UTILIZATION OF SKILLED BIRTH ATTENDANTS AMONG WOMEN OF REPRODUCTIVE AGE IN CENTRAL DIVISION, KAJIADO COUNTY, KENYA.

BY

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DECLARATION

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

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DEDICATION

This research work is dedicated to my husband Emmanuel; am greatly indebted to you, and to my lovely children Rita and Adrian.

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ABBREVIATIONS AND ACRONYMS

ANC : Antenatal Care

APHRC: African Population and Health Research Centre

BCC : Behaviour Change Communication

BSc. : Bachelor of Science

CHEW: Community Health Extension Worker

DFID: Department for International Development

EDHS: Ethiopian Demographic and Health Survey

ENV. : Environmental

FGDs: Focused Group Discussions

FGM: Female Genital Mutilation

FIGO: International Federation of Gynaecology and Obstetrics

GHI: Global Health Initiative

GOK: Government of Kenya

ICM: International Confederation of Midwives

KDHS: Kenya Demographic and Health Survey

KShs. : Kenya Shillings

KIIs: Key Informant Interviews

KNBS: Kenya National Bureau of Statistics

MCH: Maternal and Child Health

M&E: Monitoring and Evaluation

MDG: Millennium Development Goal

MNH: Maternal and Newborn Health

MOHEST: Ministry of Higher Education Science and Technology

NACOSTI: National Commission for Science, Technology and Innovation

NCAPD: National Coordination Agency for Population and Development

PPH: Post Partum Haemorrhage

SBAs: Skilled Birth Attendants

SPSS: Statistical Package for Social Sciences

TBAs: Traditional Birth Attendants

TTBA: Trained Traditional Birth Attendant

UN: United Nations

UNFPA: United Nations Population Fund

UNICEF: United Nations Children Education Fund

VIPL: Ventilated Improved Pit Latrine

WHO: World Health Organization

ABSTRACT

The proportion of births assisted by skilled birth attendants in Kenya is 44% while in Kajiado Central Sub County is 28%. Maternal mortality in Kenya is estimated to be 488 per 100,000 live births. This worrying trend of maternal mortality is thought to be a result of using unskilled attendants at birth. This study sought to determine the factors that influenced utilization of skilled birth attendants among women of reproductive age in Central division, Kajiado County. The objectives of the study were to: determine demographic characteristics, socio-cultural factors, economic factors as well as institutional characteristics that influenced utilization of skilled birth attendants among women of reproductive age in Central Division. A cross sectional descriptive study design was used. The study employed both qualitative and quantitative data collection techniques. Data was collected using semi-structured questionnaires, key informant interviews and focused group discussions. A total of 324 out of a sample population of 332 women of reproductive age who met the inclusion criteria were recruited for the study using systematic sampling of households. Informed consent was obtained from respondents. The respondents were assured of privacy and confidentiality. Quantitative data was analyzed using SPSS version 16 while qualitative data was organized and analyzed thematically. Hypothesis testing was done using Chi-square test. A p-value of <0.05 was considered significant. The study findings show a low level of utilization of skilled birth attendants (42%) among women of reproductive age in Central Division. The main determinants of utilization of SBAs were residence OR=0.038 (0.020-0.074), p<0.001, parity OR = 0.219 (0.118-0.405), p<0.001, births in past five years OR = 0.336 (0.204-0.767), p< 0.001, occupation OR = 0.383 (0.138-1.064), p=0.002 and cost of delivery OR=0.546(0.166-1.799). Others were husband's occupation OR=1.848 (0.991-3.446), p=0.001, monthly income OR=4.593 (2.296-9.190), p<0.001, husband's education OR=4.992 (2.285-10.907), p<0.001 and respondent's education OR= 6.703 (3.473-12.937), p<0.001.The study recommends that local leaders should encourage universal education of the girl child; MOH needs to carry out behavior change communication at individual and community levels to address socio-cultural practices that are barriers to the uptake of SBA services; county government to improve infrastructure especially in remote areas that are hard to reach; need to improve economic status of women to empower them economically; health care interventions to put emphasis on access and availability of services especially in rural areas and finally the MOH should provide mobile health care services and outreaches to remote villages and those difficult to reach.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

The period of birth is critical in the life of both the mother and the baby. Ideally, it needs to be assisted in a competent manner by a skilled birth attendant (SBA) supported by an enabling environment (Indira *et al.,* 2004). A measure of the proportion of deliveries assisted by skilled birth attendants is one of the indicators of progress towards achieving Millennium Development Goal (MDG) 5, which aims at improving maternal health (Wanjira *et al.,* 2011).

Maternal and perinatal health has emerged as the most important issue that determines global and national wellbeing. This is because every individual, family and community is at some point intimately involved in pregnancy and the success of a child birth (WHO, 2006). Despite the honour bestowed on womanhood and the appreciation of the birth of a new baby, pregnancy and child birth is still a perilous journey. Every year an estimated 60 million women give birth outside of health facilities, mainly at homes, and 52 million births occur without a skilled birth attendant (UNICEF, 2009). Access to skilled care at birth is lowest for the poor, who carry the burden of maternal and neonatal morbidity and mortality related to complications of child birth (UNICEF, 2009).

Globally, one third of births take place at home without the assistance of a skilled birth attendant (WHO, 2008). In Africa, less than 50% of births are attended by a skilled health worker (WHO, 2006) despite an increase from 43% to 57% between 1990 and 2005 in all

developing regions. Consequently, two million women have died in Africa during child birth since 2000 (UN, 2007). Lawn *et al* (2009) state that the lowest rates of skilled birth attendance are in South Asia and Sub-Saharan Africa, and progress to achieving universal attendance is staggeringly slow, particularly in Sub-Saharan Africa, where the average increase in skilled birth attendance is rising only by 0.2% per year. At this rate by the Millennium Development Goal (MDG) target date of 2015, still fewer than half of the births in the region will occur with a SBA (Knippenberg *et al.*, 2005). Maternal deaths in some Sub Saharan Africa countries is still as high as 1000 per 100,000 live births (African Population and Health Research Centre (APHRC), 2006).

The State of the World's Children report (UNICEF, 2009), states that one out of every 39 women in Kenya dies due to problems related to child birth. The report says that many women do not seek professional care before, during and after delivery. The percentage of medically assisted deliveries has fallen consistently from 50% in 1993 to 44% in 2008-09, 28% of the mothers are assisted by a traditional birth attendant, 21% by relatives and /or friends and 7% deliver alone (KDHS, 2008-09). Maternal deaths in Kenya are currently estimated at 488 per 100,000 live births. Some of the causes of maternal deaths are haemorrhage, obstructed labour, infections and unsafe abortions. This worrying trend of maternal deaths is thought to be due to the use of unskilled birth attendants.

In Kenya, skilled birth attendants' definition is restricted to doctors, nurses and midwives. Traditional birth attendants are excluded from this definition as most of them (80%) lack formal training on pregnancy and birthing related matters (Tawiah, 2007).

The 2008-09 KDHS shows that a large number of births (66.3%) in the Rift Valley province, in which Kajiado falls, took place at home yet for 88.4% of the births the mothers had received antenatal care from a skilled provider. Thus only 33.7% of the births were attended to by a skilled provider.

1.2 Problem statement

Maternal and child health remain a big challenge in much of Sub-Saharan Africa, with maternal death estimates still as high as 1000 deaths in 100,000 live births in some countries (APHRC, 2006). In Kenya maternal deaths are currently estimated at 488 per 100,000 live births (KDHS 2008-09). Skilled birth attendants could help reduce maternal mortality by 75% (UNFPA and Guttmacher, 2009). A strategy essential to reducing the high maternal mortality rate is to ensure that all (100%) births are attended to by skilled birth attendants. Most women attend ANC services in this case 88.4% in Rift valley; however when it comes to delivery by SBAs, the proportion declines in most circumstances. In Kajiado Central Sub County where the study area was, the proportion of births assisted by skilled birth attendants was 28% (Kajiado District Medical Records Office, 2012). This was far much lower than the national average which is at 44% (KDHS 2008/09). Even though the births at home declined from 59% in 2003 to 56% in 2008-09 survey, this rate of decline is not sufficient to meet the MDG 5 in 2015.

In the State of the World's Midwifery report released in 2011, research found that lack of an enabling environment such as regulations that allow midwives to practice lifesaving skills, availability of medicines, supplies and equipment are major constraints in effective

and efficient functioning of midwives. Accessibility of services in combination with cultural issues which influence acceptability of certain services hinder utilization of delivery services. Service access, relating to affordability is perhaps of greatest relevance to poor women (Magadi, 2004). A number of socio-demographic characteristics of the individual such as maternal age and parity affect the underlying tendency to seek care. Maternal education has also been shown repeatedly to be positively associated with the utilization of maternity care services (Addai, 2000). Whether these factors influenced the utilization of skilled birth attendants among women of reproductive age in Central Division was the subject of this study. This study therefore sought to determine the level of utilization as well as the factors that influenced the utilization of skilled birth attendants among women of reproductive age in Central Division.

1.3 Justification

Skilled attendance at birth is crucial for decreasing maternal and neonatal mortality, yet many women in low and middle income countries deliver outside of health facilities without skilled help (Izugbara,Ezeh and Fotso, 2009). Skilled delivery care is considered a crucial function within the health care system for saving the lives of mothers and newborns and represents an important indicator for monitoring MDG 5 (UN, 2000). This study was important in the context of current efforts to address poor maternal and child health outcomes in Africa.

Given the demonstrated health benefits of institutional deliveries and the fact that no similar studies had been carried out in this area before, it was necessary to understand the range of factors associated with the decision to seek care during delivery. The purpose of

this study was to determine level of utilization as well as the factors that influenced utilization of skilled birth attendants among women of reproductive age in Central division. The findings of this study are important in addressing the issues associated with maternal deaths which stands at 488 per 100,000 live births in Kenya and is thought to be contributed greatly by the use of unskilled birth attendants. These findings are also useful as a guide to develop effective maternity services and for informing policy.

1.4 Research Questions

This study sought to answer the following questions:

1. What are the demographic characteristics that influence the utilization of skilled birth attendants among women of reproductive age in Central division?
2. What are the socio-cultural practices that influence the utilization of skilled birth attendants among women of reproductive age in Central division?
3. What are the economic factors that influence the utilization of skilled birth attendants among women of reproductive age in Central division?
4. What are the institutional factors that influence the utilization of skilled birth attendants among women of reproductive age in Central division?

1.5 Null Hypotheses

The study was guided by the following null hypotheses

1. Demographic characteristics do not influence utilization of skilled birth attendants among women of reproductive age in Central division.

2. Socio-cultural practices do not influence utilization of skilled birth attendants among women of reproductive age in Central division.
3. Economic factors do not influence utilization of skilled birth attendants among women of reproductive age in Central division.
4. Institutional characteristics do not influence utilization of skilled birth attendants among women of reproductive age in Central division.

1.6 Objectives

1.6.1 Broad objective

The broad objective of the study was to determine the level of utilization as well as the factors that influenced the utilization of skilled birth attendants among women of reproductive age in Central Division.

1.6.2 Specific objectives

The specific objectives for this study were:

1. To determine the demographic characteristics that influence the utilization of SBAs among women of reproductive age in Central division
2. To establish the socio-cultural practices that influence utilization of SBAs among women of reproductive age in Central division
3. To determine the economic factors that influence utilization of SBAs among women of reproductive age in Central division
4. To establish the institutional factors that influence the utilization of SBAs among women of reproductive age in Central division

1.7 Significance and Anticipated Output

This study was important in the context of current efforts to address poor maternal and child health outcomes in Africa. It could enrich current knowledge of issues pertaining to maternal and child health in developing countries and deepen the understanding of women and health in the transition towards global health sustainability. It would also help policy makers, program managers and the government to develop effective ways of addressing this issue of ensuring that women of child bearing age deliver under skilled care and thus help achieve MDG 5. The study would also serve as a tool for any possible intervention aimed at improving the utilization of maternity care services in the area and beyond.

1.8 Limitations and Delimitations of the Study

1.8.1 Limitations

Inadequate resources

The financial resources were limited as the study was supported by the researcher; as a result research assistants had to walk most of the time

Long distance

The distance between homes was far apart. The research assistants walked long distances to reach the homes of respondents. This made data to be collected over a longer period of time. In some cases, respondents' were not available in their homes at the time of the visits especially on market days. This forced the research assistants to either wait or make return visits hence time consuming and also expensive.

Poor road network

There was poor road network to the rural areas. Vehicles were also scarce in the routes to the rural areas forcing the researchers to use alternative means like motor cycle to the far places. This was also expensive.

