WOMEN’S PERSISTENT UTILIZATION OF UNSKILLED BIRTH ATTENDANCE: A STUDY OF MOTHERS IN KAKAMEGA COUNTY, KENYA

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR AWARD OF THE DEGREE OF MASTER OF PUBLIC HEALTH (REPRODUCTIVE HEALTH) IN THE SCHOOL OF PUBLIC HEALTH OF KENYATTA UNIVERSITY.

JUNE 2016
DECLARATION

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

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I dedicate my thesis to family and friends. A special feeling of gratitude to my loving parents, Vincent Namusonge and Adah Namusonge for their encouragement.
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I would like to extend my appreciations to everyone who made this study feasible and achievement of my ideas and objectives a reality.

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ACRONYMS AND ABBREVIATIONS

ANC - Antenatal care
ABN - Andersen’s Behavioral Model
AIDS - Acquired Immune Deficiency Syndrome
BEOC - Basic Emergency Obstetric Care
CEOC - Comprehensive Emergency Obstetric Care
CHVs - Community Health Volunteers
CHEWs - Community Health Extension Workers
CORPs - Community Owned Resource Persons
EDD - Expected Date of Delivery
EMTCT - Elimination of Mother to Child Transmission of HIV/AIDS
FGD - Focus Group Discussion
HIV - Human Immunodeficiency Virus
HMIS - Health Management Information System
IBP - Individual Birth Plan
ICPD - International Conference on Population and Development
IPT - Intermittent Preventive Treatment
KDHS - Kenya Demographic Health Survey
LLITNs - Long lasting Insecticide Treated Nets
MDG - Millennium Development Goal
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>MMR</td>
<td>Maternal Mortality Ratio</td>
</tr>
<tr>
<td>MNH</td>
<td>Maternal and Newborn Health</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>NCAPD</td>
<td>National Coordination Agency for Population and Development</td>
</tr>
<tr>
<td>NHRS</td>
<td>National Reproductive Health Strategy</td>
</tr>
<tr>
<td>RMNCAH</td>
<td>Reproductive, Maternal, Newborn, Child and Adolescent Health</td>
</tr>
<tr>
<td>SBAs</td>
<td>Skilled Birth Attendants</td>
</tr>
<tr>
<td>SCRHC</td>
<td>Sub-County Reproductive Health Coordinator</td>
</tr>
<tr>
<td>SDG</td>
<td>Sustainable Development Goal</td>
</tr>
<tr>
<td>SMI</td>
<td>Safe Motherhood Initiative</td>
</tr>
<tr>
<td>TBA</td>
<td>Traditional Birth Attendant</td>
</tr>
<tr>
<td>TT</td>
<td>Tetanus Toxoid</td>
</tr>
<tr>
<td>UBA</td>
<td>Unskilled Birth Attendance</td>
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<tr>
<td>UNICEF</td>
<td>United Nations Children’s Education Fund</td>
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<td>UNFPA</td>
<td>United Nations Fund for Population Activities</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>WHO</td>
<td>World Health Organization</td>
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OPERATIONAL DEFINITIONS

Emergency Obstetric care: - EmOC consists of a package of life-saving interventions that include administration of parenteral antibiotics, uterotonic drugs, parenteral anticonvulsants, manual removal of placenta, removal of retained products of conception, assisted vaginal delivery, neonatal resuscitation, blood transfusion and caesarean section.

Enabling Environment: - A context that provides a skilled attendant with the backup support to perform routine deliveries and make sure that women with complications receive prompt emergency obstetric care.

Health facility: - A health center responsible for a defined population, and for providing or supervising all the curative, preventive and promotive health services within that population.

Perception: - A process involving beliefs, ideas, observation and feelings by which human beings interpret and organize sensation. It best describes one’s ultimate experience of the world and dispositions to act in certain ways.

Persistence: - A state of status quo or slow progress in improvement of skilled birth attendance indicators despite interventions

Skilled birth attendant: - refers to a medically qualified provider with midwifery skills (midwife, nurse or doctor) who has been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage, or refer obstetric complications.
Skilled attendance (or skilled care): - Delivery attended by a skilled health personnel/attendant.

Unskilled Birth Attendance: - Delivery attended by unskilled health personnel (medically unqualified provider)

Maternal morbidity: - Refers to serious disease, disability or physical damage such as fistula and uterine prolapse, caused by pregnancy-related complications. Maternal morbidity is widespread, but not accurately reported.

Maternal mortality: - Refers to the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

Maternal mortality ratio: - The number of maternal deaths per 100,000 live births.
ABSTRACT

