareness of the community on maternal and child health.

At this time, is there anything you would like to ask me about the survey?

For additional information about the survey and your participation in it, you can contact

RUKIA ABDULKADIR. TEL.NO 0721823513 OR

The secretary KEMRI, Ethics Review Committee

P.O BOX 54840- 00200

Nairobi.

Telephone Number. 0202722541, 0722205901, 0733400003.

E- mail. erc@kemri.org

By consenting, you indicate that you understand the information I just read about the Study and that you are willing to participate.

To Principal Investigator: I have agreed to the above information. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research and understand that I have the right to withdraw from the research at any time.

Signature of respondent

Date:

Signature of representative

Date:

Relationship to respondent

Signature of the Principal Investigator or her representative

..... Date:.....

Appendix 2. Translated informed consent document for women

APPENDIX SATHETI: TATABE KUBALISAF FUD'ACHA NADENI.

MAQA YAADHA:BEKUMAF FIKIRR NADENI MINN D'ALOTA IR'RA,AK ISIN KARRA

DANSAN ILMAN ARGATU OLLA MERTI KA ARDHA ISIOLO KESSA.

ABBA YAADHAT GUDHA:.....

OLLA BARANOTA:.....

WANN YAADH KAN YADHANIF:BEKUM NADENI ILMAN ARGACHUN DANDETU

MINN DALOTA IRRA QABDU BARACHU AK FAYUM GISSE DALOTA OLL FUDANN.

B'arra.maqaan kiyy.....annin abba yaadhat naerge.barannota fayum gisse

da'alla goss tana toch'n.qarqarss kesan gudho fenn.wann fayum tetitif,ulfinnaf dalla si gafachu

fed'da.od'un tann wan fayoma olfuti ardha kann kessat.wann diqqa tokole sigafad'a akimi at

datt irra.maqa ketiff wan at etelle namu in argu.dibb tokolen injiru gaffi TANN IRRA.

Warrum baranotat gudhat wan kan lal'a.wan'ni at't immtu namu inargu.did'an ak tok'ko

baran'not kh'an dib'dhi.baranoti kunn daqiqa sodoma fudhata.wann fet'tu immte wan iffen

lakifta,irren injirtu.ammo,inn abdad'ha akk atin wan chuff natt imtu.marro baranoti kunn

wanfayomm da'latiff akimmi tenn olfudhu.

Wann gafatu inqabda?.

Yo wann dib'bi baranota ka'nn irra barachu fe'te,warr khan gafad'i.

RUKIA ABDULKADIR.SIMU 0721 823513

OKA'NN

Naam watararu KEMRI, kometi adh'a

P.O BOX 54840-00200

NAIROBI.

SIMU 0202722541,0722205901,0733400003

E-mail.erc@kemri.org

Kubalitin tante,wann kunn yasigalte echhu ak atinn wann sigafatan ch'uff immtu.

Sahihi nam majibu thebisu.

Tariki:

Sahihi namjibu ejat.

Tariki:

Man namjibu male taat

Tariki:

Sahihi nam uji tan ojachu fedu

Tariki:

.....

.....

Appendix 3. Questionnaire for Mothers

Interview date: _____ Field Interviewer: _____

IDENTIFICATION		
Respondent's ID		
House identification number (house id)		
RESPONDENT'S BACKGROUND		
1	How old are you?	() years
2	Where were you born?	() county
3	How long have you lived in Isiolo County?	() years () months
4	Which religion do you practice?	<input type="checkbox"/> Christianity <input type="checkbox"/> Islam <input type="checkbox"/> Other, please specify_____
5	What is the highest level of education you attended?	<input type="checkbox"/> No formal education <input type="checkbox"/> Primary school level <input type="checkbox"/> High school level <input type="checkbox"/> Tertiary level (College/ Polytechnic) <input type="checkbox"/> Other, please specify_____
6	What is your marital status?	<input type="checkbox"/> Single <input type="checkbox"/> Married (Monogamous) <input type="checkbox"/> Married (Polygamous) <input type="checkbox"/> Divorced <input type="checkbox"/> Separated <input type="checkbox"/> Widowed
8	What is your occupation?	() name of occupation