Communication

The lead researcher was not a local and therefore could not communicate in the local language. The research assistants though locals also had some challenges translating data collection tools into the local terms.

1.8.2 Delimitations

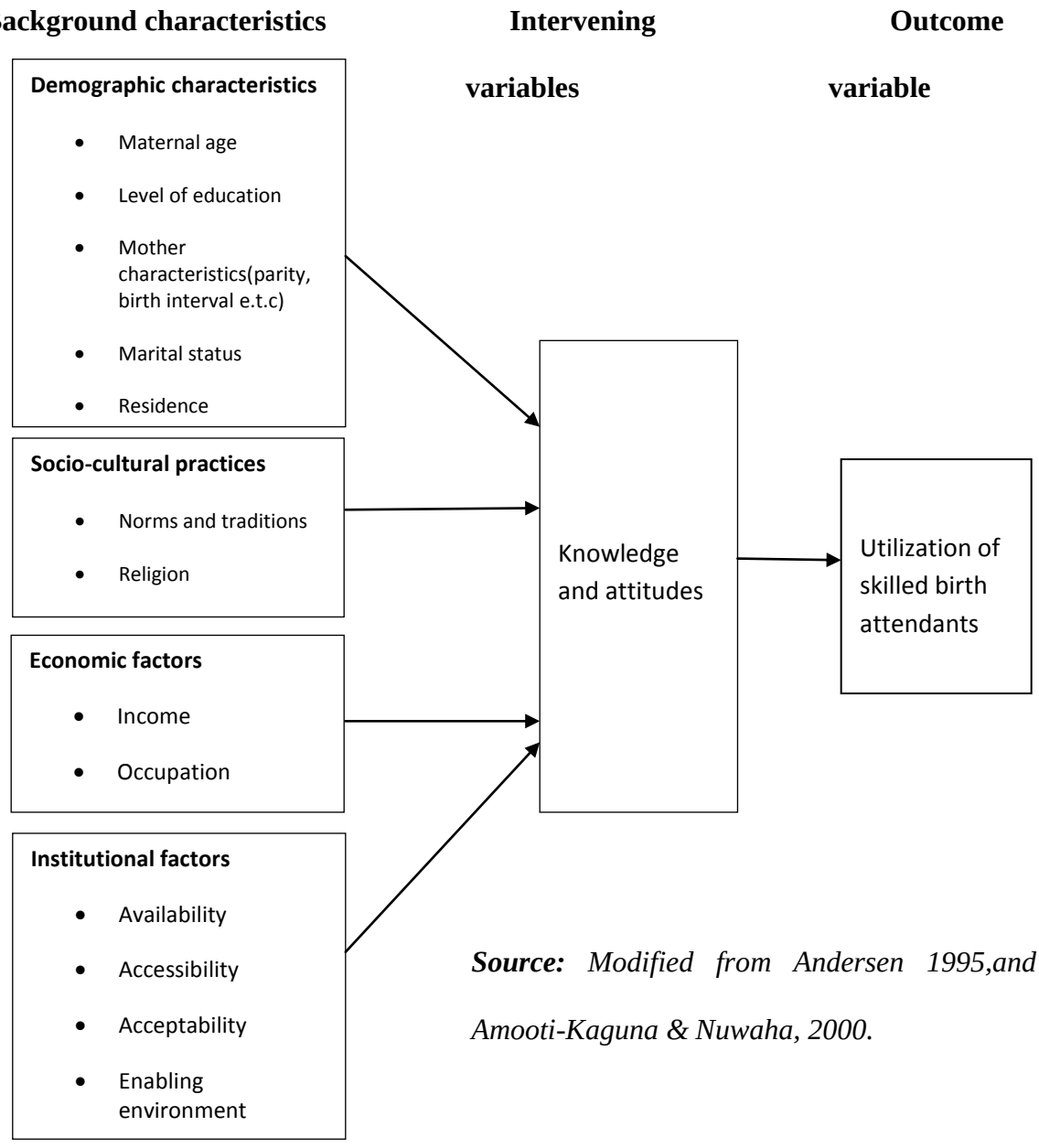
Coping mechanisms were developed by the team to overcome all the limitations that surrounded the study. The team hired motor cycles to ride to far off distances and remote areas with poor road networks to collect data. Translation and back translation of the research instruments was done during the training. The researcher also recruited research assistants who were fluent in English and could as well speak the local dialect. The team also got support from the local leaders who mobilized respondents especially during the FGDs. Reviews were done with the data collectors to address emerging issues. A local interpreter was also used to guide FGDs especially with the TBAs from the rural areas.

1.9 Assumptions of the study

This study assumed that mothers would accept to participate in the study and that the information provided to the researcher was true and accurate.

1.10 Conceptual framework

This study was based on a conceptual framework that demonstrated the relationships amongst variables as shown in Figure 1.1.



Source: *Modified from Andersen 1995,and Amooti-Kaguna & Nuwaha, 2000.*

Figure 1.1 Framework on factors influencing utilization of skilled birth attendants.

The determinants of utilization could be grouped under demographic characteristics, socio-cultural practices and characteristics of health care system including accessibility, acceptability, availability and cost of care. Demographic factors such as age represent biological urges of the likelihood that people will need health services (Andersen, 1995). Social, demographic and economic factors are expected to influence behavior through behavioural determinants (Amooti-Kaguna & Nuwaha, 2000). Attitudes, values and knowledge that people have about health care services might influence their subsequent perception of need and use of these services. Resources provide patients with the means to make use of services. Community and personal resources must be available to use in any time needed. For example health personnel and facilities must be available and people must have the means and know how to get to those services and use them (Andersen, 1995).

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The literature review is discussed in three sections aligned to the study objectives. Desk review was done to confirm findings from related studies. This provided basis for comparative analysis.

Section one introduces facts about skilled birth attendance and the importance of delivering by skilled assistance. It discusses the magnitude of skilled birth attendance on a global, African and Kenyan perspectives.

In section two, a review of existing liiterature on determinants of utilization of skilled birth attendance is discussed. The section highlights demographic, economic, socio-cultural and institutional factors that influence utilization. This provided evidence base, comparison and interpretation of findings for this study.

The last section summarizes the literature review and identifies the gaps.

2.2 Overview of Skilled Birth Attendance

A joint WHO/ICM/FIGO statement endorsed by UNFPA and the World Bank defines a skilled birth attendant as an accredited health professional- such as a midwife, a doctor or a nurse- who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate post natal period, and in the identification, management and referral of complications in women and newborns (WHO, 2004).

Skilled birth attendance has been described as a partnership of skilled birth attendants and an enabling environment of equipment, supplies, drugs and transport to emergency obstetric care. The political, policy and socio-cultural environment can also enable or prevent skilled attendance (DFID, 2005). Skilled birth attendance is one of the core indicators recommended by WHO and UNFPA as a routine indicator in all maternal health programs (Canavan, 2009).

Delivery through a SBA can help prevent infections through the practice of good hygiene during child birth and can help manage the obstetric complications if supported by a functioning health system (Akhter and Wohab, 2008). Provision of adequate medical attention during delivery is important for the well being of mother and child. Absence of such care and lack of hygienic conditions at the time of birth may lead to complications that would increase the risk of death of the mother, child or both (Rogan and Olvena, 2004). Recent research shows that delivery by a SBA serves as an indicator of progress towards maternal mortality worldwide. Rogan and Olvena also agree that the danger of

childbearing can be greatly reduced if a woman is healthy and well nourished before becoming pregnant and if a skilled birth attendant assists the birth.

2.2.1. Global Perspective on Skilled Birth Attendance

Every year an estimated 60 million women give birth outside health facilities, mainly at homes and 52 million births occur without a skilled birth attendant (UNICEF, 2009). Access to skilled care at birth is lowest for the poor, who carry the burden of maternal and neonatal mortality and morbidity related to complications of child birth. Globally as few as one third of deliveries take place in a health facility and most births around 60 million each year, are attended by unskilled attendants or nobody at all (DFID,2005).

Millennium Development Goal Five (MDG 5) aims to reduce the global maternal deaths by three quarters between 1990 and 2015, to have universal access to reproductive health services by 2015. This is proving far and away the hardest MDG to achieve (Lunan *et al.*, 2010). By 2005 figures already indicated that it was unlikely these targets would be achieved, and that there will not be a significant reduction in maternal mortality. The global maternal mortality ratio was 430/100,000 in 1990. By 2008, the number remained above 300/100,000- a reduction of less than 1% (WHO, 2008). To enable the MDG to be achieved a 5.5% reduction in maternal deaths is required (WHO, 2007).

As studies have found out, there can only be a reduction in maternal deaths if women are attended to by skilled birth attendants during delivery because there have been demonstrated health benefits of delivery under the assistance of a skilled health worker.

Numerous studies have been conducted in several countries on the utilization of maternal health services. In Yemen, only 22% of births are attended to by a skilled birth attendant with a total of 77% of all deliveries taking place at home, thus assuming that most births are attended or supported by an untrained provider (Kempe, *et al.*, 201l). Pathak (2010) in a study in India found that utilization of SBAs among mothers increased from 36.2% in 1992-1993 to 49.5% in 2005-2006. The study found that use of SBAs remained considerably lower among poor mothers relative to their non poor counterparts.

The findings of a study in India by Singh *et al.,* (2012) showed unacceptably low utilization of safe delivery care services among adolescents ever married women in India. Only 46% were assisted by skilled health providers hence considered safe. Achieving 80% institutional deliveries and conducting 100% deliveries by trained personnel have been considered crucial amongst the national socio-demographic goals for 2010 set up by the Government of India (Garg *et al.,* 2010). However, studies in India show that majority of births particularly in the rural areas are still delivered at home, most of them without skilled assistance. Garg *et al.,* (2010), in their study found that 66.1% of deliveries took place at home with 52.6% being considered unsafe. Only 47.4% females had safe deliveries.

2.2.2. Sub-Saharan African Perspective on Skilled Birth Attendance

In Africa, less than 50% of births are attended by a skilled health worker (WHO, 2006) despite an increase from 43% to 57% between 1990 and 2005 in all developing regions. Data from Sub- Saharan Africa suggest that only 15-30% of women receive skilled care

at delivery with wide variations between rural and urban areas (Canavan, 2009). The 2005 Ethiopia Demographic Health Survey (EDHS) data show that most deliveries still occur at home and are assisted medically by unskilled birth attendants. Among all the live births in the five years preceding the survey, almost 95% took place outside a health facility. Only one out of twenty births occurred in a health facility assisted by a skilled birth attendant (UNFPA, 2008).

Okonofua *et al* (2010), in their study reported that the overall coverage for SBAs at delivery in Nigeria was only 39%. Lack of access to SBAs especially in Northern Nigeria are due to various socio-economic and cultural factors including low education levels, young maternal age, ignorance, rural residence and high rate of poverty.

2.2.3. Kenyan Perspective on Skilled Birth Attendance

Kenya hosted the first international meeting of the Safe Motherhood Initiative in 1987. Since then, increasing access to and use of skilled maternity care has been a major priority of the Kenyan Ministry of health, as part of its efforts to reduce maternal mortality. The National Strategy for Reproductive Health Care (GHI, 2011) aimed at increasing skilled child birth attendance from 45% to 90% by the year 2010. The goal of the Government of Kenya's Maternal and Newborn Health (MNH) Road Map is to accelerate the reduction of maternal and newborn morbidity and mortality towards the achievement of MDGs (GOK, 2009).

Assistance during child birth is an important variable that influences the birth outcome and the health of the mother and the infant. The skill and performance of the birth attendant determines whether or not he/she can manage complications and observe hygiene practices (KDHS, 2008-09). The Kenya Demographic and Health Survey 2008-09 showed that the maternal mortality ratio was on the rise from 414 per 100,000 live births in 2003 to 488 per 100,000 live births. This is a worrying trend since most countries are working towards scaling down these deaths that are due to preventable causes such as post partum hemorrhage, sepsis and obstructed labour. Skilled attendance at birth is crucial for decreasing maternal and neonatal morbidity and mortality, yet many women in low- and middle income countries deliver outside of health facilities without skilled help (Izugbara, Ezeh and Fotso, 2009).

The Government of Kenya's March 2009 National Road Map for Accelerating the Attainment of the MDGs Related to Maternal and Newborn Health in Kenya (GOK, 2009) identified several barriers for program improvement including: lack of recognition of danger signs during pregnancy; poor accessibility and utilization of skilled attendance during pregnancy, childbirth and post partum period; limited access to essential and emergency obstetric care due to limited health provider competencies and inadequate staffing, equipment and supplies, socio-cultural barriers leading to delays in seeking care; and limited national commitment of resources for maternal and newborn health. This, when addressed could see a reduction in the deaths of mothers and newborns.