Minority of births in Sub-Saharan Africa are conducted by Skilled Birth Attendants (SBAs). Having the highest world maternal mortality ratios and most deaths being associated with lack of trained supervision at delivery, changing delivery practices is a major priority in this region. Utilization of Skilled Birth Attendants (SBAs) may contribute to reducing Maternal Mortality Rate (MMR). While approximately 95.5% of women giving birth receive some antenatal care, 39% of Kenyan women deliver at home especially in rural areas. Kakamega County has low facility deliveries at 48.6% compared to the national average of 61%, this magnitude present a key challenge to improvement in maternal survival. Pregnant women in Kakamega County have varied reasons for delivering at home where deliveries are conducted by unskilled birth attendants. The study was motivated by the poor maternal indicators and low utilization of skilled birth attendance in Kakamega County despite interventions to address the problem. This study attempted to identify reasons to persistent utilization of unskilled birth attendance by women in Kakamega County. It was a descriptive cross-sectional study utilizing quantitative and qualitative approaches targeting postnatal mothers with children aged less than six months who delivered without skilled attendance. Quantitative data was collected through household interviews of eligible women using structured questionnaire and qualitative data collected using Focused Group Discussions (FGDs). All the analysis was done using Statistical Package for Social Sciences (SPSS v. 20.0). Chi square ($X^2$) was used to assess if there was significant relationship or association between independent variables and utilization of Unskilled Birth Attendance (UBA). Pearson product-moment correlation coefficient was used to measure the strength of the linear relationship between the dependent and independent variables under study. The results showed antenatal attendance rate of 92.7%. Low knowledge, socio-cultural factors and health system factors favoured utilization of UBA. Knowledge factors found to enhance utilization of UBAs in the study area were: knowledge on danger signs during labour and delivery ($r=0.430, X^2=36.104, P=0.0001$), knowledge on danger signs during postnatal period ($r=0.466, X^2=37.403, P=0.0001$) and knowledge on individual birth plan ($r=0.374, X^2=23.67, P=0.0001$). Socio-cultural factors on uptake of unskilled birth attendance were influenced by receipt of support from partner or significant others ($r=0.964, X^2=23.210, P=0.00$), marital status ($r=0.720, X^2=36.104, P=0.00$), education level ($r=0.562, X^2=28.360, P=0.003$) and decision maker on choice of place of delivery ($r=0.504, X^2=29.42, P=0.0001$). Health system factors influencing utilization of unskilled birth attendance were perception towards health facility staff ($r=0.287, X^2=20.46, P=0.00$), availability of service ($r=0.341, X^2=18.13, P=0.006$) and availability of 24 hour service ($r=-0.249, X^2=8.764, P=0.005$). There is need to equip women with knowledge on pregnancy, labour and delivery and postnatal periods and ensuring that health care providers are kind and culturally sensitive to the needs of clients hence scaling up utilization of skilled birth attendance. Birth preparedness should be advocated for every pregnant woman. The information generated from this study will be utilized by policy makers leading to appropriate interventions or strategies which can reduce the number of home deliveries and maternal deaths.
CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Globally utilization of skilled birth attendance is at 70%, in Africa it is at 50% (WHO, 2013). While in Kenya it is at 61% (KDHS, 2014). Several initiatives have been taken to reduce maternal deaths and improve maternal health, including the Nairobi Safe Motherhood Conference of 1987 (Starrs, 2006). The Nairobi conference led to the establishment of the Safe Motherhood Initiative (SMI). The specific components of this initiative include: provision of antenatal care (ANC), skilled assistance for normal deliveries, appropriate referral for women with obstetric complications, postnatal care, family planning and other reproductive health services. Maternal health was further emphasized in the International Conference on population and Development (ICPD) in 1994 (United Nations, 1994). Finally, maternal health is reinforced in the United Nations Millennium Summit of 2000, when it was included as one of the Millennium Development Goals (MDGs). The goal, which has the aim to improve maternal health, includes two targets: reduce maternal mortality ratio by three quarters between 1990 and 2015 and achieve universal access to reproductive health by 2015. The MDGs are now to be realized by the Sustainable Development Goals (SDGs) of which SDG 3 is to ensure healthy lives and promote well-being profile at all ages including reducing maternal mortalities to less than 70/100,000 live births by the year 2030 (WHO, 2014). Proportion of births attended by skilled birth attendants (SBAs) and coverage of ANC are the two main indicators to measure these targets (United Nations, 2011). The presence of a Skilled Birth Attendant (SBA) at delivery, either at home or at a health facility has been strongly emphasized in all the international initiatives on maternal health.
According to WHO’s document entitled Maternal Mortality down by 45% globally, but 33 women an hour are still dying, an estimated 289,000 women died worldwide in 2013 down from 523,000 in 1990 which amounts to a 45% drop (WHO, 2014). Despite the drop, approximately 800 women die every day from preventable causes related to pregnancy and childbirth (WHO, 2014). Women in Sub-Saharan Africa still face limited access to skilled delivery, especially in the rural areas (Essendi et al., 2011). Maternal mortality is higher in women living in rural areas and among poorer communities and most could have been prevented. Skilled care before, during and after childbirth can save the lives of women and newborn babies. The high number of maternal deaths in some areas of the world reflects inequities in access to health services, and highlights the gap between rich and poor. Almost all deaths (99%) occur in developing countries. More than half of these deaths occur in Sub-Saharan Africa. Many developing nations lack adequate health care and family planning, and women have minimal access to skilled labor and emergency care (WHO, 2008).

The maternal and newborn morbidity and mortality rates in Kenya are unacceptably high. While global maternal deaths were to cut almost by half between 1990 and 2010, Kenya’s maternal mortality ratio declined only slightly during the same period, going from 400 per 100,000 births in 1990 to 360 per 100,000 births in 2010. Every two hours in Kenya, a woman dies during pregnancy or childbirth (Kibiwott, 2014).

According to KDHS (2014) 61% of pregnant women are delivered by a skilled birth attendant while a significant proportion deliver at home under the care of unskilled persons such as the traditional birth attendants who are unable to address any of the five major causes of maternal mortality. Skilled delivery in Kakamega County is at
48.6% (KDHS, 2014). The target set by Kenya Sessional Paper No 1 is to increase skilled attendance at delivery from 44% in 2003 to 90% by the year 2015. The Government of Kenya launched a Maternal and Newborn Health (MNH) Road Map in August 2010 (UNDP, 2012). The Reproductive Maternal Newborn Child and Adolescent Health (RMNCAH) investment framework will help achieve maternal health SDGs by improving coverage of skilled birth attendance to 87% by 2020 (MOH, 2016). According to WHO’s document on trends in maternal mortality, the goal is to accelerate the reduction of maternal and newborn morbidity and mortality towards the achievement of the SDGs by ensuring healthy lives and promoting wellbeing at all levels including global reduction of MMR to less than 70/100,000 live births by 2030 (WHO, 2014). Undertaking this study will help with informing policy on issues that need to be addressed so as to improve uptake of Skilled Birth Attendance (SBA) that may contribute immensely towards the SDG’s vision.

1.2 Statement of the Problem

In Kenya, maternal mortality rate is at 400 maternal deaths per 100,000 live births (WHO/UNICEF, 2014). While this is below the Sub-Saharan average of 640 deaths per 100,000, Kenya experiences slow progression in maternal health (KDHS, 2014). Most maternal deaths are due to causes directly related to pregnancy and childbirth and obstetric complications that account for 80% of all maternal deaths. They include severe bleeding (mostly bleeding after childbirth) at 24.8%, Infections (usually after childbirth) at 14.9%, High blood pressure during pregnancy (pre-eclampsia and eclampsia) at 12.9%, Obstructed labor at 6.9%, Unsafe abortion at 12.9%, Other direct causes at 7.9%, and indirect causes such as malaria and HIV/AIDS at 19.8% (WHO/UNICEF/UNFPA, 2015).

When these conditions occur, 50% of mothers die. While approximately 95.5% of
women giving birth received some antenatal care in 2014, 39% percent of Kenyan
women delivered at home, with home births being more common in rural areas. 61%
of births were assisted by a health care professional. These rates of utilization of
skilled birth attendance have improved over the past ten years but at a slow rate,
particularly among the poor (KDHS, 2014). There is documented evidence that
skilled birth attendance can reduce maternal morbidity and mortality and therefore if
women continue to utilize unskilled attendants, maternal morbidity and mortality will
not reduce. According to the National reproductive health policy, there is little change
in the proportion of women choosing to deliver in health facilities even when these
are accessible (Canavan, 2009).

Kakamega County is among the fifteen Counties with the highest number of maternal
deaths which contributes over 60% of the national level. According to the Kenya’s
Demographic and Health Survey 2008-09, facility based deliveries were low at 26%
compared to the national average of 44% (KNBS/ICF, 2010). In KDHS 2014, facility
based deliveries improved to 48.6% compared to the national average of 61% hence
having utilization of Unskilled Birth Attendance (UBA) at 51.4% (KDHS, 2014). This
shows an upward trend though at a slow pace. The maternal mortality ratio in
Kakamega County is 800 deaths per 100,000 live births which is far worse than the
national rate of 400 deaths per 100,000 live births (WHO/UNICEF, 2015).