9	What is your husband's/partner's occupation?	() name of occupation
PREGNANCY		
10	What was your age when you first got pregnant?	() years
11	How many times have you given birth?	() number
12	How old is your last child?	() months () weeks () days () years
14	During the pregnancy with your last child whom did you see anyone for antenatal care?	SBA <input type="checkbox"/> Doctor <input type="checkbox"/> Nurse <input type="checkbox"/> Midwife Other person <input type="checkbox"/> TBA <input type="checkbox"/> Community Health Worker <input type="checkbox"/> Herbalist <input type="checkbox"/> Other, please specify_____
15	During what month of your pregnancy did you first received antenatal care for this pregnancy?	<input type="checkbox"/> () month <input type="checkbox"/> Don't know
17	How many times did you receive antenatal care during this pregnancy?	() number
18	How much were you charged for the ANC services during your last visit to wherever you went?	() KES () Not charged
19	Where were you advised to deliver?	<input type="checkbox"/> HF <input type="checkbox"/> TBA <input type="checkbox"/> Home <input type="checkbox"/> Herbalist <input type="checkbox"/> None <input type="checkbox"/> Other, please specify_____
20	Were you told where to go if you had any	<input type="checkbox"/> Yes

	complications?	<input type="checkbox"/> No
21	From whom did you receive this advice?	
DELIVERY These questions will focus on the delivery of your last child		
22	Where did you go for delivery?	<input type="checkbox"/> Home <input type="checkbox"/> Health Facility <input type="checkbox"/> TBA <input type="checkbox"/> Other, please specify_____
26	How much did you pay for delivery?	<input type="checkbox"/> () KES <input type="checkbox"/> Nothing <input type="checkbox"/> Paid in kind
27	Did you have any problem getting to the health facility(when in labor)for the birth of your baby	<input type="checkbox"/> Yes <input type="checkbox"/> No
28	If yes please briefly describe of the nature of the problem.	
29	How did you access the place of delivery	<input type="checkbox"/> Walking <input type="checkbox"/> Motorbike <input type="checkbox"/> Personal Car <input type="checkbox"/> Taxi <input type="checkbox"/> Delivered at home <input type="checkbox"/> Other,please specify_____
30	How long did it take you from your home to the place of delivery?	() hours () minutes
31	Who is the main person who made the decision about where you should go for delivery?	<input type="checkbox"/> Myself <input type="checkbox"/> Husband

		<input type="checkbox"/> Mother <input type="checkbox"/> Father <input type="checkbox"/> Mother-in-law <input type="checkbox"/> Other, please specify _____
33	If you delivered at home, what were your reasons for choosing this place for delivery?	Give reason(s)
34	Are you aware of the maternity waiting home (manyatta)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
35	If yes, how did you find out about the facility?	
36	If you were to give birth again, would you use maternity waiting home if referred to one?	<input type="checkbox"/> Yes <input type="checkbox"/> No
37	If yes, Why would you go to the above named place?	Give reason(s)
38	If no, what are your reasons for not using a maternal waiting home?	Give reason(s)

Appendix 4. Translated Questionnaire
GAAFIN TUN TA WAN MIN D'ESISA KE JIR TU

GUYA GAFI:

ABBA/ADD GAFFI:

MAAQA NAM GAFFATAM (AFF ABB SADHI)	
AKEKHO MINNA	
DURIDURI NAM GAFFATANI	
1. GANNI KE AGAM 2. ARDHA KAMTI DALATE 3. ARDHA ISIOLO WAGGA AGAM TETE 4. DIINI TE TAM	<input type="checkbox"/> KIRISTO <input type="checkbox"/> ISLANA <input type="checkbox"/> WAQEFATA <input type="checkbox"/> TOKOLENIN
5. TAMARI ESS EJITA	<input type="checkbox"/> INTAMAREYU <input type="checkbox"/> KUTA SADETI <input type="checkbox"/> KUTA KUDANI LAMA <input type="checkbox"/> KOLEJI <input type="checkbox"/> UNIVASITI <input type="checkbox"/> DIGIRII LAMESO <input type="checkbox"/> TADIBI
6. QUBATE YAGARGAR BANE DIRS INQABU	<input type="checkbox"/> IYOYO <input type="checkbox"/> EEHE (MINTOKIN) <input type="checkbox"/> EEHE (MINLAMAMAN) <input type="checkbox"/> GAROB <input type="checkbox"/> <input type="checkbox"/>
7. DIRSI / WAELI KE AGAM TAMARE	<input type="checkbox"/> INTAMAREYU <input type="checkbox"/> KUTA SADETI <input type="checkbox"/> KUTA KUDANI LAMA <input type="checkbox"/> KOLEJI <input type="checkbox"/> DIGIRII QARA CHAL'LA <input type="checkbox"/> DIGIRII LAMMESO <input type="checkbox"/> TADIBI
8. MAN OJATA	() MAQA BASI
9. DIRSIKE / WAELI KE MANOJATA () MAQA BASI
<u>ULFINNA</u>	

10. GANN AGAMITI QUBATE / SIFUDANI	()	
11. IJOLE AGAM DALTE	()	
12. DAIMI MISHO GANN AGAM	()	JIAH () TORBAN () GUYA
13. GAFF ULFIN MISHO, KILINIKI DAMTE	<input type="checkbox"/>	EEHE
	<input type="checkbox"/>	IYOYO
INQABADU	<input type="checkbox"/>	
14. EEN GARTE GUYA MISHO SUN	<input type="checkbox"/>	CHIRESS GUDA
	<input type="checkbox"/>	DESIFTU
	<input type="checkbox"/>	NAM DIBI - TBA
		- OJATU TAYOM UMATA
		- CHIRESS QORSI MUK'A
		- TADIBI
15. GARACH JIAH AGAMI, QARA KILLIKI DEMTE	<input type="checkbox"/>	JIAH
	<input type="checkbox"/>	IMBEKHU
16. ESATI KILILIKI NAM ULFA ARGATTE	<input type="checkbox"/>	OLLA KEE
	<input type="checkbox"/>	OLLA OIBIBI
	<input type="checkbox"/>	HOSIPITAL
		MINN TBA <input type="checkbox"/>
		TADIBI <input type="checkbox"/>
17. MARR AGAMI KILILIKI NAM ULFA DEMTE	<input type="checkbox"/>	TOK
	<input type="checkbox"/>	LAM
SADHI	<input type="checkbox"/>	
	<input type="checkbox"/>	AFUR
18. ESSA WANN MINDESISA BARATE		
19. MAAF MINDESISA DEMTE		
20. QARQARSS KAN MACHITE, MAN IRRA IMTA		AMMA <input type="checkbox"/>
		IDUM KESS <input type="checkbox"/>
		DANSA <input type="checkbox"/>
		GUDHO DANSA <input type="checkbox"/>
21. FUL'LA TAN AWWAN DIBITAKETA	EEHE	<input type="checkbox"/>
		<input type="checkbox"/>
	IYOYO	<input type="checkbox"/>
22. AGARTIN TEE MAN MINDESISA KEESATI		
23. MAN QAJELCHU MALAN		

Appendix 5. Informed Consent Document for Health Workers

Project Title: Knowledge and attitude of women in child bearing age to maternity waiting home as a way of improving uptake of skilled delivery services in Merti Sub county, Isiolo County.

Principal Investigator: Rukia Ware Abdulkadir

Study Location: MERTI

Purpose of the Research: To assess the knowledge of women in child bearing age to maternity waiting home as a way of improving maternal health.