In Kenya 44% of births are delivered under the supervision of a skilled birth attendant, usually a doctor, nurse or midwife. Traditional birth attendants (TBAs) still continue to play a vital role in delivery assisting with 28% of births. Relatives and/ or friends assist with 21% of births and for 7% of births, mothers do not receive any form of assistance (KDHS, 2008-09). The 2008-09 KDHS showed that there is a marked regional disparity in terms of delivery with skilled birth attendants. Western province recorded the lowest proportion (26%) of births assisted by medical professionals followed by North Eastern (32%). Nairobi had the highest proportion of births (89%) assisted by skilled medical personnel.

Carter (2010) in his study in Malindi found that institutional delivery was thought to be a service only utilized when complications arise. Most women in this study (58.5%) noted their decision of where to give birth to be dictated by existence or lack of ‘‘problems’’ before or during delivery. A similar study by Cotter, Hawken and Temmerman (2006) also found that despite provision of services; use of skilled attendant assisted deliveries remained low at 5.4%. In their study in Kikoneni location, Coast province; coverage of skilled attendants’ delivery service was far below the national average and fell below the national and international goals aimed at reducing maternal mortality.

In Kajiado Central Sub County, about 28% of deliveries are assisted by skilled birth attendants and in Central division only three health facilities offer MCH services (Kajiado District Medical Records Office, 2012). TBAs are not regarded as skilled birth attendants because they generally do not have the necessary skills to recognize, manage

and prevent pregnancy related complications; this puts the life of the mother and the child at risk.

Traditional harmful practices affect maternal health outcomes. Some Kenyan communities persist with traditional practices even though they have been found to be harmful to the health and well being of women and girls. Two of the most detrimental are early marriage and female genital mutilation (FGM), often referred to as female circumcision or female genital cutting. FGM causes complications during child birth. Early marriage results in early child bearing which carries health risks to both the mother and the child. Other effects of early marriage are dropping out of school leading to lack of employment, impaired personal growth which can lead to poverty (National Coordination Agency for Population and Development (NCAPD), 2005). All these affect the women's health seeking behavior and thus may influence the use of skilled assistance at delivery. Unfortunately, these practices form part of the cultural beliefs of the Maasai community, the indigenous people of Kajiado.

Reductions in maternal mortality have fallen short of MDG 5. SBAs can decrease maternal mortality but the proportion of women giving birth with a SBA remains low (Population council, 2011). The governments of various countries, especially the developing countries need to put more effort if MDG 5 is to be achieved even if not by 2015. All births (100%) need to be assisted by SBAs in order to ensure that every mother and child count.

2.3. Determinants of Utilization of Skilled Birth Attendants

There is evidence that access to skilled assistance and well equipped health facilities during delivery can reduce maternal mortality and morbidity, and improve pregnancy outcome (Fenta, 2005). Skilled attendants at delivery are the most widely adopted process indicator that is closely correlated with maternal and perinatal mortalities.

Utilization of SBAs can be influenced by a number of factors which include demographic characteristics (such as maternal age, education level, parity and marital status), socio-cultural factors (such as norms, traditions and religion), economic factors (such as income, occupation and household wealth) and institutional characteristics (such as enabling environment, accessibility, acceptability and availability).

2.3.1. Demographic Characteristics influencing utilization of SBAs

Utilization of delivery care services is associated with a number of demographic characteristics. One important characteristic that affects the health seeking behavior is the mother's age at the time of birth (UNFPA, 2008). A study by Bell *et al.,* (2003) showed that lower utilization of skilled birth attendants was observed among mothers who were over 35 years of age. This finding was consistent with the findings of other studies (KDHS, 2008-09, Wanjira *et al.,* 2011) where young mothers tended to seek delivery care from skilled birth attendants than older mothers. Maternal age is associated with the type of assistance at delivery. Births to older women are more likely to occur with no assistance compared with births to younger women (KDHS, 2008/09).

Education serves as a proxy for information, cognitive skills and values, education exerts effect on health seeking behavior through higher level of health awareness and greater knowledge of available health services (Moore, *et al.,* 2011). Education enhances communication with the husband and other family members on health related issues. It helps women to develop greater confidence to make decisions regarding their health (Singh *et al.,* 2012). Educated women seek out higher quality services and also greater ability to use health care inputs to improve their health. Moore, *et al.,* (2011) in their study in Nigeria found that maternal education contributed significantly to increased utilization of health facility delivery services. This concurs with other studies (Babalola &Fatusi 2009, Garg *et al.,* 2010, Haque 2009 and Rogan &Olvena 2004), that reported the same finding that the more a mother was educated the more likely she was to deliver through a skilled birth attendant. Low education levels coupled with low awareness of the existence of the need for skilled birth attendants further reduce the demand for delivery services. For there to be a significant reduction in maternal deaths, the immediate goal is to have a skilled attendant during every delivery (NCAPD, 2005).

Parity, the number of children born, is strongly associated with health seeking behavior. Singh *et al.,* (2012) found that the probability of delivery under skilled care was less likely among women who had birth 2-3 and birth interval >24 months than among women who had experienced their first childbirth. This was consistent with results in other studies where parity was found to have a negative association with delivery care. With an increase in birth order, the odds of delivering with a health professional compared to preference category (i.e. one child) decreased (Rogan and Olvena, 2004).

Women with higher birth order utilized professional delivery care to a lesser extent than first births. According to the KDHS 2008/09, the child's birth order was found to be associated with the type of assistance at delivery. Women with higher birth order are more likely to deliver without the assistance of skilled birth attendants compared with those women with lower birth order.

In their study, Ochako *et al.*, (2011) found that marital status had a significance influence on the use of skilled professional assistance at delivery. Never married women were assumed to have higher autonomy and did not depend on decisions of others, unlike their married counterparts who depend on decisions of their husbands and mothers-in-law. Married women were also more likely to get assistance from relatives at home unlike their unmarried counterparts.

The KDHS 2008/09 found that residence was a factor that influenced utilization of skilled delivery care. Births in urban areas were more likely to be assisted by medical personnel than those births to mothers who reside in rural areas.

2.3.2. Socio-cultural Factors influencing utilization of SBAs

The political, policy and socio-cultural environment can also enable or prevent skilled attendance (DFID, 2005). Socio-cultural factors primarily influence decision making on whether women seek care rather than affecting whether women reach a facility (Gabrysch and Campbell, 2009). Social and cultural norms that place women at a lower status than men limit their political commitment necessary to develop the human resources and systems necessary for skilled attendance. In addition the same norms played out at

household level constrain health care seeking even when the services are available. For example, in the DFID (2005) report, 87% of Afghani women required the permission of their husbands before seeking health care and 45% believed a husband had a right to beat his wife if she disobeyed his orders. Afsana and Rashid (2001) in their study found out how disrespect of cultural norms by the health care providers in health centres discouraged women from seeking health care. Lack of proper communication with the patients and disrespect for traditional birthing position practice, ignorance of privacy of patients and misconduct by the female maternal health care providers made women to be reluctant to go to health centres for health care (Akhter and Wohab, 2008). Geubbels (2006) noted that in some regions it was believed that if women ‘‘revealed’’ the commencement of labour (for example by making the journey to the hospital) this would attract the attention of the evil spirits who may bring harm to the mother and child. This can be a powerful disincentive to travel.

The role of traditional and religious beliefs as well as the perception of women with regards to comparative efficacy of the medical versus the traditional birth attendants could also contribute to failure of women to have skilled birth attendants (Babalola & Fatusi, 2009). In their study, Singh *et al.*,(2012) found that religion was a significant determinant in the utilization of safe delivery care.

2.3.3. Economic Factors influencing utilization of SBAs

Economic factors influence the chances of women accessing skilled birth care and surviving the trimester of pregnancy and delivery of a healthy baby (Canavan, 2009).

While it is recognized that traditional birth attendants (TBAs) can and do provide emotional and social support to the mothers and can provide key health and education messages, most women rely on TBAs where they cannot afford the cost of professional services. Poverty is a key factor in limiting access to skilled birth attendants (DFID, 2005). Singh *et al.,* (2012) in their study found that economic status was an important significant determinant in the utilization of safe delivery. Adolescents from richer and richest wealth quantiles were more likely to use safe delivery compared to those from poorest wealth quantiles. This was also found to be the case in a study by Okonofua *et al.,* (2010), where lack of access to SBAs especially in Northern Nigeria was due to high rates of poverty. Pathak (2010) found that use of SBAs remained considerably lower among poor mothers relative to their non-poor counterparts. Mother's occupation played an important role in service utilization. Women who are working and earning money may be able to save and decide to spend their savings on a facility delivery under skilled care (Gabrysch and Campbell, 2009).

2.3.4. Institutional Characteristics influencing utilization of SBAs

The geographical location of services has a direct influence on skilled attendance for several reasons. The distance required to be travelled, availability of affordable transport and the condition of the roads influences the decision to attend a service at a health facility (Lunan *et al.,* 2010). Ratsma and Malongo (2009) in their study found that approximately 74% of maternal deaths could be prevented if all women had access to services which would prevent or treat such complications associated with pregnancy and child birth. It is therefore clear that access to and provision of maternal health services are

key determinants of maternal health (Amnesty International, 2009). The further a patient lives from a health facility, the less likely they are able to utilize the services (Geubbels, 2006). Moore *et al.,* (2002), in their study identified one of the barriers to use of skilled attendance as distance, physical proximity of facility or care source. This was widely stated as a motivator when considering use of skilled care. The ‘‘preferred’’ care source was often the closest care source.

In the African context, the principle impediments to accessibility are transport and cost. Narayan *et al.,* (2000), found that distance and travel was the most single obstacle to the utilization of delivery care services. There is evidence that access to skilled assistance can reduce maternal morbidity and mortality and improve pregnancy outcomes (Fenta, 2005). In the provision of skilled care, the importance of a functioning health system cannot be overemphasized in terms of need for an enabling environment. The outreach and the organization of the health system are critical to the success of the strategy for the provision of skilled attendants. Health policies that support the work of the health care workers, the standards and protocols that define their work and the arrangements for ensuring that the required supplies of essential medicines and equipment are available are equally important (WHO, 2004).

A functioning health system also requires suitable buildings, enough staff, the right mix of professional skills and satisfactory terms of employment. In addition, there needs to be in place a referral system and effective monitoring, supervision and training of staff. All

these factors need to be in place in order to ensure that there is a strategy in place for the provision of skilled attendance.

2.4 Summary of Literature Review

Maternal and child health care utilization is essential for further improvement of maternal and child health. In particular, skilled attendance at delivery is an important intervention for reducing maternal deaths. Lack of enabling environment, accessibility of services, demographic characteristics, socio-cultural practices and economic factors have been identified as some of the factors that hinder utilization of maternal health services. Majority of studies have been based on maternal health services in general however there are no sufficient studies on utilization of skilled attendance at birth as well as factors that influence their utilization in Kenya in most regions in general and Central division in Kajiado County in particular. This study therefore, aimed to address this gap by attempting to explore the factors that were assumed to be barriers to the utilization of skilled attendance at birth.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Introduction

This chapter describes the research methodology and the instruments used to conduct the study. It elaborates details related to the study design, dependent and independent variables, study area, target population, sampling technique and sample size, construction and research instruments, pre-testing, data collection techniques, data analysis and ethical clearance. The findings of this research are founded on this framework.

3.2 Research Design

The study adopted a descriptive cross sectional design. This design was chosen because it can study a large number at a little cost within a short period of time. It also enabled the researcher to study the respondents while in their natural environment.

3.3 Variables

3.3.1 Dependent variable

The dependent variable of this study was utilization of skilled birth attendants (attended to by SBA or not). A woman was considered to have utilized a skilled birth attendant if she delivered at a health facility.

3.3.2 Independent variables

The independent variables of this study included demographic characteristics (age, education level, mother characteristics (i.e. parity, birth interval, births in past five years, age of last child) marital status and residence; socio-cultural practices (norms, traditions

and religion), economic factors (income and occupation) and institutional factors (availability, accessibility, acceptability and enabling environment).