At this level of magnitude, improvements in maternal survival by 2015 present a key
challenge. In Kakamega County, most health facilities are within a radius of 5-10 kms
from homes of residence hence distance does not act as a hindrance factor to seeking
skilled attendance at birth. Consequently, there are 122 public, 30 faith based and 64
private health facilities as well as government subsidies and previous MNH projects (KCFS, 2012). Pregnant women in Kakamega County have varied and different factors or reasons for delivering at home where deliveries are conducted by unskilled birth attendants such as traditional birth attendants, relatives and sometimes by self who are unable to handle obstetric complications that could eventually lead to mortality. Unskilled birth attendance has negative effects such as death of the mother, loss of family income, influence on child survival, future education and living standard of family leading to household poverty and overdependence which eventually affects the country’s development.

The study aimed at exploring the determinants to persistent utilization of unskilled attendance at birth by mothers in Kakamega County despite various strategies that have been put in place by the Kenyan government through the Ministry of Health such as free maternity services as well as the presence of programs supporting in the promotion of utilization of skilled birth attendance in an attempt to reduce maternal mortality and morbidity.

1.3 Justification of the Study

According to the Kenya Demographic and Health Survey (KDHS) 2014, women’s uptake of skilled birth attendance is low in Kakamega County (48.6%) with the proportion of women who deliver at home under unskilled birth attendants being at 51.4% (KDHS, 2014). It is also among the fifteen counties with poor maternal indicators with a Maternal Mortality Rate (MMR) of 800/100,000 live births (KCFS,2012). In relation to the above statistics, the researcher decided to find out the reasons to the persistent utilization of unskilled birth attendance despite interventions put in place by the county government and stakeholders. The study was set out to
provide information on determinants of utilization of unskilled birth attendance among postnatal mothers. This study was stimulated further by the national roadmap to accelerate attainment of MDG 5 which puts the target for skilled birth attendance at 90% by 2015 (MOH, 2007).

This study aimed at determining the real issues that influence mothers to deliver at home under unskilled birth attendance in Kakamega County as a concurrent control indicator of policy implementation thus forming a basis upon which future interventions can be conducted in order to increase the prevalence of skilled deliveries with an aim of reducing maternal morbidity and mortality. The information resulting from the study will provide knowledge that will assist stakeholders in prioritizing policy actions so as to increase the uptake of skilled birth attendance.

1.4 Research Questions

i. What is the level of knowledge on pregnancy, labour and delivery and post natal periods among women who did not utilize skilled birth attendance?

ii. What are the socio-cultural factors propelling women towards seeking unskilled birth attendance during delivery?

iii. What are the health system factors leading to utilization of unskilled attendance during delivery?
1.5 Null Hypothesis

The null hypothesis (H\(_0\)) was used.

H\(_{01}\). Persistent utilization of unskilled birth attendance is not determined by the lack of knowledge on danger signs during pregnancy, labour and delivery and postnatal periods.

H\(_{02}\). Socio-cultural factors do not propel women towards seeking unskilled birth attendance during delivery.

H\(_{03}\). Health system factors do not lead to utilization of unskilled birth attendance during delivery.

1.6 Research Objectives

1.6.1 Broad Objective

To determine the factors that contribute to persistent utilization of unskilled birth attendance by women in Kakamega County.

1.6.2 Specific Objectives

i. To assess the level of knowledge on pregnancy, labour and delivery and postnatal periods among women who did not utilize skilled birth attendance.

ii. To assess the socio-cultural factors propelling women towards seeking unskilled birth attendance.

iii. To establish health system factors leading to utilization of unskilled attendance during delivery.
1.7 Significance and Anticipated Output

The primary beneficiaries of the study will be postnatal mothers (with children under six months of age) who deliver at home in Kakamega County by laying a foundation for reviewing existing policies and regulations regarding provision and utilization of skilled attendance at birth.

Secondary beneficiaries will be the reproductive health stakeholders in the community, the government, NGOs, skilled birth attendants and the community members who may use the results to formulate specific strategies for improving utilization of skilled birth attendance in Kakamega County and similar rural communities.

1.8 Limitations and Delimitations of the Study

1.8.1 Limitations

This study was carried out in Kakamega County which is a rural setting that is not developed and hence the study might not be representative of other rural areas which are developed. The study focused on postnatal mothers with children aged below six months. Application of the findings of this study will be limited to populations with similar characteristics such as resource poor, rural areas with underdeveloped infrastructure.

1.8.2 Delimitations

The study results give a real picture of the determinants to persistent utilization of unskilled birth attendance. The study findings can be replicated in other rural settings in the country. The interventions addressed can lead to reduced maternal and perinatal
morbidity and mortality

1.9 Conceptual framework

The conceptual framework on the use of delivery care services used in this study was derived and modified based on Andersen’s Behavioral Model of Health Services Use (Andersen, 1995). This model has been widely used to understand the factors that determine an individual’s use of health care services (UNICEF, 2012). The framework can be viewed as a constellation of factors as shown in Figure 1.1. Unskilled Birth Attendance has been defined explicitly as “the process by which a woman is provided inadequate care during labor, delivery and the early postpartum period” (SMIAG, 2000).

The conceptual framework follows the causal pathway of independent variables potentially associated with utilizing unskilled birth attendance which are demographic and socio-cultural factors. The relationship between utilization of unskilled birth attendance, the dependent variable was mediated by knowledge and health system factors (Figure 1.1). To cover the theoretical framework, the Principle Component Analysis method was used (Filmer et al., 2001). Weights were assigned to demographic characteristics (age, marital status, level of education, religion, economic status including monthly income and birth order). The socio demographic characteristics were used to determine their influence on utilization of unskilled birth attendance among the respondents, five knowledge factors (knowledge on services offered at ANC which included health education; Elimination of Mother to Child Transmission of HIV/AIDS (EMTCT); Tetanus Toxoid (TT); iron/folate supplementation to prevent anaemia; Intermittent Prophylaxis Therapy (IPT) and Long Lasting Insecticide Treated Nets (LLITNs) to prevent malaria/anaemia;
deworming; family planning; newborn care; rest and hygiene and Antenatal Care (ANC) profile. They were also interviewed on whether they attended ANC, gestation at which they attended the first ANC visit and the number of ANC visits.