Hello. My name is.....and I am a research assistant. We are conducting a survey about maternal health in this community. We would appreciate your participation in this survey. I would like to ask you about your health services and practices of health workers in this facility mostly the maternity waiting home .This information will contribute towards improvement of health services in this district. I will also be asking you some questions about the health facility .We will not share your identity or your individual responses with anyone. There are no risks involved in participating in the study. Only survey organizers and the Committee that oversees the ethical aspects of this study may view the data. The responses you provide will be kept strictly confidential and will. Not be shown to other persons. Participation in this study or refusal to participate will not affect your ability to access health services or any other services. The interview will take 30 minutes to complete. Participation in this survey is voluntary and you can choose not to answer any individual question or all the questions. However, we hope that you will participate fully in this survey since your views is important. This study will present findings in areas of importance to maternal health and will also address problems in access to health care. It will also generate useful information that will help design appropriate strategies and interventions that will improve uptake of skilled delivery

services as well as address the gaps in knowledge and awareness of the community on maternal and child health.

At this time, is there anything you would like to ask me about the survey?

For additional information about the survey and your participation in it, you can contact

RUKIA ABDULKADIR. TEL.NO 0721823513 OR

The secretary KEMRI, Ethics Review Committee

P.O BOX 54840- 00200

Nairobi.

Telephone NO. 0202722541, 0722205901, 0733400003.

E- Mail. erc@kemri.org

By consenting, you indicate that you understand the information I just read about the

Study and that you are willing to participate.

To Principal Investigator:

I have agreed to the above information. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research and understand that I have the right to withdraw from the research at any time.

Signature of respondent

Date:

Signature of representative

Date:

Relationship to respondent

Signature of the Principal Investigator or her representative

Date:

.....

Appendix 6. Key Informant Interview (KII) Guide

1. Briefly explain how you coordinate between maternal waiting home and the hospital?
2. How many beds does the waiting home and what is the occupancy rate?
3. What are the costs incurred by women in the maternity waiting home?
 - a) How do they afford to pay for this services, are they allowed to pay in kind.
 - b) Probe for financial barriers.
4. How would you describe the knowledge of maternity waiting home among health workers, TBAs and mothers in remote areas?
5. How do you operate?
 - How do you liaise with the other health facilities that refer cases to the maternal waiting home?
 - What is the Criteria for referral?
 - Do you work together with other organization or health teams?
 - Interdisciplinary approach- composition of health teams
 - Interactions and roles.
 - Are there any on- going evaluation of maternal waiting home and community needs
 - What is the extent of follow- up by health workers of women referred to the waiting home?
6. How many staffs are assigned to the maternal waiting home?
7. What is the level of community participation with regards to the maternal waiting home?
8. Why do you believe some women chose to give birth at home rather than in a Health facility
9. What is currently being done to encourage women to use skilled care during delivery?

Appendix 7. Focus group discussion topic guide for women

Name of FacilitatorName of Note taker

Date.....Place of discussion

Time discussion started..... Time ended.....

Number of ParticipantWomen.....

Occupation of participants, Farmers.....Merchants.....daily laborer.....

Governmental employer..... House wife.....

Age of participants, 15-25 years.....26-36 years.....37-47 years48years.....

Introduction of moderators, note takers, participants and introduction of the objective of the discussion and topics

I am interested to know about the practice, experience, concerns and problems of the community about maternal health. I am especially interested to understand the issues of delivery and birth assistance and knowledge of mothers on maternity waiting home. I hope that your answers to my questions will be important to understand the situation and it will helpful to improve maternal health care in this area.

I expect our discussion to last about 30 minutes.

Thank you.

First, I would like to ask you some general questions about your community:

1. What are the major maternal health care problems of the community? Can you give some examples of the problems?
2. What kinds of problems do mothers have here? Has the problems gotten worse, better, or stayed the same in the last year?
3. How does the community get information about maternal health care? Can you give some examples?
4. Are you aware of maternal waiting homes?