3.4 Study Area

3.4.1 Location of study area

The study was carried out in Central Division in Kajiado County. The County borders the Republic of Tanzania to the Southwest, Taita Taveta County to the Southeast,Machakos and Makueni Cponties to the East, Nairobi County to the Northeast, Kiambu County to the North and Narok County to the West. It is divided into five administrative subcounties namely: Kajiado Central, Kajiado North, Loitokitok, Isinya and Mashuuru (Kajiado County Budget Implementation Review Report, 2013). The division has an area of 2925.4km², a population of 59,632 and an average population density of 20 per Km² (KNBS, 2012). It is administratively divided into 13 locations which include Elangata Wuas, Enkaroni, Enkorira, Ildamat, Kikuro, Kilonito, Loodokilani, Nkoile, Olbelibel, Olontulungum, Sajiloni, Township and Torosei. The division has sixteen (16) health facilities, twelve (12) of which are government owned while four (4) are owned by faith based organizations. Of these facilities, one is the Kajiado District Hospital, two are health centres and the remaining are dispensaries. Only three facilities offered MCH services though at the time of this study some dispensaries were being upgraded to be able to offer these services. The main inhabitants are the Maasai and their main livelihood area is livestock keeping. There are 16,191 women of reproductive age in the division (Kajiado District Medical Records Office, 2012). Rift valley province, now divided into several counties, Kajiado County being one of them and where the study division is situated, had a large number of births (66.3%) taking place at home (KDHS

2008/09). This means that only 33.7% of births were delivered by a skilled provider. The percentage of deliveries assisted by SBAs in Kajiado Central Sub County was 28% (Kajiado District Medical Records Office) even lower than that of the entire region (33.7%), formerly Rift valley province thus necessitating the need to carry out this study.

MAP SHOWING KAJIADO COUNTY

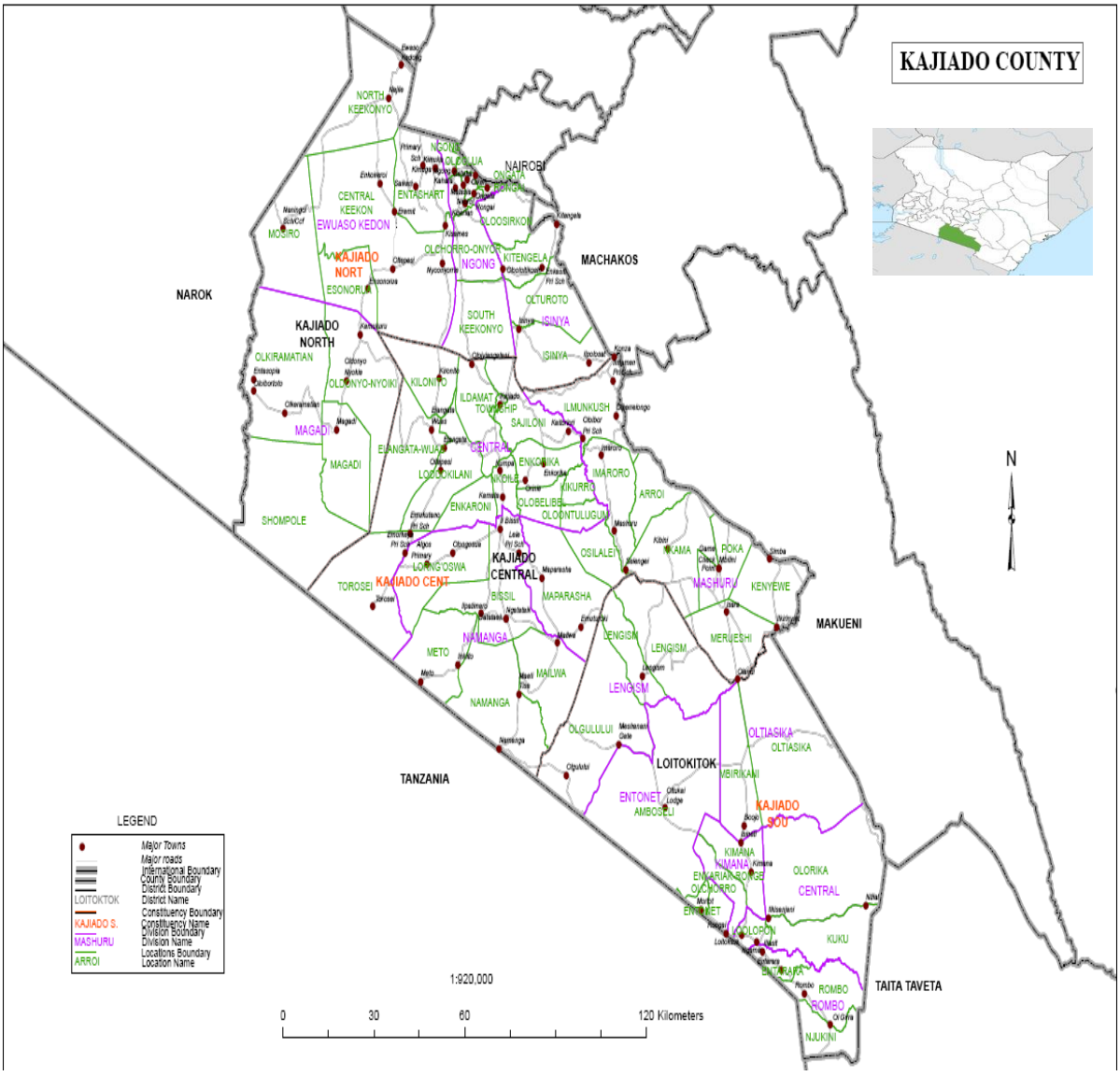


Figure 3.1 Map showing study area

3.5 Target population

3.5.1 Study population

The study population comprised of women of reproductive age, FGD participants and Key informants; in Central division of Kajiado County.

3.5.2 Sample population

The sample population comprised of 324 out of a possible 332 women of reproductive age living in Central division in Kajiado County who qualified for inclusion into the study. The response rate was 98% (324).

3.6 Inclusion criteria and exclusion criteria

3.6.1 Inclusion criteria

The study subjects who were included for the study were:

i. Women of reproductive age living in Central division who had a child aged one year and below
ii. Women of reproductive age who had lived in Central division for a minimum of one and a half years
iii. Women who were willing to participate in the study by signing the consent form

3.6.2 Exclusion Criteria

The subjects who were excluded from the study were:

i. Women who were critically sick (bedridden) or those who were mentally handicapped were not recruited for the study.

3.7 Sampling Technique and Sample size determination

3.7.1 Sampling Technique

The study division was purposively selected. Six locations were selected randomly using the lottery method. Each of the location was assigned a unique number which were placed in a bowl and mixed thoroughly. The researcher picked six numbers from the bowl and the locations having the selected numbers were included in the study. In each location, a sub location was also randomly selected using the same method as was done in the locations. The Study respondents were drawn from the sampled sub locations. A total of 324 women were recruited into the study using systematic sampling of households. The sampling distribution was based on the probability proportionate to size (PPS). K^{th} interval was calculated based on the strength of the study population within a given sub-location. K was 5. The first respondent was identified randomly.

Table 3.1 Sample distribution based on probability proportionate to size

Location	**Sub-location**	**Households**	**No. Required**	**K**
Sajiloni	Inkiwanchani	127	23	5
Ildamat	Olkiloriti	275	50	5
Elangata Wuas	Elangata Wuas	373	68	5
Kikuro	Kikuro	217	40	5
Kilonito	Kilonito	341	62	5
Township	Hospital	489	89	5
Total		1822	332	

3.7.2 Sample Size Determination

The sample size was calculated using Fisher *et al.,'s* (1998) method of sample size determination, with a 95% confidence interval and a sampling error of 5%.

The formula n= (Z^2pq)/d^2 where:

n is the sample size

Z is the corresponding value from the normal distribution for the desired confidence (in this case 95%) = 1.96

p is the proportion in the target population estimated to have a particular characteristic in this case 28% of deliveries were assisted by SBAs in Kajiado district

q = 1-p

d is the degree of accuracy desired set at 0.05 level

Therefore calculating the sample size using the formula above gives:

n = {1.96^2(0.28) (1-0.28)}/0.05^2

n =310

The sample size was adjusted by 7% to take care of non-response cases and incomplete questionnaires. This gave a sample size of 332 respondents.

3.8 Construction and Research instruments

This study applied both quantitative tools such as questionnaires and qualitative tools such as key informant interviews and Focus group discussion guides to collect data from the respondents. Construction of research instruments was based on the study objectives, literature review and study variables.

3.8.1 Household questionnaires

Data was collected using semi structured questionnaires with both open and closed ended questions. Individual interviews were conducted with women of reproductive age who had children aged 1 year and below.

The questionnaire was designed to get information on the following:

- Demographics- age, education level, marital status, residence
- Economic factors-income and occupation
- Socio-cultural practices that influence utilization- norms, traditions, religion
- Institutional characteristics influencing utilization- availability of health facilities, distance to the facilities
- Questions were also asked on place of delivery, assistance at delivery, preferred assistance in future, birth preparedness, knowledge of danger signs and service satisfaction

3.8.2 Focus Group Discussions

Focus group discussion guide was developed for the mothers, the SBAs, the TBAs and the men. It was used to collect data regarding the socio-cultural practices performed during delivery, the issues of enabling environment, availability, accessibility of services and the reasons why particular delivery assistants were preferred over the other were also explored. A total of seven FGDs were conducted each consisting of six (6) to ten (10) participants.

3.8.3 Key Informant Interviews

KIIs were constructed for the in charges of the maternity wing for the various health facilities, opinion leaders and community health strategy committee. The tool was designed to collect data on the factors that influenced the choice of delivery assistants among women, socio-cultural practices in the community during delivery and functionality of health facilities, problems women experienced during delivery and strategies to employ to ensure skilled delivery by women.

3.9 Pre-test

The research instruments were pretested in a similar population in Isinya division to test for clarity, validity and reliability of the questions after which the tool was revised accordingly and finalized for use.

3.10 Validity and reliability

3.10.1 Validity

Pre-testing of the instruments was carried out before the actual data was collected in order to appraise the instruments and check their feasibility in collecting the right information. This helped to ensure that the questions were clear to the respondents, and acceptable.

3.10.2 Reliability

Reliability of the data collection tools was established during the pre-test in order to check the consistency of responses provided by the respondents. Research assistants were trained on how to administer the questionnaires.

3.11 Data collection techniques

3.11.1 Questionnaires

A semi structured questionnaire was used to collect data from the mothers enrolled for the study in the division. A total of 324 women out of a possible 332 were interviewed. The women were selected through systematic sampling of households. The research assistants had a leading question that helped them to identify whether the sampled household had the characteristic of interest. In cases where they did not get the characteristic of interest, they used replacement method.

3.11.2 Focus Group Discussion

FGDs were held with the mothers, SBAs, the TBAs, and the men whose spouses were in the age bracket of (15-49 years). SBAs and TBAs were recruited into the study through convenience sampling. The researcher guided the FGDs so that other participants did not dominate the discussions as this would have created a bias. The discussions ran for 45 minutes. The research assistants helped by taking notes on key issues that were coming out during the discussions and also offered other assistance that was deemed necessary. A tape recorder was used to record the information for reference especially on issues which

were not coming out clearly during note taking. The participants were informed about the use of a tape recorder before the study began.

3.11.3 Key Informant Interviews

KIIs were conducted with the nurses in charge of the maternity division in the health facilities, opinion leaders and community health strategy committee members. They were recruited through convenience sampling

3.12 Data Management and Analysis

3.12.1 Quantitative data

The raw data was cleaned, re-coded and entered into SPSS database by the researcher. The researcher kept running statistics to ensure there were no outliers in the data entry process. Descriptive statistics such as frequencies and percentages were used to organize and summarize quantitative variables. Chi square test was used to test the association between categorical variables where a P value of < 0.05 was considered significant. Binary logistic regression was used to identify the independent predictors of utilization of SBA with odds ratio of 95% confidence interval. Data was analyzed using SPSS software version 16. The results were presented in tables and pie charts.

3.12.2 Qualitative Data

Qualitative data was transcribed and analyzed thematically.

3.13 Logistical and Ethical consideration

Approval of the study was obtained from Kenyatta University Graduate School. Ethical clearance to conduct the research was obtained from Kenyatta University Ethical Review Committee. The ethical clearance reference number was KU/R/COMM/51/131. Permit to carry out the research was obtained from National Commission of Science, Technology and Innovation (NACOSTI) of the Ministry of Higher Education Science and Technology (MOHEST). The research permit number was NCST/RCD/12A/013/78. Informed consent was obtained from the study participants before the study commenced and they were assured of privacy and confidentiality of the information they gave.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the results of this study. The aim of the study was to examine the utilization of skilled birth attendants among women of reproductive age in Central division in Kajiado County. The study was based on the following objectives; to determine factors (demographic, socio-cultural, economic and institutional) influencing the utilization of skilled birth attendants among women of reproductive age in Central division, Kajiado County.