On knowledge on danger signs during pregnancy respondents were interviewed on various aspects such as malaria in pregnancy; lower abdominal pain; reduced fetal movement; difficulty in breathing; vaginal bleeding; high blood pressure; severe headache; jaundice and anemia. On knowledge on danger signs during labour and delivery, respondents were asked if they had knowledge on the following danger signs: suspected maternal oliguria; obstetric haemorrhage; prolonged/obstructed labour; malpresentation; pre-eclampsia/eclampsia; jaundice; respiratory distress; hypovolemic shock; unconsciousness and anemia. On knowledge on danger signs during post natal periods respondents were asked to mention the danger signs which included post-partum haemorrhage; retained placenta; birth asphyxia; severe vaginal/cervical tear; sepsis/severe systemic infection; puerperal sepsis; hypovolemic shock; sore nipples; retained placental segments and anemia. Respondents were also interviewed on knowledge on the Individual Birth Plan including aspects such as identification of a decision maker; identification of place of delivery; setting aside money in preparation for delivery; preparation of a transport plan; identification of a birth partner/companion and preparation of the mother-baby pack. Socio-cultural factors determining utilization of unskilled birth attendance interviewed among the respondents included myths and beliefs, support from partner/significant others and decision making on choice of place of delivery. Health system factors included distance to health facility, availability of service, availability of 24 hour service, staff attitude, equipment and supplies and human resource. These variables were used to
assess their association with the outcome of interest which is utilization of unskilled birth attendance.

Figure 1.1: Andersen’s Behavioral Model of use of health services (adopted and modified from Andersen, 1995).
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Globally, one third of births take place at home without the assistance of a skilled attendant. In Africa, less than 50% of births are attended by a skilled health worker (WHO, 2005). Skilled attendance at all births is considered to be the single most critical intervention for ensuring safe motherhood, because it hastens the timely delivery of emergency obstetric and newborn care when life-threatening complications arise. Skilled attendance denotes the presence of health providers and an enabling environment. It also implies access to a more comprehensive level of obstetric care in case of complications requiring surgery or blood transfusions (UNFPA, 2014).

The Millennium Development Goal 5 (MDG 5) was one of the MDGs adopted globally aimed at reducing the maternal mortality rate by three-quarters by 2015. For this target to be achieved there was to be a 5.5% decline in Maternal Mortality Rate (MMR) annually from 1990. However, global MMR declined from 400 maternal deaths per 100,000 live births in 1990 to 210 in 2010 representing an average annual decline of 3.1%. This means that the overall aim of MDG 5 (a 75% reduction in maternal mortality ratio) was very unlikely to be achieved by 2015 (WHO/UNICEF/UNFPA, 2015). Access to appropriate health care including skilled birth attendance at delivery and timely referrals to emergency obstetric care services (EMOC) can greatly reduce maternal deaths and disabilities by over 90% yet women in Sub Saharan Africa continue to face limited access to skilled delivery services (Essendi et al., 2013).

MDG 5 achieved a 45% reduction in maternal mortality ratio worldwide between
1990 and 2013, from 380 to 210 maternal deaths per 100,000 live births, though most of the reduction occurred since 2000. There was a 12% increase in the number of births assisted by skilled health personnel globally in 2014 compared to 1990-59% to 71%. Maternal death dropped significantly since the adoption of the MDGs. Despite the progress, every day lots of women die during pregnancy or from complications arising from childbirth. Universally, there were an estimated 289,000 maternal deaths in 2013, which is equivalent to around 800 women dying daily with the highest rate of maternal deaths being in Sub-Saharan Africa and Southern Asia, which collectively accounted for 86% of global maternal deaths. Most of these maternal deaths are preventable, with hemorrhage accounting for over 27% of maternal deaths in developing regions and about 16% in the developed regions. Other complications leading to death include high blood pressure during pregnancy, infections, unsafe abortion, and complications from delivery. Proven health-care interventions can help manage or prevent these complications, including skilled care during childbirth, antenatal care in pregnancy, and care and support in the weeks following childbirth. One of the most fundamental ways to reduce maternal morbidity and mortality is ensuring that every birth occurs with the help of a skilled health personnel-midwife, nurse, or doctor. Progress in increasing the proportion of births delivered with skilled attendance has been modest over the MDG time frame, which is an indication of the lack of universal access to care (UN, 2016).

There is a correlation between regions with a higher proportion of skilled attendance during delivery and low maternal mortality rates (Alvarez et al., 2009). For instance, according to the World Health Organization Global Strategy for Women’s and Children’s Health, the 2010 maternal mortality as well as neonatal mortality rates in
countries where women deliver under skilled attendance are lower (WHO, 2010). Skilled attendants are trained to recognize problems early, when the situation can still be controlled, to intervene and manage the complications, or to stabilize the condition and refer the patient to a higher level of care, if needed. According to WHO’s documentation on trends in maternal mortality, skilled attendance is also vital to protecting the health of newborns, yet in the developing world, only about 58% of all deliveries are reported as attended by skilled health providers. In some countries the figure is closer to 10-12%. And many of those women with obstetric complications do not have access to life-saving emergency care such as caesarian section and blood transfusion should something go wrong (WHO, 2014).

Historical as well as contemporary evidence from many countries, most notably China indicate that skilled midwives have a drastic impact on reduction of maternal and neonatal mortality. This is why the proportion of births attended by a skilled health provider is one of the two indicators for measuring progress toward the fifth MDG (WHO, 2004).

Maternal mortality is a relatively rare event in high-income countries and some middle-income countries. There is however a rising trend in the overall rate of severe maternal morbidity in many of these countries due to the increasingly complex obstetric and medical needs of women who become pregnant (Furuta et al., 2014). There is need to identify how women’s experiences of health services following maternal morbidity could be improved including women’s perceptions and experiences of severe maternal morbidity (defined as obstetric hemorrhage, severe preeclampsia, eclampsia and critical care unit admission).
The MMR in developing regions is 14 times higher than in developed regions (WHO/UNFPA/UNICEF, 2015). Various models have been developed to address the different levels of health care necessary for the reproductive cycles of a woman’s life including the ante and postpartum stages. One of the most widely applied models used in maternal health programming today is The Three Delays model which promotes the presence of a skilled birth attendant who is linked to a functioning health system. Improving accessibility and adequate treatment and care by skilled birth attendants, seems to be crucial in preventing maternal mortality (Cham et al., 2005). The “three delays”, that impact on maternal mortality encompass delay in decision to seek care due to the low status of women, poor understanding of complications and risk factors in pregnancy and when to seek help, previous poor experience of health care and financial implications; delay in reaching care due to distance to health centres and hospitals, availability of and cost of transportation, poor roads and infrastructure and geography e.g. mountainous terrain, rivers; and delay in receiving adequate health care due to poor facilities and lack of medical supplies, inadequately trained and poorly motivated medical staff and inadequate referral systems. The major complications that account for 80% of all maternal deaths are Severe bleeding (mostly bleeding after childbirth) at 24.8%, Infections (usually after childbirth) at 14.9%, High blood pressure during pregnancy (pre-eclampsia and eclampsia) at 12.9%, Obstructed labor at 6.9%, Unsafe abortion at 12.9%, Other direct causes at 7.9%, and indirect causes such as malaria and HIV/AIDS at 19.8%.