If yes how did you get the information?

5. What do you think about it?

6. Do you understand the value of the maternity waiting home?

7. Given the opportunity would you use the facility?

If No why...

8. How do men deal with and participate in maternal health care issues?

9. Do the mothers seek care on pregnancy and delivery? When mothers are pregnant, do they usually see a health worker? Traditional birth attendants (TBAs)? What do women do when they are pregnant? Why?

10. What are the practices and experience of the mother on selection of delivery place? Why do you think most of mothers who are pregnant do not seek any skilled assistance during childbirth?

11. What are your opinions on quality of health care? Do the existing services help mothers during pregnancy and child birth?

14. What are the religious, traditional and cultural practices of the community during pregnancy and child birth?

15. Do the traditional practices hurt the laboring mother? Can you give some examples?

16. How can and how should this community prevent maternal death during pregnancy and child birth? What is the role of mothers and the community in reduction of maternal morbidity and mortality?

17. Before we finish, I would like to hear what did you think about the subjects we have discussed were they important? Do you think that this group covered issues that are important to mothers? What has been done here to improve mother's health? Is there anything the government can do?

Do you have any questions for me? If anyone would like to speak with me in private, I will stay here after we end.

Thank you all for your time and ideas. This has been extremely helpful. As I said in the beginning, the purpose of this discussion was to know about the situation of maternal healthcare and the problems you are facing. I hope this study will help to fully address the problems and improve the service in this area.

Thank you for your participation.

**Appendix 8. Translated focus group discussion topic guide for women
APPENDIX JAESO :DUBI WALGAFI KULM MATA,KA NADENI.**

Maqa abba Walgafi:..... Maqa Abba Waqoru.....

Guya..... Gaadiss Walgafi.....

Gisse Walgafin Jammarte:..... Gisse Isin Obate.....

Nami D’uff Agam..... Naden Agam.....

U’ji Warra:Gabare.....,Dilaltu.....,Uji Arka.....

War Uji Sirkala..... War Uji Mina.....

Gann Warra 15-25..... 26-36 37-47..... 48.....

**UFF IMANSS WAR GUGURDHA DUBI, KA WARWAQORU KA WARR KORR
DUFETIF DUBBI KORRA ANGAFFA.**

Wanni annin barachu fed’u,finna Argadageyi yaadhaf fayum Nadeni.Kesumat Wanni ann ak male barachu feddu,dalotaf qarqass gisse dalota,amale akk nadeni bekuma minn dalota qabdu.Imanss kesan gudho abdad’a ak inni na qarqare annin finn kan ubadhe dum walin malchinu.

Walgafin ten daqiqa sodoma fudati.

Galatoma.

Qarra wanni ann gaafadu ta’nn.

1.Di’bbi gudahn gochi tunn gisse da’lla argatt kamm?.ka beetu imm.

2.Naden dibbi kamm qabdi armati?.Dibbi kun oldem moh,gad’d demy o atin gann dabren walt laltu.

3.Oddu qorqorumma fayum ulfinna akamin argatan?.Ta b'et imm.

4.Akk minni Dalota Jirr Beta?.Akamin Beta.

5.Mann irra yaadh?.

6.Ulfin Min d'alota betta?

7.Yo qommi argate, tumita?Yo intuminne,Maaniff?.

8.Dirrti akam Fayumm Ulfinna kann Irra yaddh?

9.Hawann gisse ulfinna,qarqarss barbadhi?.Akamin yatt?Mo jarole ollah kess barbadhi?,Yo ulfinna nadenn man tatti? Maaniff.

10.Yaadhi nadeni fulla dalota irra mann?.

11.Yaadhi ke fayomm dansa irra mann?Qarqarsi laff jirru gaah.

14.Finni dinni,ka adha goss tan'na gisse ulfinna mann?