4.2 Socio-Demographic Characteristics of respondents

The socio-demographic characteristics of the respondents are summarized in Table 4.1. Most of the respondents, 32.7% (106) were aged between 25-29 years while the least number of respondents 4.0% (13) were 40-49 years old. With regard to education, a high percentage 39.8% (129) of respondents had no education at all while only 4.3% (14) had attained post secondary education. Most of the respondents, 39.8% (129) reported that they had given birth to 2-3 children with 29.6% (96) of respondents reporting having one child. Majority of respondents, 78.7% (255) were married followed by those who were single at 18.2% (59). Those who were widowed were 2.8% (9) with the least being separated at 0.3% (1). Of those who were married, majority, 77.3% (197) were in monogamous marriages while 22.7% (58) were in polygamous type of marriage. With regard to residence, majority of the respondents, 67.3% (218) lived in rural areas while only 32.7% (106) lived in the Peri-urban areas. All the respondents interviewed subscribed to some form of religion. Majority 85.8% (278) of the respondents were

Christians while some 7.4% (24) practiced traditional African religion with a few 6.8% (22) being Muslims. The average family income of most respondents 42.6% (138) was less than Kenya shillings 5,000. A few 19.1% (62) of the respondents had an average monthly family income of above Kenya shillings 10,000 with the remaining 38.3% (124) having an average monthly income of between Kenya shillings 5,000-10,000. Majority 55.6% (180) of the respondents were house wives followed by those who were self employed 13.6% (44). Those who were in formal employment were 10.5% (34) with the least 10.2% (33) falling under those who had no occupation and pastoralists (10.2%).

Table 4.1 Socio-demographic characteristics of respondents

Characteristic	Category	Frequency (n)	Percentage (%)
Age	15-19	30	9.3
	20-24	73	22.5
	25-29	106	32.7
	30-34	55	17.0
	35-39	47	14.5
	40-49	13	4.0
Education	No formal education	129	39.8
	Primary	105	32.4
	Secondary	76	23.5
	Post secondary	14	4.3
Parity	One	96	29.6
	Two-three	129	39.8
	Four and above	99	30.6
Marital status	Single	59	18.2
	Married	255	78.7
	Widowed	9	2.8
	Separated	1	0.3
Type of marriage n=255	Monogamous	197	77.3
	Polygamous	58	22.7
Residence	Peri-urban	106	32.7
	Rural	218	67.3
Religion	Christianity	278	85.8
	Muslims	22	6.8
	Traditional African	24	7.4
Income	Less than Kshs. 5,000	138	42.6
	Kshs. 5,000-10,000	124	38.3
	Above Kshs. 10,000	62	19.1
Occupation	House wife	180	55.6
	Formal Employment	34	10.5
	Self Employed	44	13.6
	Pastoralist	33	10.2
	No occupation	33	10.2

4.3 Utilization of Skilled Birth Attendants

4.3.1 Place of Delivery

Out of the 324 women interviewed during this study, Majority, 58% (188) reported that they delivered at home without skilled birth attendants while 42% (136) reported that they delivered at a health facility. The women who delivered at a health facility were considered to have delivered by a skilled birth attendant. Figure 4.1 presents the proportion of women by place of delivery.

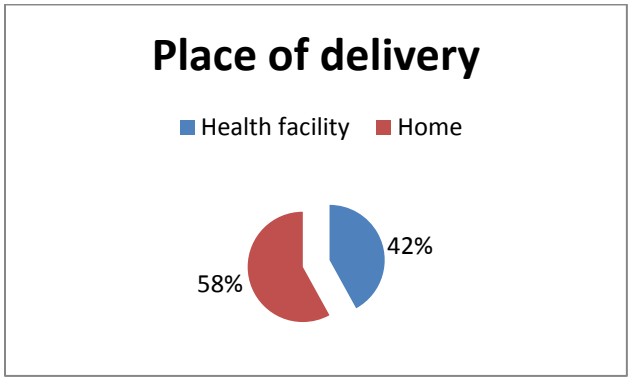


Figure 4.1 Proportion of women by place of delivery

4.3.2 Assistance during Delivery

Of the respondents who delivered at home, Majority, 84% (158) reported that at the time of the delivery, they were assisted by traditional birth attendants, 9% (16) reported that they had assisted by close relatives/friends, 4% (8) were assisted by CHEWs while 3% (6) were assisted of trained birth attendants (TTBA) as presented in Figure 4.2.

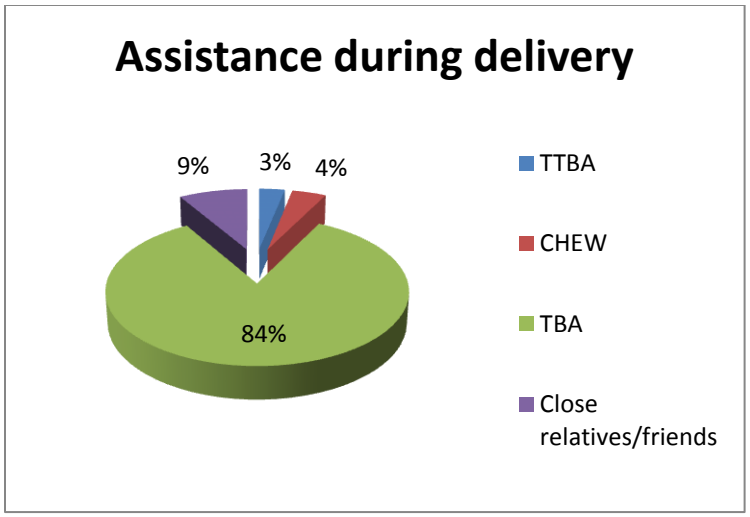


Figure 4.2 Proportion of women according to their delivery assistants

4.4 Demographic factors influencing utilization of SBA

The demographic factors were divided into two parts and reported as demographic and mother factors as follows.

Demographic factors

Most, (47.9%) of women aged 20-24 years were utilizing SBAs more than those who were younger, (33.3%) or older, (46.2%) than them. Women who were below 20 years did not use SBAs more nor did women who were above 24 years. The age of the respondents was not significantly associated with utilization of SBAs (χ^2=3.300, df=5, P=0.654).

On education level, majority, (81.1%) of the respondents who had attained secondary education and above tended to deliver with skilled birth attendants than those who had no education, (17.1%). The level of education among respondents was thus found to be

significantly associated with utilization of skilled birth attendants (χ^2= 89.859, df = 2, P<0.001). Husband's level of education was also significantly associated with utilization (χ^2=88.769, df=2, P<0.001).

Majority, (86.8%) of the respondents who lived in Peri-urban areas utilized the services of skilled birth attendants more than those who lived in the rural areas, (20.2%). Respondent's residence was found to be significantly associated with utilization of skilled birth attendants (χ^2=129.920, df=1, P<0.001). Majority (52.2%) of the respondents who used SBA services were single while only 39.2% of those who were married utilized the services of SBAs. However, most (42.6%) of the respondents who were in monogamous marriages delivered under skilled care than those who were in polygamous marriages (27.6%).The marital status of the respondents was not statistically significant and therefore not associated with SBA utilization, (χ^2 =3.744, df=1, P=0.053). The type of marriage was found to be statistically significant (χ^2=4.260, df=1, P=0.039).Table 4.2 shows the demographic factors that influenced utilization of SBAs.

Table 4.2 Demographic factors influencing Utilization of SBAs

Variables	Category	Place of Delivery		Chi Square
		Health facility n (%)	**Home n (%)**	$\chi^2 = 3.300$ df = 5 P = 0.654
Age	15-19	10 (33.3%)	20 (66.7%)	
	20-24	35 (47.9%)	38 (52.1%)	
	25-29	47 (44.3%)	59 (55.7%)	
	30-34	21 (38.2%)	34 (61.8%)	
	35-39	17 (36.2%)	30 (63.8%)	
	40-49	6 (46.2%)	7 (53.8%)	
Level of education	No formal education	22 (17.1%)	107 (82.9%)	$\chi^2 = 89.859$ df = 2 P <0.001
	Primary	41(39.0%)	64 (61.0%)	
	Secondary and above	73 (81.8%)	17 (18.9%)	
Husband's level of education	No formal education	13 (11.1%)	104 (88.9%)	$\chi^2 = 88.769$ df = 2 P<0.001
	Primary	15 (36.6%)	26 (63.4%)	
	Secondary and above	72 (74.2%)	25 (25.8%)	
Residence	Peri-urban	92 (86.8%)	14 (13.2%)	χ^2=129.920 df =1 P <0.001
	Rural	44 (20.2%)	174 (79.8%)	
Marital status	Single	36 (52.2%)	33 (47.8%)	χ^2 =3.744 df = 1 P = 0.053
	Married	100 (39.2%)	155 (60.8%)	
Type of marriage (n=255)	Monogamous	84 (42.6%)	113 (57.4%)	$\chi^2 = 4.260$ df = 1 P = 0.039
	Polygamous	16 (27.6%)	42 (72.4%)	

Mother factors

The respondents who had given birth to more than three children (24.2%) did not deliver with SBAs as much as their counterparts who had given birth to one child (59.4%). Parity, (the number of children ever born) had a significant association with utilization of skilled birth attendants (χ^2=24.738, df=2, P<0.001).

Majority (50.8%) of the respondents whose children were aged 3 months and below delivered more with SBAs than their counterparts whose children were four months and above. The age of the last child was not statistically associated with utilization of skilled birth attendants (χ^2=7.773, df=3, P=0.051).

Majority (51.0%) of respondents who had given birth once in the past five years used skilled care more during delivery than those who had given birth more than once in the past five years (25.9%), (χ^2=19.262, df=1, P<0.001).

Most (39.5%) of the respondents who had a birth interval of >24 months used skilled birth attendants more than those who had birth interval of <24 months (18.5%). The birth interval between the last child and the previous child was found to be statistically significant (χ^2=24.535, df=2, P<0.001). This is shown in Table 4.3.

Table 4.3: Mother Characteristics influencing Utilization of SBAs

Variable	**Category**	**Place of Delivery**		**Chi Square**
		Health facility n (%)	**Home n (%)**	
Parity	One	57 (59.4%)	39 (40.6%)	χ^2 = 24.738 df = 2 P< 0.001
	Two-three	55 (42.6%)	74 (57.4%)	
	Four and above	24 (24.2%)	75 (75.8%)	
Age of last child	3 months and below	31 (50.8%)	30 (49.2%)	χ^2 = 7.773 df = 3 P = 0.051
	4 to 6 months	49 (48.5%)	52 (51.5%)	
	7 to 9 moths	25 (32.1%)	53 (67.9%)	
	10 to 12 months	31 (36.9%)	53 (63.1%)	
Births in the past five years	Once	106 (51.0%)	102 (49.0%)	χ^2= 19.262 df = 1 P<0.001
	Two and above	30 (25.9%)	86 (74.1%)	
Birth interval	< 24 months	10 (18.5%)	44 (81.5%)	χ^2 = 24.535 df= 2 P<0.001
	>24 months	68 (39.5%)	104 (60.5%)	
	None	58 (59.2%)	40 (40.8%)	

4.5 Socio-cultural factors influencing utilization of SBAs

Respondents reported that they had a number of traditional practices that influenced their choice of delivery place and assistance as shown in Table 4.4.

Table 4.4 Traditional practices performed during delivery

Practice	Response	Frequency (n)	Percentage (%)
Use of traditional birthing position	Yes	147	45.4
	No	136	42.0
	Don't know	41	12.7
Pre and post delivery massage	Yes	157	48.5
	No	126	38.9
	Don't know	41	12.7
Use of hot water after delivery	Yes	110	34
	No	173	53.4
	Don't know	41	12.7
Use of herbal medicine	Yes	101	31.2
	No	182	56.2
	Don't know	41	12.7
Drinking of sheep oil after delivery	Yes	13	4.0
	No	270	83.3
	Don't know	41	12.7

n = 324

The respondents who practiced Christianity (41.0%) did not use SBAs more than those who practiced other religions (47.8%). Religion did not influence utilization of SBAs and therefore was not statistically significant (χ^2=0.753, df=1, P=0.385) as shown in Table 4.5.

Table 4.5: Religion and Utilization of SBAs

Variable		**Place of Delivery**		**Chi Square**
		Health Facility n (%)	**Home n (%)**	χ^2= 0.753 df=1 P=0.385
Religion	Christianity	114 (41.0%)	164 (59.0%)	
	Other religions	22 (47.8%)	24 (52.2%)	

4.6 Economic factors influencing utilization of SBAs

Majority (73.5%) of the respondents who were formally employed were using SBAs more than those who had no occupation (51.5%). In addition, most (40.2%) of the respondents whose husbands were in formal employment delivered by SBAs more compared to their counterparts whose husbands were self employed (23.5%).The occupation of the respondents and the partner's occupation respectively were found to be statistically significant (χ^2 =19.546, df=4, P = 0.001, χ^2=13.913, df=2, P=0.001).