In Kenya, reporting of the cause of maternal death is incomplete in the Health Management information System (HMIS). Overall leading causes appear to be
antepartum and postpartum hemorrhage. Also common are eclampsia, sepsis, ruptured uterus and obstructed labor. According to a study carried out in Western Kenya, puerperal sepsis was the leading direct cause of maternal mortality (28%) while HIV/AIDS was the leading indirect cause of maternal mortality (40%) (Ofware et al., 2007). Kenya’s vision 2030 recognizes that maternal health plays an important role in achieving the MDGs and propelling Kenya to a middle income economy and rapidly industrializing state. It envisions a maternal mortality ratio (MMR) of 147/100,000 live births and 90% of deliveries assisted by skilled medical personnel by 2012 (Juley-Anne, 2014).

2.2 Level of Knowledge on Pregnancy, Labour and Delivery and Postnatal Periods

Knowledge of danger signs of obstetric complications during pregnancy, labour and postnatal period is the first essential step for appropriate and timely referral. According to a study carried out in Ethiopia on knowledge about obstetric danger signs and associated factors among mothers, the findings of this study provided an insight information on pregnant women's knowledge about obstetric danger signs in the study area, which could help in designing appropriate interventions and as a base for further wide scale studies in other parts of the country. The study indicated that the knowledge level of pregnant women about obstetric danger signs (during pregnancy, childbirth and postpartum period) was low and affected by residential area. Therefore, the identified deficiencies in awareness should be addressed through maternal and child health services by designing appropriate strategies including provision of targeted information, education and communication (Hailu et al., 2013).

Maternal deaths have both direct and indirect causes. Around 80% of maternal deaths
worldwide is brought about by direct obstetric complications such as hemorrhage, infection, obstructed and prolonged labor, unsafe abortion and hypertensive disorders of pregnancy. Indirect causes such as malaria, diabetes, hepatitis, anemia and other cardiovascular disorders which are aggravated by pregnancy can also lead to maternal death. The danger signs are not the actual obstetric complications, but symptoms that are easily identified by non-clinical personnel. They are mainly classified into three; the commonest/key danger signs during pregnancy include severe vaginal bleeding, swollen hands/face and blurred vision. Major danger signs during labor and childbirth include Severe vaginal bleeding, Prolonged labor (>12 hours), Convulsions and retained placenta. Major danger signs during the postpartum period include severe vaginal bleeding, foul-smelling vaginal discharge, and fever (Afolabi et al., 2016).

Maternal morbidity and mortality could be prevented significantly if women and their families recognize obstetric danger signs and promptly seek health care service during labor, delivery and early postpartum period under the supervision of skilled delivery attendant(SBA). Evidence suggests that raising awareness of women about obstetric danger signs would improve early detection of problems and reduces the delay in deciding to seek obstetric care. It is the essential first step in the appropriate and timely referral to essential obstetric care. Similarly, because most babies are born at home or are discharged from the hospital in the first 24 hours, increasing community awareness of the danger signs of newborn complications is of critical importance for improving newborn survival. Thus, this has been identified as one of the key strategies for improving maternal and child health (Liambila et al., 2013) . However, like in many developing countries, awareness of women about obstetric danger signs remains low in Ethiopia. The Federal Ministry of Health (FMOH), reproductive health department and Health Bureaus of respective regions have made concerted effort to
promote awareness of mothers about obstetric danger signs and achieve Millennium Development Goal 5 on a date. They have been applying multi-pronged approaches at local and national levels to improve access to health care information throughout the country including activities such as training of health care providers and health extension workers, organizing civil societies, supporting women to women's associations (such as Health development army, women's networks, etc.), increasing access to health facilities and allocating health resources more equitably among rural and urban areas. Although women's awareness about obstetric danger signs has substantial importance for improving maternal and child health, little is known about the current knowledge and influencing factors in the study area. This study therefore aims to fill this gap by assessing the current level of knowledge and determinant factors among urban and rural women who gave birth in the past two years prior to this survey in Tigray region, Ethiopia (Hailu et al., 2013). In this study a significant proportion of mothers were not knowledgeable about the danger signs of pregnancy, labor and childbirth. This indicates that many mothers are more likely to delay in deciding to seek care. Severe Vaginal bleeding was the most common spontaneously mentioned danger sign of pregnancy, labor and childbirth. Educational status of the mother, place of delivery and having functional Radio were found to be independent predictors of knowledge of women about the danger signs of pregnancy and childbirth.

In a study carried out by Micronutrient Initiative (MI) in Kakamega, a county in Kenya with some of the worst maternal and newborn health indicators, it was found out that having information on the special nutrition needs of pregnancy and access to skilled health care during pregnancy and labour can often be the difference between life and death for mothers and their babies. To address the gap in knowledge and vital
health services for women is essential and may be demonstrated through improving the quality and uptake of antenatal, delivery, and postnatal care and improving the community-facility linkage. Provision of vital health information during pregnancy and gaining access to skilled health care at hospital when they deliver. Training community health workers to educate pregnant women about nutritional needs, the importance of attending antenatal care visits, and the need of delivering their baby at a health facility with a skilled birth attendant is of positive impact. This helps to reduce delays in women seeking, reaching and receiving skilled care, but is shifting attitudes and behaviour as more and more women and their communities gain confidence in the improved health care now available to them. Women are able to seek the services and receive helpful information such as importance of iron and folic acid supplements to reduce anaemia, a tetanus injection and advice from the nurses on preparing for the birth of her child, including the need for rest and a well-balanced diet (MI, 2015).

Accurate perception of Obstetric Danger Signs (ODS) is a critical step in minimizing the high levels of reproductive morbidity and mortality in Nigeria. Since knowledge of ODSs is largely absent among pregnant women, attempts must be made to increase their knowledge and improve their perception through mass media announcement, Information, Education and Communication (IEC) as well as Behavioral Change Communication (BCC), activities and regular visits by Community Health Workers (CHWs) and other healthcare providers. Women education, from secondary level, is meaningfully related with level of knowledge about ODSs and also with health seeking incase these danger signs appear (Afolabi et al., 2016).
The World Bank identifies improving maternal health as a corporate priority. It is necessary to think multi-sectorally with the pathways approach, as factors that lead to poor maternal health are broad and require improvements in a range of other issues, such as education, gender equity, health systems, and roads (World Bank, 2013). There are a variety of strategies and approaches that have shown positive results in improving access especially for poor women to having basic maternal health services: strengthening outreach services and community based approaches; improving education for girls and women; targeting public sector subsidies to poor families and disadvantaged areas; developing effective ‘poor-friendly’ referral systems; improving quality and availability of Essential and Emergency Obstetric Care Services (EOC); promoting affordable maternal health services; scale up of adolescent sexual and reproductive health information and services; and strengthening monitoring and evaluation (WHO, 2013). These strategies and approaches have shown positive results in improving the access women, especially poor women, have the basic maternal health service. Despite the positive impact of these interventions, the uptake of skilled birth attendance is progressively slow, hence the need to find out if knowledge is a determinant to persistent utilization of unskilled birth attendance.