15.Fin'ni adh'a gisse dalota u'mme qa'bba?Yo u'mme tokole be'tt immi.

16.Duh gisse ulfinnatiff dalota akamin dowartan?.ujj'in tessan mann wan kan diq'esuf.

17.Ad'ho inn bufanne,wann nuduban kan akam agarre?.Kulmi kun wan jajabdu dubatt mo akka yadh'a ketit?.Akkamin fayumm nadeni gudiftan?.serkali mann tau ma'lle?.

Wann Gaffi inqabdani?NAmi kop'at narargu feddu,armat ka ammu.

Galatoma ka yadhaf gisse tann nakenitann.Gudho na qarqartanni.

Inn abdata ak walgaffin tun dibb nadeni obasiti nuqarqartu arm kesatt.

GALATOMA KA DUFFTAN

Appendix 9. Checklist
Maternity Waiting Home Services

1. Health Services
2. Pre and Postnatal Care
3. Physician exams
4. Laboratory tests
5. 24 hour nursing care
6. Treatment of illness
7. Uncomplicated delivery
8. Education
9. Childbirth classes
10. Newborn care + breast-feeding
11. Nutrition
12. Family planning
13. Literacy
14. Skills training
15. Other services
16. Food and laundry
17. Recreational activities (TV, games)
18. Child care

Appendix 10. SCC APPROVAL



KENYA MEDICAL RESEARCH INSTITUTE

P.O. Box 54840-00200, NAIROBI, Kenya
Tel (254) (020) 2722541, 2713349, 0722-205901, 0733-400003; Fax: (254) (020) 2720030
E-mail: director@kemri.org info@kemri.org Website:www.kemri.org

KEMRI/RES/7/3/1

July 08, 2013

**TO: MS. RUKIA WARE ABDULKADIR
PRINCIPLE INVESTIGATOR**

**THROUGH: DR. YERI KOMBE
DIRECTOR, CPHR
NAIROBI**

Dear Madam,

**RE: SSC PROTOCOL NO. 2527 (RE- SUBMISSION): KNOWLEDGE AND
ATTITUDE OF WOMEN OF CHILD BEARING AGE TO MATERNITY WAITING
HOME AS A WAY OF IMPROVING UPTAKE OF SKILLED DELIVERY SERVICES
IN MERTI DISTRICT, ISIOLO COUNTY.**

Reference is made to your letter dated June 24th, 2013. The ERC Secretariat acknowledges receipt of the Revised Study Protocol – dated 24th June 2013 on 27th June 2013.

This study seeks to determine the knowledge and attitude of women of child bearing age to maternity waiting homes as a way of improving uptake of skilled delivery services in Merti District, Isolo county.

After careful consideration, the Committee concluded that more information is necessary before a final decision on the study can be reached:

1. Provide the back translation certificate (for the documents translated),
2. What are the possible risks of participation in this study?

Please address the issues raised and remit **one (1) copy** of the revised proposal to the ERC Secretariat for further action.

Yours faithfully,

**DR. ELIZABETH BUKUSI,
ACTING SECRETARY,
KEMRI ETHICS REVIEW COMMITTEE**

In Search of Better Health

Appendix 11. ERC APPROVAL



KENYA MEDICAL RESEARCH INSTITUTE

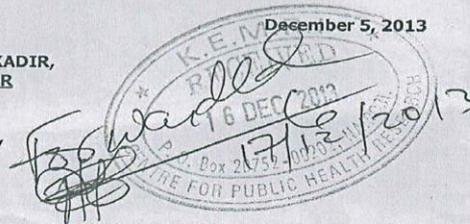
P.O. Box 54840-00200, NAIROBI, Kenya
Tel (254) (020) 2722541, 2713349, 0722-205901, 0733-400003; Fax: (254) (020) 2720030
E-mail: director@kemri.org info@kemri.org Website:www.kemri.org