Majority (77.4%) of the respondents who had a monthly income of above Kshs. 10,000 used SBAs more than those who had a monthly income of less than Kshs. 5,000 (25.4%). This was also echoed by FGD participants, *"sometimes we deliver at home not because we want to, but because we don't even have money to use for transport nor even for delivering".* The respondents' monthly income was significant (χ^2=47.647, df=2, P<0.001) as presented in Table 4.6.

Table 4.6: Economic factors influencing utilization of SBAs

Variable		Place of Delivery		Chi Square
		Health Facility n (%)	**Home n (%)**	
Occupation	House wife	70 (38.9%)	110 (61.1%)	χ^2 = 19.546 df=4 P=0.001
	Formal employment	25 (73.5%)	9 (26.5%)	
	Self employment	14 (31.8%)	30 (68.2%)	
	Pastoralists	10(30.3%)	23(69.7%)	
	No occupation	17 (51.5%)	16 (48.5%)	
Husband's occupation	Formal employment	43 (40.2%)	64 (59.8%)	χ^2 = 13.913 df=2 P=0.001
	Self employment	21 (25.3%)	62 (74.7%)	
	Pastoralists	36(55.4%)	29(44.6%)	
Monthly income	Less than 5000	35 (25.4%)	103 (74.6%)	χ^2 = 47.647 df= 2 P<0.001
	5000-10000	53 (42.7%)	71 (57.3%)	
	Above 10000	48 (77.4%)	14 (22.6%)	

4.7 Institutional factors influencing utilization of SBAs

Majority (56.7%) of the respondents who were charged between Kshs. 2000-5000 utilized skilled deliveries compared to their counterparts who were charged less than Kshs. 2000 (28.4%). Majority (71.6%) of the respondents who were charged less than Kshs. 2000 instead opted to deliver by unskilled birth attendants. The cost of delivery was significantly associated with utilization of skilled birth attendants (χ^2=25.560, df=2, P<0.001).

Most (33.9%) of the respondents who spent less than one hour to reach their place of delivery used the services of skilled birth attendants than their counterparts (10.6%) who did not deliver by SBAs but spent above one hour to reach their place of delivery. An

FGD participant had this to say, *"the health facilities in this area are functional, but the problem is they are very far from our homes, so we do strain a lot to get to the facility".* Similar sentiments were made by the key informants. *"Distance to hospital is one of the factors that influences the choice of a delivery assistant making most women to seek assistance from the nearest person"* KII. The time taken to reach place of delivery was found to be significantly associated with utilization of skilled birth attendants ($\chi^{2=}$50.683, df=1, P<0.001). The issue of availability of transport came out during KIIs. *"Roads are poor and no vehicles to take women to the hospital during delivery or even in case of more complicated conditions encountered during delivery"* KII. The issue on enabling environment came out strongly during FGDs,*" there are not enough doctors and nurses to assist women during delivery, on the issue of facilities most of them should be well set up in terms of equipment, this would help to minimize referrals to KDH,"* nurse –KDH. A woman discussant said *"there are not enough drugs in KDH but the equipment were good,"* woman discussant. Similar sentiments were echoed by other women during an FGD with them. *"the hospital is not well taken care of in terms of cleanliness, it is dirty and also there is only one doctor/nurse"* woman discussant. Table 4.7 shows some institutional factors influencing utilization of SBAs.

Table 4.7: Institutional factors influencing utilization of SBAs

Variable		Place of delivery		Chi Square
		Health facility n (%)	Home n (%)	
Cost of delivery service	Less than 2000	46(28.4%)	116 (71.6%)	χ^2=25.560 df=2 P<0.001
	2000-5000	85(56.7%)	65(43.3%)	
	Don't know	5(41.7%)	7(58.3%)	
Accessibility	Less than 1 hour	94 (33.9%)	183 (66.1%)	χ^2= 50.683 df=1 P<0.001
	1 hour and above	42 (89.4%)	5(10.6%)	

4.8 Independent Predictors of Utilization of SBAs

Binary logistic regression was used to identify the independent predictors of utilization of skilled birth attendants. The strongest independent predictors of utilization of skilled birth attendants are residence OR=0.038 (0.020-0.074), p<0.001, parity OR = 0.219 (0.118-0.405), p<0.001, births in past five years OR = 0.336 (0.204-0.767), p< 0.001, occupation OR = 0.383 (0.138-1.064), p=0.002 and cost of delivery OR=0.546(0.166-1.799). Others were husband's occupation OR=1.848 (0.991-3.446), p=0.001, monthly income OR=4.593 (2.296-9.190), p<0.001, husband's education OR=4.992 (2.285-10.907), p<0.001 and respondent's education OR= 6.703 (3.473-12.937), p<0.001. This is shown in Table 4.8.

Table 4.8 Independent predictors of utilization of skilled birth attendants

Characteristic	OR(95% CI)	P value
Respondent education (ref=high education)		**0.001**
No formal education	20.885(10.378-42.030)	
Primary	6.703 (3.473-12.937)	
Husband's education (ref=high education)		**0.001**
No formal education	23.040 (11.054-48.024)	
Primary	4.992 (2.285-10.907)	
Parity (ref=high number of children)		**0.001**
One	0.219 (0.118-0.405)	
Two-three	0.431 (0.242-0.767)	
Births in past five years (high births)		**0.001**
Once	0.336(0.204-0.552)	
Respondent occupation (ref=no occupation)		**0.002**
House wives	1.670 (0.792-3.519)	
Formal employment	0.383 (0.138-1.064)	
Self employed	2.277 (0.897-5.782)	
Pastoralists	2.444 (0.891-6.700)	
Husband occupation (ref=pastoralists)		**0.001**
Formal employment	1.848(0.991-3.446)	
Self employed	3.665 (1.828-7.349)	
Monthly income (ref=high income)		**0.001**
Less than 5,000	10.090 (4.970-20.485)	
5,000-10,000	4.593 (2.296-9.190)	
Cost of delivery (ref=Don't know)		**0.001**
Less than Kshs. 2000	1.801 (0.544-5.965)	
Kshs. 2001-5000	0.546 (0.166-1.799)	
Accessibility (ref=above 1 hour)		**0.001**
Less than 1 hour	6.353 (6.261-42.710)	
Residence (ref=rural)		**0.001**
Peri -urban	0.038 (0.020-0.074)	

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the results of the study, summarizes the findings of the study, gives conclusions and recommendations based on the findings of the study and suggests areas for further research.

This study was to assess the utilization of skilled birth attendants among women. The main objective of the study was to determine factors (demographic, socio-cultural, economic and institutional characteristics) that influenced utilization of skilled birth attendants among women in Central division in Kajiado County.

5.2 Discussion

5.2.1 Utilization of SBAs in Central division in Kajiado County

The findings of this study showed that the proportion of women who delivered in the health facility was 42%, thus considered to have delivered under the supervision of a skilled birth assistant. This estimates compares well with the national rates (44%) as observed in the KDHS (2008/09) but higher than the national coverage for rural areas (37%). The higher rate of utilization in the study area compared to the region may be because of the fact that that a higher percentage of study participants lived in Peri-urban areas where the hospitals were more accessible than in the rural areas where accessibility was a major hindrance to utilization. This could also be attributed to the fact that the

county referral hospital (Kajiado District Hospital) was situated in the study division. Almost all skilled deliveries in the study area occurred in a health facility. This was similar to a study done by Wanjira *et al* (2011), which found that majority of safe deliveries took place in health facilities. This therefore calls for a need to encourage women to deliver in health facilities where they can be attended by skilled personnel.

Some of the factors that were responsible for non utilization of SBAs for delivery included ; long distance to health facilities, unavailability of staff at health facilities, lack of money for transport/limited finances, unavailability of means of transport, lack of birth preparedness, fear of operations/misconceptions(I will be taken to theatre),cultural reasons (in Maasai land, girls are circumcised and therefore believe that a doctor can't handle a circumcised lady during delivery but a TBA can), lack of education/ignorance, availability of TBAs in the village and bad attitude towards SBAs.

5.2.2 Demographic factors influencing utilization of SBAs

In this study, age did not influence utilization of SBAs. Women who were younger 15-19 years did not use SBAs; neither did women who were aged above 24 years. This could be attributed to the fact that the younger mothers may not have been the ones who decided on where to deliver while the older mothers may have had deliveries outside the health facility and thus did not find reason to visit the facility for delivery. This finding was contrary to findings from a study done by Wanjira *et al* (2011), which found that younger mothers tended to use skilled delivery care services more than their older counterparts.

The study showed that education influenced utilization of SBAs. The respondents who were more educated or whose partners were more educated delivered with SBAs. This

could be attributed to the fact that these women understood that this was about their health and that of the unborn child and therefore had to make decisions to deliver with SBAs. Education helps women to develop greater confidence to make decisions regarding their health (Singh *et al.*, 2012). Educated women seek out higher quality services and also have greater ability to use health care inputs to improve their health. Maternal education contributes significantly to utilization of health facility delivery services. The results from this study therefore concur with other studies (Babalola & Fatusi, 2009, Garg *et al.*, 2010, Moore, *et al.*, 2011) that reported the same finding that the more a mother was educated, the more likely she was to deliver through a skilled birth attendant.

Further, the study findings indicate that single (never married) respondents utilized the services of SBAs more than their married counterparts. This result could be attributed to the fact that most of those who were single in this study were younger women who are able to make their own decisions without having to depend on other older people like parents or relatives, either for decision making or financial assistance with regard to place of delivery. These findings are in agreement with those of a similar study by Ochako *et al* (2011) which found that single women had higher autonomy and did not depend on other people for decision making than their married counterparts who depended on their husband's decision making.

This study found that women who had given birth to more than three children were less likely to use SBAs than those who had first births. This could be attributed to the fact that these women had had their previous births without SBAs and therefore did not find any reason to deliver with them since there previous births were equally successful. Also

those who had birth interval < 24 months did not use SBAs than their counterparts who had birth interval of > 24 months. This was consistent with results from a study by Singh *et al* (2012), who found that the probability of delivery under skilled care was less likely among women who had birth 2-3 and birth interval < 24 months than among women who had experienced their first child birth. The results from this study agree with results from other studies where parity was found to influence utilization of delivery care. Women with higher birth order utilize professional delivery care to a lesser extent than first births.

The respondent's resident influenced utilization of SBAs. Majority of births particularly in rural areas are still delivered at home without the assistance of a skilled birth attendant. This could be attributed to the fact that there were very few health facilities in the rural areas that offered maternal health services. It could also be attribute to the fact that the distance to the health facilities was long hence making it difficult for the women to use them. The lower utilization of skilled delivery care among rural women could be closely linked to the association of rural women with unfavourable socio-economic characteristics and the lack of availability of modern health care services (Kistiana, 2009). Garg *et al* (2010), in their study found that majority of births especially in the rural areas were delivered at home most of them without skilled assistance.

5.2.3 Socio-cultural practices influencing utilization of SBAs

This study found that religion did not influence utilization of skilled birth attendants; however respondents who practiced other religions utilized SBAs more than Christians. This could be attributed to the fact that this is a cosmopolitan community with majority of the inhabitants being the indigenous Maasai who have a respect for their cultural

norms and belief systems; and therefore it does not make a difference whether you are a Christian or you are in another religion. This result did not agree with the results of a study done by Singh *et al* (2012), who found that religion was a significant determinant in the utilization of safe delivery care. The role of traditional and cultural practices also contributed to the failure of women to use skilled birth attendants. Pre and post delivery massage was the most commonly cited traditional practice that made women to employ the services of TBAs. Other practices included the use of traditional birthing position, use of hot water after delivery, use of herbal medicine and drinking of sheep oil after delivery. This finding was similar to a study done by Carter *et al* (2010) who found out that pre and post delivery massage was commonly cited as a traditional practice that made women to seek the services of TBAs. Use of hot water after delivery and the use of herbal medicine were also found to be of significant importance when it came to seeking the services of TBAs (Carter *et al.*, 2010).

5.2.4 Economic factors influencing utilization of SBAs

In this study, respondents who had a monthly income of less than Kshs. 5000 did not use SBAs as much as those whose income was Kshs. 5000 and above. This could be attributed to the fact that the cost of delivery in the health facilities at that time was high and thus most people could not afford to pay. This result concurs with results from a study by Pathak (2010) who found that use of SBAs remained considerably lower among poor mothers relative to their non poor counterparts.