Tomedi et al., (2013) carried out a study in the Yatta district, Kenya on a strategy to increase the number of deliveries with skilled birth attendants in Kenyan health facilities, with assistance from traditional birth attendants, it was found that recruitment of TBAs and encouraging them to educate pregnant women about the importance of delivering in health facilities and being offered an incentive in return for each woman they brought to a facility for SBA delivery would increase uptake. The primary outcome was an increase by 113% compared with the preceding year hence concluding that the rate of SBA births in health facilities increased when TBAs
were recruited and compensated for bringing women to local health facilities to deliver. In Kakamega County, traditional birth attendants were trained and hence the study would help to find out if this strategy would help in increasing the uptake of skilled birth attendance.

2.3 Socio-Cultural Factors Propelling Women Towards Seeking Unskilled Birth Attendance

According to WHO, cultural beliefs and practices related to pregnancy, childbirth and postnatal care of the newborn and mother have not been studied extensively (WHO, 2013). However, these practices can play an important role in determining maternal and neonatal outcomes. Women need permission from partners and significant others in seeking care during pregnancy, childbirth and postpartum period. In many traditional societies, women may be denied food during pregnancy. Pregnancy and childbirth are regarded as unclean, therefore conducted in a separate often unclean area that does not meet the sterility requirements that may help in preventing infections. Mothers and neonates are not taken out of the house, even for medical assistance, due to socio-cultural beliefs and lack of knowledge of signs of severe illness (WHO, 2006). In most countries, the capacity of existing health systems to respond to the needs of mothers and newborns is limited, inadequate or unevenly distributed; in some instances it is even deteriorating.

Fapohunda et al., (2014) carried out a study in Northern Nigeria to determine factors influencing the selection of place of delivery and the implications for policy and programs. The study revealed that delivery with no one present and with unskilled attendance accounted for roughly 95% of all births in Sokoto State. Mothers with existing high risk factors, including higher parity, were more likely to select
unsafe/unskilled delivery practices than younger, lower-parity mothers. Evidenced by the high prevalence of delivery with traditional birth attendants, the study demonstrated that expectant mothers are willing to obtain care from a provider, and their odds of using accessible, affordable, skilled delivery is high, should such an option be presented.

In the early 1980’s, the WHO developed a curriculum used to equip TBAs with knowledge to support deliveries occurring at home. However, the worsening maternal and neonatal indicators prompted the change in the WHO policy in 2000 stopping the TBAs from conducting deliveries at home since they are unable to address any of the causes of maternal and newborn mortality. The Kenya Reproductive Health Policy (2007) affirmed this position and recommended change in the roles of TBAs from birth attendants to birth companions and referral agents. Despite the policy stopping home deliveries by TBAs, they have continued to deliver mothers at home. In rural Western Kenya, usage of the ANC services is high, but the use of professional delivery services is low, and almost 3 out of 5 women deliver unassisted. There is an urgent need to improve this dangerous situation (Van Eijk et al., 2006).

Pregnancy and motherhood is in many cultures perceived to be a natural phenomenon, not requiring intervention unless something is clearly wrong (Caldwell, 2002). Different perceptions and interpretations of danger signs during pregnancy amongst health personnel and the local community and traditional views on pregnancy and motherhood, are important cultural factors (Seljeskog et al., 2006). There is need to search more on the cultural issues that make mothers to utilize unskilled birth attendance.
2.4 Health System Factors Leading to Utilization of Unskilled Birth Attendance

Rajendra et al., (2014), carried out a study in Nepal on women’s perception of quality of maternity services, and reported that in the context of maternity service, the mother’s assessment of quality is central because emotional, cultural and respectful support are vital during labor and the delivery process. The women rated quality in terms of adequate medical equipment, health staff, room, water, information; clean environment, privacy and the presence of family members. Women considered the presence and availability of trained medical personnel and supplies in form of medicines as a critical aspect of care as well as availability of drugs to hasten the labor process were important aspects for enhancing utilization of maternity services.

Historical as well as contemporary evidence from many countries, most notably China indicate that skilled midwives functioning in or very close to the community can have a drastic impact on reduction of maternal and neonatal mortality. This is why the proportion of births attended by a skilled health provider is one of the two indicators for measuring progress toward the progress toward the fifth Millennium Development Goal, of improving maternal health (UNFPA, 2014).

Kruk et al., (2009) conducted a study in Tanzania on women’s preference for place of delivery in rural Tanzania, it was found that women continue to experience various problems during delivery with the help of skilled attendants. In accessing obstetric care, women can be influenced by health system factors, such as a respectful provider attitude, competency, and availability of drugs and medical equipment. Cultural inappropriateness of care, disrespectful and inhuman services, and lack of emotional support, can deter them from accessing obstetric care. This study aimed at finding out
if there was negative attitude among health care providers that may be leading to utilization of unskilled birth attendance in the area.

According to the Kenya National Commission on Human Rights, Kenya’s public health facilities have long been plagued by reports of abuse, mistreatment, and negligence of patients at the hands of staff, a problem enhanced by poor supervision and understaffing. Patients also report that the public health system is not culturally sensitive, failing to adapt to local circumstances such as cultures which require women to be attended by female practitioners. Health workers are also frequently insufficiently trained (Bourbonnais, 2013). The World Bank’s recent report on Kenyan health facilities, for example, found that only 58% of public health providers could correctly diagnose at least 4 of the 5 most common conditions patients present with, and only 44.6% properly managed maternal/neonatal complications. The poor quality of service in facilities is also well-known among potential patients and acts as a significant deterrent to engaging with the public health system. Indeed, women in North Eastern cited the poor quality of service (17.3%) and lack of female providers (9.0%) as some of the key barriers preventing them from delivering in health facilities, more so than cost of delivery (4.9%). Already, some Kenyan women interviewed by the press have stated their fear that free maternity care will lead to an even further decline in quality and enhance disrespect for their rights. As a result, they have reaffirmed their commitment to use more sensitive (if less skilled) traditional birth attendants and avoid public facilities- free or not (Bourbonnais, 2013). This study will help in finding out wether the study findings are applicable in Kakamega County and also determine perceptions of the quality of maternity services.
Access to health services is a major constraint particularly for poor and marginalized groups of the population. In many countries the majority of deliveries occur at home, attended by grandmothers, mothers and other relatives, or traditional birth attendants. Typically they occur without the assistance of a skilled birth attendant. Absence of skilled care providers, lack of access to essential care (e.g. during emergencies) or care of poor quality, unreliable or limited supplies, and non-functional referral systems have eroded public confidence in health services and may have resulted in the low utilization of existing facilities (WHO, 2006).