KEMRI/RES/7/3/1

December 5, 2013

TO: **MS. RUKIA WARE ABDULKADIR,
PRINCIPAL INVESTIGATOR**

THROUGH: **DR. CHARLES MBACKAYA,
ACTING DIRECTOR, CPHR,
NAIROBI**



Dear Madam,

RE: **SSC PROTOCOL NO. 2527 (RESUBMISSION 2): KNOWLEDGE AND ATTITUDE OF WOMEN OF CHILD BEARING AGE TO MATERNITY WAITING HOME AS A WAY OF IMPROVING UPTAKE OF SKILLED DELIVERY SERVICES IN MERTI DISTRICT, ISIOLO COUNTY**

Reference is made to your letter dated 25th November 2013. The ERC Secretariat acknowledges receipt of the revised proposal on December 2, 2013.

This is to inform you that the Committee determined that the issues raised during 215th meeting of the KEMRI/ERC are adequately addressed. Consequently, the study is granted approval for implementation effective this **5th December 2013** for a period of one year up to **December 4, 2014**. Please note that authorization to conduct this study will automatically expire on **December 4, 2014**.

If you plan to continue data collection or analysis beyond this date, please submit an application for continuation approval to the ERC Secretariat by **23rd October 2014**. The regulations require continuing review even though the research activity may not have begun until sometime after the ERC approval.

You are required to submit any proposed changes to this study to the ERC for review and the changes should not be initiated until written approval from the ERC is received. Please note that any unanticipated problems resulting from the implementation of this study should be brought to the attention of the SSC and ERC and you should advise the ERC when the study is completed or discontinued.

Work on this project may begin.

Yours faithfully,

**DR. ELIZABETH BUKUSI,
ACTING SECRETARY,
KEMRI ETHICS REVIEW COMMITTEE**

In Search of Better Health

Appendix 12. ETHICS TRAINING

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM) COURSEWORK REQUIREMENTS REPORT*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** RUKIA ABDULKADIR (ID: 2783554)
- **Email:** itromid@gmail.com
- **Institution Affiliation:** Kenya Medical Research Institute (ID: 2126)
- **Institution Unit:** public health

- **Curriculum Group:** Social and Behavioral Responsible Conduct of Research
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - RCR
- **Description:** This course is for investigators, staff and students with an interest or focus in **Social and Behavioral** research. This course contains text, embedded case studies AND quizzes.

- **Report ID:** 7725498
- **Completion Date:** 04/03/2012
- **Expiration Date:** N/A
- **Minimum Passing:** 75
- **Reported Score*:** 93