Occupation was significantly associated with utilization of SBAs. Women who were working and earning some money utilized the services of skilled birth attendants than

those who were not in any form of employment. This is probably because these women who were working were able to save some money in preparation towards their delivery. The results concur with results from other studies which showed that mother's occupation played an important role in service utilization. According to Gabrysch and Campbell (2009), women who are working and earning money are able to save and decide to spend their savings on facility delivery under skilled care. Economic status is therefore a significant determinant in the utilization of safe delivery care.

5.2.5 Institutional factors influencing utilization of SBAs

Time taken to place of delivery was significantly associated with utilization of SBAs. However the respondents who spent more than one hour were rated higher in utilization than those who spent less than one hour. This could be attributed to the fact that better facilities were located far away from the respondents and therefore it took longer for the respondents to get to those facilities. The issue of accessibility to the services came out strongly during FGDs. Participants argued that health facilities were far from their homes and therefore it took women a longer time to get to the facilities. This concurs with findings from a study by Geubbels (2006) who found that the further a patient lives from a health facility, the less likely they are able to utilize the services. Moore *et al* (2002), in their study identified one of the barriers to use of skilled attendance as distance, physical proximity of facility or care source. The 'preferred care source is always the closest care source. This was emphasized by an In-depth interviewee who reported that distance to the hospital was one of the factors that influenced the selection of delivery assistance making most women to seek assistance from the nearest person.

Availability of affordable transport and the condition of the roads influences the decision to attend a service at a health facility (Lunan *et al.,* 2009). This was echoed by participants during KIIs who reported that the roads were in poor state and that there were limited vehicles that offered transport especially to remote areas. An important determinant of utilization of health services in developing countries is accessibility. The scarcity of vehicles especially in the remote areas, cost of transport, poor road conditions and difficulty of walking for hours to the nearest health facility may pose problems for pregnant women. There is evidence that access to skilled assistance and well equipped health facilities during delivery can reduce maternal morbidity and mortality and improve pregnancy outcomes (Fenta, 2005).

The financial cost of service (fees), reduce women's use of maternal health services and keep millions of women from seeking care even when complications arise. Even when formal fees are low or non-existent; there may be informal fees that pose significant barriers to women's use of services. These may include cost of transportation, drugs, food or lodging for the women or family members who help care for her in hospital (Fenta, 2005). This study found that majority of those women who delivered at home with unskilled birth attendants were charged lower than their counterparts who delivered in the health facilities. This was echoed by sentiments from FGDs. Women deliver at home because they lack money for transport and also because at the hospital, the SBAs ask for more pay even in cases where a woman delivers before getting to the hospital and still decides to go for check up just to ensure that mother and baby are fine. "*Sometimes even when you deliver at home or along the way, and you still manage to reach the hospital, you are still asked to pay Kshs. 3000, yet they did not deliver you.*" woman discussant.

Another one further said "*this SBAs want to be bribed so that you are assisted quickly, without this you will be in problems especially at night, my husband was asked to give bribes so that I could be attended to when I went to deliver in Kajiado, this means if my husband did not have any money I would have not been attended to and maybe I would have died with my baby*".

A functioning health system is important in the provision of skilled care. This study found that there were in adequate staff at the health centres and that the dispensaries did not offer maternity services. In most health centres for example Sajiloni health centre, there was only one nurse responsible for the day to day running of the facility. Most of the health centres had inadequate equipment or no equipment at all for delivery. In one health centre, the supposed maternity cum delivery room did not even have beds for the mothers to use. There was lack of an enabling environment as was pointed out by FGD participants who said that there were inadequate doctors and nurses in the facilities, there were not enough drugs in most facilities and some facilities were not well kept in terms of cleanliness and also lacked equipment to be used during delivery process. When the equipment and man power are not available, then it is highly unlikely that women will employ the services of skilled birth attendants even if they were willing. The outreach and organization of the health system are critical to the success of the strategy for the provision of skilled attendants. It is important to ensure that required supplies of essential medicines and equipment are available (WHO, 2004). There is need for suitable buildings, enough staff and the right mix of professional skills. All these factors need to be in place in order to ensure that there is a strategy in place for the provision of skilled attendance.

5.3 Conclusions

The following conclusions are drawn from the findings of this study

1. The level of utilization of skilled birth attendants among the study population was low.
2. Demographic determinants of utilization were level of education, birth interval, births in the past five years and residence. Null hypothesis is therefore rejected.
3. Socio-cultural practices affected utilization of SBAs. Null hypothesis is rejected.
4. The key economic determinants of utilization were income and occupation. Null hypothesis is rejected.
5. Institutional characteristics were factors in utilization. Null hypothesis is rejected.

5.4 Recommendations

The following recommendations were made based on the study conclusions;

1. The local leaders should encourage universal education of the girl child so that they are able to make informed choices.
2. The MOH needs to carry out BCC at individual and community levels to address socio-cultural practices that are barriers to the uptake of SBA services.
3. The economic status of women should be improved in order to empower them economically. This can be done by the area leaders through introduction of income generating activities among women.

4. The county government should improve the infrastructure of the area especially those remote areas that are hard to reach due to poor roads.

5. Health care interventions should not only put emphasis on cost of delivery but also on access and availability of services especially in rural areas.

6. MOH should provide mobile health care clinics and outreaches for remote villages and those difficult to reach so as to address the issue of accessibility.

5.5 Suggestions for further research

1. Further research should be conducted to identify more socio-cultural factors that influence utilization of skilled birth attendants.

2. A study should be done to find out if the introduction of free maternity by the government has had any significant change on utilization of skilled birth attendants in the area.

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APPENDICES

Appendix 1: Informed Consent form for Interviews with Women

Hello! My name is _____, I am working with Consolate A. Okoth, a Master of Public Health (M & E) student of Kenyatta University. We are conducting a research study on determinants of utilization of skilled birth attendants among women in Central division in Kajiado. You are kindly requested to be included in the study whose main objective is to determine the factors that influence utilization of skilled birth attendants among women, the results of which will have the importance of improving maternal health services in the area. The interview will take about 45 minutes. No information concerning you as an individual will be passed to another individual or institution without your agreement. Your participation is voluntary and you have a right not to participate or to withdraw your participation. If you agree to the study, I will start asking you questions. This study has approval from Kenyatta University. "May I continue?" If Yes, continue interviewing

If No, thank and stop interviewing

For any enquiries concerning the interview, kindly contact Ms Consolate A. Okoth on 0720664957 or Dr. George Otieno on 0719506770, Dr. Eunice Njogu on 0722862052 or email the secretary of the ethical committee through kuerc.secretary@ku.ac.ke.

Sign_____

Name of interviewee_____

Sign or Thumb print_____ Date of Interview_____

Name of interviewer_____

Sign_____ Date of interview_____

Appendix 2: Questionnaire for Women

QUESTION	OPTION	SKIP	CODE
1. What is your age	a.15-19 b.20-24 c.25-29 d.30-34 e.35-39 f.40-44 g.45-49		1 2 3 4 5 6 7
2. Level of education	a. No education b. Primary incomplete c. Primary complete d. Secondary incomplete e. secondary complete f. Post secondary		1 2 3 4 5 6
3. Marital status	a. Single b. Married c. Widowed d. Separated e. Divorced	(If b or c go to 4)	1 2 3 4 5
4. If you are married, what type of marriage is it?	a. Monogamous b. Polygamous c. Others specify……		1 2 9
5. Husband's level of education	a. No education b. Primary incomplete c. Primary complete d. Secondary incomplete e. Secondary complete f. Post secondary		1 2 3 4 5 6
6. How many children do you have?	a. One b. Two to three c. Four to five		1 2 3

	d. Six and above		4
7. How old is your last child?	a. 3 months and below b. 4 to 6 months c. 7 to 9 months d. 10 to 12 months		1 2 3 4
8. How many times have you given birth in the past five years?	a. Once b. Two and above		1 2
9. What is the birth interval between your current child and the child before this one?	a. < 24 months b. > 24 months		1 2
10. Where do you live?	a.Peri- urban area b.Rural area		1 2
11. Which religion do you practice?	a. Christianity b. Islam c. Hinduism d. Traditional African Religion e. Other specify……		1 2 3 4 9
12. Does your community have any practices associated with delivery?	a. Yes b.No	If b, skip to Q. 15	1 2
13. What are some of the traditional practices in your community associated with delivery?	a. Use of traditional birthing position b. Pre and post delivery massage c. Use of hot water after delivery d. Use of herbal medicine e. Don't know f. Others specify…….		1 2 3 4 8 9
14. What are some of the cultural practices performed in your community during delivery?	(List practices)		

15. What religious beliefs may affect your choice of delivery assistance?			
16. What is your occupation?	a. House wife b. Maid servant c. Civil servant d. Merchant e. Student f. Farmer g. Others specify……..		1 2 3 4 5 6 9
17. What is your husband's occupation?	a. None b. Domestic servant c. Civil servant d. Merchant e. Student f. Farmer g. Other specify……		1 2 3 4 5 6 9
18. What is your average family income per month?	a. Less than KSh.2000 b. KSh. 2,001-5,000 c. KSh. 5,001-10,000 d. Above KSh. 10,000		1 2 3 4
19. What source of lighting do you use?	a. Electricity b. Solar energy		1 2

	c. Kerosene lamp d. Candles e. Other specify……..		3 4 9
20. What do you use as cooking fuel?	a. Gas b. Charcoal c. Kerosene d. Firewood e. Cow dung f. Other specify…….		1 2 3 4 5 9
21. What is the material of your dwelling floor	a. Tiles b. Cement c. Wood d. Mud/ cow dung smear		1 2 3 4
22. What is your source of drinking water?	a. Tap b. Rainwater c. Borehole d. Spring e. River f. Other specify……..		1 2 3 4 5 9
23. What type of toilet facility do you use?	a. None b. Water closet/pour flush c. VIP d. Other specify…….		1 2 3 9
24. To what extent would you	a. Strongly agree		1

agree with the following statements? a. Before I delivered, I planned for the person to deliver the baby	b. Agree c. Uncertain d. Disagree e. Strongly disagree		2 3 4 5
b. Before I delivered, I planned for complications during delivery.	a. Strongly agree b. Agree c. Uncertain d. Disagree e. Strongly disagree		1 2 3 4 5
c. Before delivery, I arranged for transport.	a. Strongly agree b. Agree c. Uncertain d. Disagree e. Strongly disagree		1 2 3 4 5
d. Before delivery, I arranged for money to use during the process	a. Strongly agree b. Agree c. Uncertain d. Disagree e. Strongly disagree		1 2 3 4 5
25. Where did you deliver your last baby?	a. Health facility b. Home c. Other specify……	(if b go to 26)	1 2 9
26. If you delivered at a health facility, who assisted your delivery?	a. SBA b. TTBA c. CHEW d. TBA e. Other specify……		1 2 3 4 9
27. If you delivered at home, who assisted your delivery?	a. SBA b. TTBA c. CHEW d. TBA e. Close relatives/friends f. Other specify…….		1 2 3 4 5 9
28. Why did you choose to deliver with the above mentioned person? (*probe for as many reasons as*	(List reasons)		

possible)			
29. Who decided who to assist your delivery?	a. Self b. Husband c. Both of us d. Mother e. Mother in law f. TTBA g. TBA h. CHEW i. Other specify…….		1 2 3 4 5 6 7 10 9
30. In your opinion, who is the best person to assist a woman during child birth?	a. SBA b. TTBA c. CHEW d. TBA e. Close relatives/friends f. Others specify……		1 2 3 4 5 9
31. Give reasons for your answer above (*probe for as many reasons as possible*)	(List reasons)		

32. Who would you prefer to assist for your next delivery?	a. SBA b. TTBA c. CHEW d. TBA e. Close relatives/friends f. Other specify……		1 2 3 4 5 9
33. If married, who would your husband prefer to assist for your next delivery?	a. SBA b. TTBA c. CHEW d. TBA e. Close relatives/friends f. Other specify……		1 2 3 4 5 9
34. What services were you offered during delivery by your delivery assistant?	(list services)		
35. To what extent were you satisfied with the services you received from your delivery attendant?	a. Very satisfied b. Satisfied c. Less satisfied d. Uncertain e. Not satisfied		1 2 3 4 5

36. To what extent do you agree with the following statements. a. Excessive bleeding(PPH) is a danger sign during delivery	a. Strongly agree b. Agree c. Uncertain d. Disagree e. Strongly disagree		1 2 3 4 5
b. Retained placenta is a danger sign during delivery	a. Strongly agree b. Agree c. Uncertain d. Disagree e. Strongly disagree		1 2 3 4 5
c. Obstructed labour/prolonged labour is a danger during delivery	a. Strongly agree b. Agree c. Uncertain d. Disagree e. Strongly disagree		1 2 3 4 5
d. Abnormal fetal positioning is a danger sign during delivery	a. Strongly agree b. Agree c. Uncertain d. Disagree e. Strongly disagree		1 2 3 4 5
e. Code around the child's neck is a danger sign during delivery	a. Strongly agree b. Agree c. Uncertain d. Disagree e. Strongly disagree		1 2 3 4 5
37. Who financially supported			

your last delivery?			
38. How much were you charged for delivery?	(…….)KES		
39. How long did it take you to reach where you delivered?	(…….) hrs. (…….) minutes		

Appendix 3: Informed Consent for Key Informant Interviews

Hello! My name is _____ , I am working with Consolate A. Okoth, a Master of Public Health (M & E) student of Kenyatta University. We are conducting a research study on determinants of utilization of skilled birth attendants among women in Central division in Kajiado. You are kindly requested to be included in the study whose main objective is to determine the factors that influence utilization of skilled birth attendants among women, the results of which will have the importance of improving maternal health services in the area. The interview will take about 20 minutes. No information concerning you as an individual will be passed to another individual or institution without your agreement. Your participation is voluntary and you have a right not to participate or to withdraw your participation. If you agree to the study, I will start asking you questions. This study has approval from Kenyatta University. "May I continue?"