A study by Hogan et al., (2010) revealed that majority of maternal deaths in SSA are associated with birth complications related to lack of trained supervision at delivery, with only 10% of maternal deaths attributed to infections or disease. In addition, Choulagai et al., (2013), conducted a study in Nepal, and found that distance and inadequate transportation to health facilities pose major barriers to SBA utilization. The increasing availability of georeferenced data provides the opportunity to link health facility data with large scale household data, enabling researchers to explore the influences of distance and service quality (Gabrysch et al., 2009). This is not a major challenge in Kakamega County hence the need to find out why mothers do not utilize skilled birth attendance. Similarly, studies on barriers to utilization of skilled Birth attendance concentrate on socio-cultural and economic accessibility variables and neglect variables of perceived benefit/need and physical accessibility. To draw valid conclusions, it is important to consider as many influential factors as possible in any analysis of service delivery use.

Harun et al., (2012) carried out a study in Kajiado County, Kenya to find out the
attributes to persistent utilization of unskilled birth attendants’ services among Maasai women and it was found out to be the availability of unskilled birth attendants, ignorance of and poor access to skilled services. This study will help in determining if these are some of the reasons why mothers continue to utilize unskilled birth attendants in Kakamega County.

The Kenyan government has provided user free services hence contradicting the fact that the services are not available hence the need to explore for more reasons for utilization of unskilled birth attendants.

2.5 Synopsis showing gaps in reviewed literature

This synopsis shows a summary of reviewed literature and gaps. “Those who fear the power of skilled birth attendance ask; is it really necessary to use this service?”

Access to appropriate skilled attendance at delivery, timely referrals to emergency obstetric care services can greatly reduce maternal deaths and disabilities yet women continue to face limited access to skilled delivery. The Three Delays model which promotes the presence of a skilled birth attendant who is linked to a functioning health system can help in addressing maternal health issues. The development of a curriculum for equipping Traditional Birth Attendants with knowledge to support deliveries occurring at home has worsened maternal indicators.

Factors leading to poor maternal health require improvements in issues such as education, gender equity, health systems and roads. In accessing obstetric care, women can be influenced by health system factors, such as respectful provider attitude, competency and availability of drugs and medical equipment. Cultural
inappropriateness of care, disrespectful and inhuman services and lack of emotional support can deter them from accessing obstetric care. Cultural beliefs and practices related to pregnancy, childbirth and postnatal care of the mother and newborn have not been studied extensively.
CHAPTER THREE: MATERIALS AND METHODS

3.1 Research Design

This was a descriptive cross-sectional study that was carried out at one point in time and permitted obtaining of useful developmental data in a relatively short period of time. The study design employed both quantitative approaches through the use of an interviewer-administered questionnaire and qualitative approaches through the use of Focused Group Discussions (FGDs). This was used to obtain in-depth information (qualitative data-insight) from respondents on factors leading to utilization of unskilled birth attendance. The purpose was to collect information on opinions, beliefs, attitudes and perceptions in relation to utilization of unskilled birth attendance that helped with triangulation of quantitative data which is a powerful technique that facilitates validation of data through cross verification.

3.2 Study Variables

3.2.1 Dependent Variable

Unskilled Birth Attendance (UBA)- The study targeted postnatal mothers with children aged six months and below who did not deliver with assistance of a skilled attendant.

3.2.2 Independent Variables

Based on Andersen’s behavioral model on the use of health services, independent variables were demographic and socio-cultural and factors of the respondents. Knowledge and health system factors acted as intervening or mediating variables since they have the potential to hinder utilization of skilled attendance at delivery. They were measured using SPSS v. 20.0, a statistical computer package. Chi square
\( \chi^2 \) was used to assess if there was significant relationship between independent variables and utilization of unskilled birth attendance. P values of \( \leq 0.05 \) were considered statistically significant. Pearson product-moment correlation coefficient was used to measure the strength of the linear relationship between the dependent and independent variables under study.

### 3.3 Location of the Study

The study area was Kakamega County due to the high burden of maternal mortalities (800/100,000) live births that makes it to be among the 15 counties with poor maternal indicators as well as low utilization of skilled birth attendance at 48.6% (KNBS/ICF Macro, 2015).

Kakamega is located in the Western part of Kenya, about 400 kilometers from Nairobi, the capital city of Kenya. The county has a total population of 1,823,108, with a female population of 943,760. It covers an area of 3,244.9 km\(^2\), with a population density of 572 people per km\(^2\). The County’s population lives below the poverty line (52%) meaning that people affected cannot afford basic necessities like food, shelter, and clothing (KCFS, 2012). Four (4) out of the twelve sub counties in Kakamega County were randomly selected. Kakamega County is generally rural and largely relying on agriculture. The cash crop is mainly sugarcane and food crops which include maize, beans, groundnuts, sweet potatoes, cassava, millet, and peas. Most people are Christians of the catholic faith (KCFS, 2012).

The Crude Birth Rate in the County is 49 per 1,000, and the Crude Death Rate (CDR) is 13 per 1000. The maternal mortality ratio is 800 deaths per 100,000 live births, far worse than the national rate of 400 deaths per 100,000 live births. The neonatal
mortality rate stands at 49 deaths per 1000 live births. Women of reproductive age comprise of 22% of the female population, which is 207,627. Estimated births are at 4.4% of the population of women in the reproductive age hence the target population will be 9,136 (KNBS/ICF Macro, 2015).

3.4 Study Population

The study population comprised of postnatal mothers in Kakamega County (study area) who had delivered at home within the last six months preceding the study and residing in the study area.

**Inclusion Criteria:** Postnatal mothers residing in the randomly selected Sub Counties within the last six months, delivered at home in the last six months preceding the study and willing to participate in the study formed the study respondents.

**Exclusion Criteria:** Women who were ill or with sick children because they could not concentrate to give the required information. Similarly, they were encouraged to go and seek medical attention and women who did not consent to the study were excluded.

Key informants comprised of Community Health Extension Workers (CHEWs) and Community Health Volunteers (CHVs).