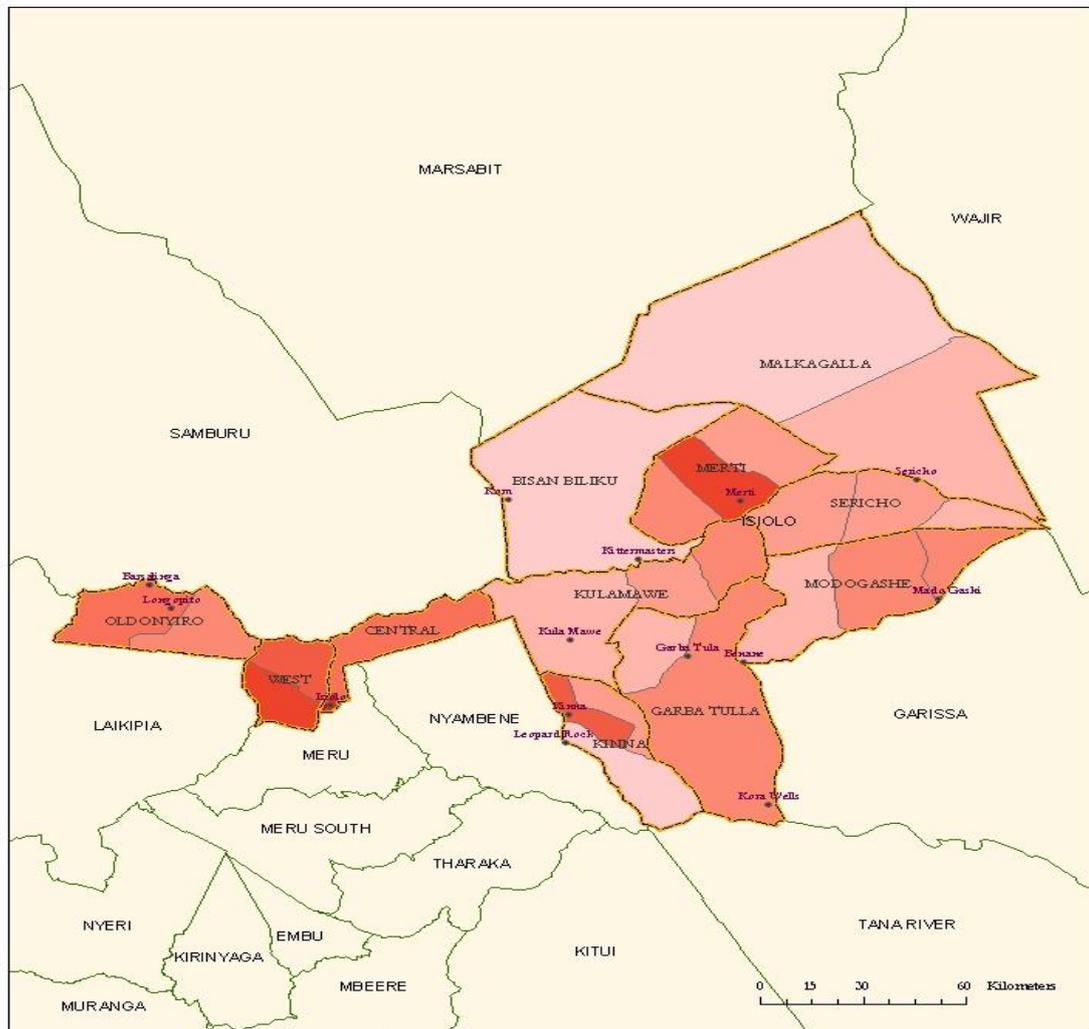
REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Introduction to the Responsible Conduct of Research Archived 1248	04/03/12	No Quiz
Research Misconduct (RCR-SBE)	04/01/12	4/5 (80%)
Data Management (RCR-SBE)	04/02/12	4/5 (80%)
Authorship (RCR-SBE)	04/02/12	4/5 (80%)
Peer Review (RCR-SBE)	04/02/12	5/5 (100%)
Mentoring (RCR-Interdisciplinary)	04/02/12	6/6 (100%)
Using Animal Subjects in Research (RCR-Basic)	04/02/12	7/8 (88%)
Conflicts of Interest (RCR-SBE)	04/03/12	6/6 (100%)
Collaborative Research (RCR-SBE)	04/03/12	6/6 (100%)
Research Involving Human Subjects (RCR-Basic)	04/03/12	11/11 (100%)
Responsible Conduct of Research (RCR) Course Conclusion	04/03/12	No Quiz

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

CITI Program
 Email: citisupport@miami.edu
 Phone: 305-243-7970
 Web: <https://www.citiiprogram.org>

Collaborative Institutional
 Training Initiative
 at the University of Miami

Appendix 13. Map of Isiolo County



Population Density Map - Isiolo District



Data source:
Kenya Population Census of 1989 from
Central Bureau of Statistics (CBS)

Legend

<p>Towns/Centres</p> <ul style="list-style-type: none"> • Districts □ Locations □ Sub-locations 	<p>Population Density per Km²</p> <p>DENSITY</p> <ul style="list-style-type: none"> 0 1 2 	<ul style="list-style-type: none"> 3 - 4 5 - 7 8 9 - 10 11 - 411 412 - 1561
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