If Yes, continue interviewing

If No, thank and stop interviewing

For any enquiries concerning the interview, kindly contact Ms Consolate A. Okoth on 0720664957 or Dr. George Otieno on 0719506770, Dr. Eunice Njogu on 0722862052 or email the secretary of the ethical committee through kuerc.secretary@ku.ac.ke.

Sign_____

Name of interviewee_____ Sign_____ Date of Interview_____

Name of interviewer_____ Sign_____ Date of interview_____

Appendix 4: Key Informant Interviews

1. In your opinion, whose assistance do majority of the women in this community seek during delivery? Why?

2. What are you doing to ensure that pregnant women in this community deliver under the assistance of a skilled birth attendant?

3. What are the factors influencing the selection of delivery assistance? Why?

4. What kinds of problems do mothers experience here during delivery?

5. It has been found that majority of women use skilled care during antenatal care than during delivery. Why do you think this is so?

6. In your opinion, what are the factors that may hinder mothers from accessing skilled delivery care?

7. What are some of the religious, traditional and cultural practices of this community during delivery?

8. How do the religious, traditional and cultural practices influence the choice of who to assist a woman during delivery?

9. Do you think that delivery assistants are well equipped to handle deliveries among women in this community? If yes why? If no why not?

10. In your view, what is the attitude of women towards delivering with SBAs?

11. In your view, what is the attitude of women towards delivering with TBAs

12. What can you say about the health facilities in this area in terms of being functional? Give reasons to support your answer

13. What are you doing to ensure that more women deliver with SBAs?

14. What do you think can be done to ensure that mothers deliver with skilled birth attendants?

Appendix 5: Informed Consent for FGDs

Hello! My name is _____ . My colleagues are _____ . We are from Kenyatta University and are conducting a study on determinants of utilization of SBAs among women in Central division, Kajiado.

After we conduct some brief introduction, we will be talking about several issues. We are interested in understanding the issues of delivery and birth assistance and factors influencing utilization of delivery care services. We hope that your answers to the questions will be important to understand the situation and thus help to improve maternal health care in this area. The discussion will take about 40-60 minutes. Please be assured that any information collected here is strictly confidential. The staff of the research and other participants will not directly share the information in a way that would reveal an individual's personal identity. You have the right to refuse to answer any questions and to end the discussion if you find it necessary to do so. For the sake of accuracy and efficiency, we will take notes and tape record this session, unless any one has objections.

Would you be willing to participate in the discussion? If yes, proceed, if no, thank and stop the discussion.

For any enquiries concerning the interview, kindly contact Ms Consolate A. Okoth on 0720664957 or Dr. George Otieno on 0719506770, Dr. Eunice Njogu on 0722862052 or email the secretary of the ethical committee through kuerc.secretary@ku.ac.ke.

Name of moderator _____ Sign _____ Date_____ Time_____

(Signature of the moderator certifies that consent has been obtained verbally).

Appendix 6: Focussed Group Discussion Guide

1. a. Generally, what are the common places where women go for assistance during delivery in this area?

b. Who assists the women in this area during delivery? Why?

2. a.Who is the decision maker in the family on who to assist during delivery?

b. Who do you think is the best person to assist a woman during delivery? Why?

c. What are their advantages and disadvantages?

3. Why do you think sometimes women deliver their babies at home?

4. What are the reasons that make women seek assistance from TBAs? Why? Give examples

7. What are the reasons that make women seek assistance from SBAs? Why? Give examples

8. In your opinion, do you think that delivery assistants are well equipped to conduct deliveries? Why? Why not

9. What do TBAs do to help a woman at the time of delivery?

10. What do SBAs do to help a woman at the time of delivery?

11. What are some of the dangers a woman is likely to be exposed to during delivery?

12. What steps do birth assistants take in case of an emergency during delivery?

13. What is your opinion about who assist during delivery in relation to your cultural and religious points of view?

14. What are the religious, traditional and cultural practices of your community during delivery?

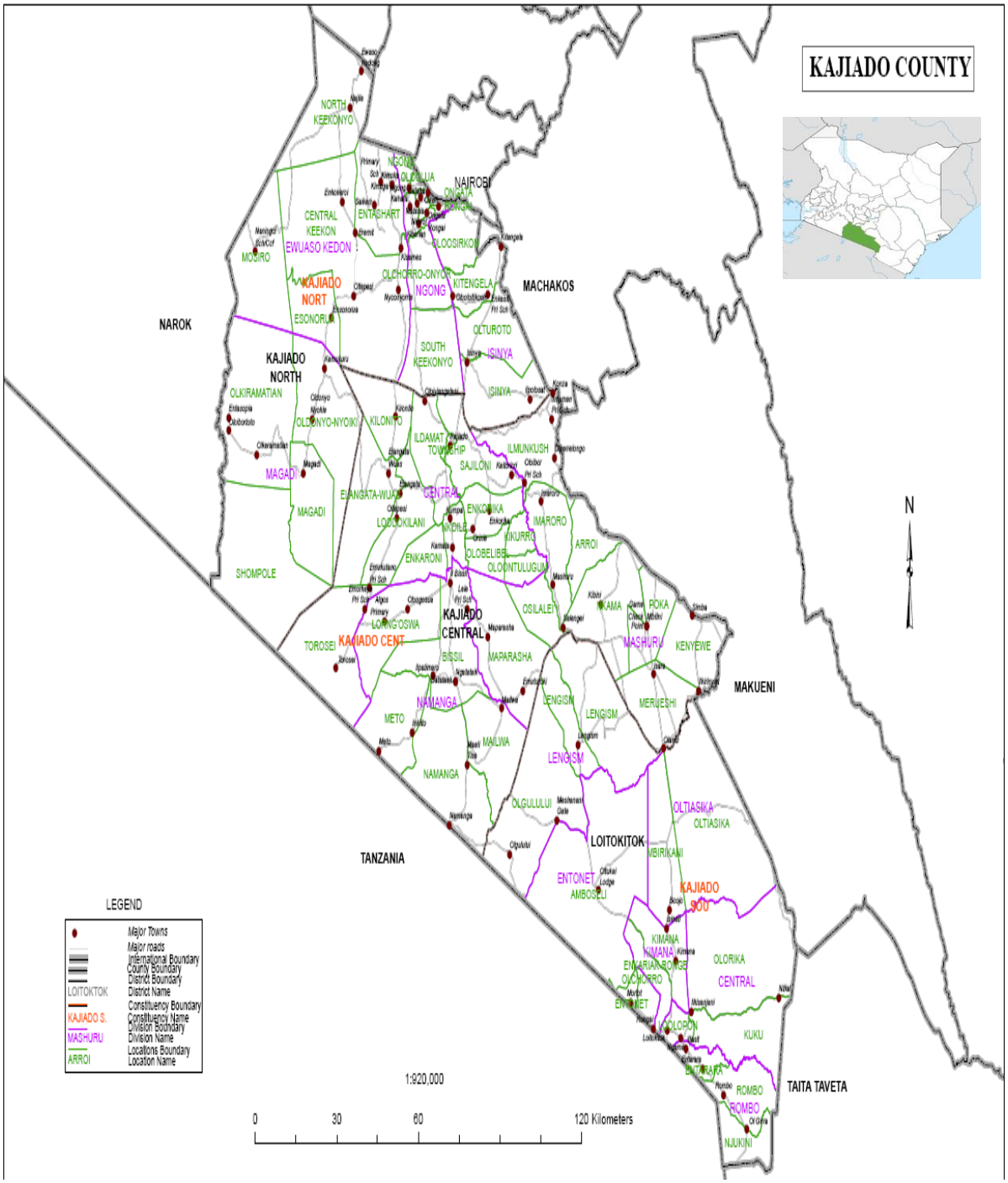
15. What can you say about the health facilities in this area in terms of doctors/ nurses: how they treat patients, equipment/drugs/medicine/space/charges/distance

16. What do you think can be done to ensure that during delivery the lives of the mother and baby are saved?

17. What do you think should be done to get more mothers deliver with SBAs?

Ending questions. Are there any issues, questions or comments that you would like to raise or points you want to add?

Appendix 7: Map Showing Study Area



Appendix 8: Research Permit

PAGE 2

PAGE 3

Research Permit No. *NCST/RCD/12A/013/78*

THIS IS TO CERTIFY THAT:

Date of issue *4th June, 2013*

Prof./Dr./Mr./Mrs./Miss/Institution

Fee received *KSH. 1000*

Consolate Awuor Okoth

of (Address) Kenyatta University

P.O Box 43844-00100, Nairobi.

has been permitted to conduct research in

Location

Kajiado Central District

Rift Valley Province

on the topic: Determinants of utilization of skilled birth attendants among women in Central Division, Kajiado, Kenya.

Applicant's Signature

For Secretary National Council for Science &Technology

for a period ending: 31st July, 2013.

CONDITIONS

1. You must report to the District Commissioner and the District Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed with-out prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2)/four(4) bound copies of your final report for Kenyans and non-Kenyans respectively.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

HARAMBEE

REPUBLIC OF KENYA

RESEARCH CLEARANCE PERMIT

GPK6055t3mt10/2011

(CONDITIONS—see back page)

Appendix 9: Research Authorization

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
Mobile: 0713 788 787 , 0735 404 245
Fax: 254-020-2213215
When replying please quote
secretary@ncst.go.ke

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RCD/12A/013/78**

Date: **4th June 2013**

Consolate Awuor Okoth
Kenyatta University
P.O Box 43844-00100
Nairobi.

RE: RESEARCH AUTHORIZATION

Following your application dated **29th May, 2013** for authority to carry out research on "***Determinants of utilization of skilled birth attendants among women in Central Division, Kajiado, Kenya.***" I am pleased to inform you that you have been authorized to undertake research in **Kajiado Central District** for a period ending **31st July, 2013.**

You are advised to report to **the District Commissioner, District Education Officer and Medical Officer of Health, Kajiado Central District** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:
The District Commissioner
The District Education Officer

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development".

Appendix 10: Ethical Clearance: Kenyatta University Ethics Review Committee

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Fax: 8711242/8711575
Email: kuerc.chairman@ku.ac.ke
kuerc.secretary@ku.ac.ke
Website: www.ku.ac.ke

P. O. Box 43844
Nairobi, 00100
Tel: 8710901/12

Our Ref: KU/R/COMM/51/131

Date: March 21st, 2013

Consolata Awuor Okoth
School of Public Health
Kenyatta University
Nairobi

Dear Ms. Okoth,

APPLICATION NUMBER **PKU/092/181**OF 2013 – **'UTILIZATION OF SKILLED BIRTH ATTENDANTS AMONG WOMEN IN CENTRAL DIVISION, KAJIADO, KENYA.**

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic, **'Utilization of Skilled Birth Attendants Among Women in Central Division, Kajiado, Kenya'** dated 21st January 2013.

2. APPLICANT

Consolata Awuor Okoth
School of Public Health
Kenyatta University
Nairobi

3. SITE

Kajiado, Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines, and is of the view that against the following elements of review,

(i) Scientific design and conduct of study,
(ii) Recruitment of research participant,
(iii) Care and protection of research participants,
(iv) Protection of research participant's confidentiality,
(v) Informed consent process,
(vi) Community considerations.

AND APPROVED and that the research may Proceed for a period of ONE YEAR starting 21st March 2013. You are requested to consider the advice given below;