3.5 Sampling Techniques and Sample Size

3.5.1 Sampling Technique

Sample size was selected in stages, taking into account the hierarchical (nested) structure of the study population. Purposive sampling was used to select the county for the study (Kakamega County) basing on the fact that it has a high burden of maternal mortality and low uptake of skilled birth attendance. Stratified sampling
was used to select sub counties in this study. (Mugenda and Mugenda, 1999). This helped to select four sub counties from the twelve in the County by grouping them into four groups basing on the use of unskilled birth attendance and maternal mortalities. Random sampling was then used to select wards (20) in each selected sub county of which eight wards were randomly selected (two from each of the four randomly selected sub counties), followed by Snowball sampling to identify women that delivered without skilled birth attendance within the preceding 6 months (Figure 1.2). All these women were approached for recruitment as participants in the study. Purposive sampling was used to select eight key informants comprising of a Community Health Volunteers (CHV) and Community Health Extension Workers (CHEWs) from each of the four randomly selected Sub Counties and a group of eight mothers to participate in the Focused Group Discussion (FGD). Selection of mothers for FGD was based on those who had more than three home deliveries. These two groups were typical individuals from the spectrum in which the study was interested, they were key in providing the required information.
MULTI-LEVEL SAMPLING METHOD

Selecting the County for the Study
(Kakamega County)

- Purposive sampling technique

Sub-Counties for the study
(12 Sub-Counties)

- Stratified sampling technique

Sub-Counties (4) for the study and Administrative Locations/Wards for the Study (20)

- Random sampling technique

Selecting households for the study
(369)

- Snowball sampling

The mother in the household who delivered at home in the last 6 months preceding the study

Figure 3.1: Sampling technique- multi-level sampling method (Mugenda and Mugenda, 1999).
3.5.2 Sample Size Determination

The target population size is less than 10,000 thus the formula below was used to determine the sample size (Fisher et al., 1991; cited in Kothari, 2004).

\[ n = \frac{z^2pq}{d^2} \]

- \( n \) = the desired sample size
- \( z \) = the standard normal deviate, which corresponds to 95% confidence level (1.96).
- \( p \) = the proportion in the target population estimated to have the particular characteristic being studied. In this study, \( p \) was the proportion of women who do not utilize skilled birth attendance which was estimated at 51.4%. Hence \( P \) was 0.514.
- \( q \) = 1.0 - \( p \)
- \( d \) = degree of accuracy desired, usually set at 0.05

\[
1.96^2 \times 0.514 \times 0.486 = 383.9. \text{ Hence the sample size was 384.}
\]

Adjusting for a smaller sample size and reducing the sampling error margin, the second formula was used as follows:

\[ n_f = \frac{n}{1+\left(\frac{n}{N}\right)} \]

- \( n_f \) = the desired sample size (when the population is less than 10,000)
- \( N \) = the estimate of the target population size

\[
384 \quad \frac{384}{1+(384/9136)} = 368.51093 \text{ Hence the sample size was 369}
\]

One focused group discussion comprising of eight mothers, two from each Sub
County representing the four randomly selected Sub Counties for the mothers in the study population who did not take part in answering the questionnaire and had delivered at home three times or more was conducted. Two key informants per Sub County in the four selected sub counties which totaled to 8 were interviewed comprising Community Health Volunteers and Community Health Extension Workers.

3.6 Data Collection Tools/Instruments

Questionnaires were formulated to collect demographic data, socio-economic factors, cultural factors, health system factors, and decision making abilities of the respondents regarding utilization of Unskilled Birth Attendants (UBAs). This was guided by the conceptual framework and the study objectives. Interview guide was used to collect information on each key informant.

Poverty was measured in relation to the respondents levels of monthly income, this was arrived at by converting the non-monetary income such as food crops obtained from agricultural produce into monetary value. An income less than £5 per day indicated poverty according to the World Bank definition of poverty (World Bank, 2013). Poverty was also measured by putting into consideration the level of education and form of employment. People having primary level of education or less were more likely to be unemployed hence not being able to acquire adequate income to meet their basic needs for survival such as food, clothing, health, education and shelter.

The research instruments were prepared in English.
3.7 Pilot Study/Pre-testing of Study Tools

Pre-testing of the research tools was conducted in Vihiga County, which is an equivalent of Kakamega County, of which 10% of the sample size was selected for pretesting. Vihiga County has similar population and number of health facilities. This helped in testing difficulty in understanding the questions. Unclear items were reviewed, reconstructed and adjustments made to the final questionnaire.

3.7.1 Validity

Validity of the research instruments was ensured through the use of a well-designed and pre-tested questionnaire together with the research assistants. The questionnaires were designed in relation to the conceptual framework and the research objectives. Data was checked for completeness and accuracy every day they are submitted, any blanks, misplacement of information and number of questionnaires per day. Questionnaires were numbered in a sequential order before going to the field and confirmed on coming back.

3.7.2 Reliability

Reliability of the instrument, observer, and subject variation was evaluated through cognitive testing with participants drawn from the study population. Questionnaires were adapted based on the outcome of the cognitive interview.

Variation was reduced by using standardized questionnaires which were asked through structured interviews to avoid placing respondent’s own interpretation on the questions, appropriate selection of interviewers, intensive training periods for all observers and interviewers through repeat measurements on subjects similar to those who were measured in the study, and supervision as well as periodic checks on the
work of interviewers.

3.8 Data Collection Techniques

Data collection was carried out by research assistants who were CHEWs as they understood the community and the research area more. Both structured and unstructured interviews were used. In structured interviews, a list of questions were asked and the answers recorded on a standardized schedule and the data expressed numerically. The researcher employed an interview guide to collect information from the key informants pertaining uptake of services, human resource, home and hospital deliveries. FGDs were used to get the overall picture of the persistent utilization of UBAs. Open ended questions in the FGD allowed for participants’ free expression of their feelings, while the face-to-face encounters also allowed for probing and clarifications of any difficult questions. Group interview had 8 participants led by a moderator with an FGD guide. Qualitative data was recorded in a narrative form.

3.9 Data Analysis and Presentation

Data analysis was performed using SPSS v. 20.0, a statistical computer package. Chi square ($X^2$) was used to assess if there was significant relationship between independent variables and utilization of unskilled birth attendance. P values of $\leq 0.05$ were considered statistically significant. Pearson product-moment correlation coefficient was used to measure the strength of the linear relationship between the dependent and independent variables under study.

Both quantitative and qualitative methods of analysis were to analyze data. Descriptive statistics namely frequencies, percentages and means were used. Results were presented in the form of bar graphs, tables, frequencies and percentages. Qualitative data was described, summarized and interpreted for each key informant
and Focused Group Discussion (FGD). It was edited for grammar and in line with the interview guide. Similar responses were coded. Data with similar information were summarized together under the same theme, cleaned and interpreted. It was then reported descriptively paying attention to the issues and matters mentioned by the majority of the informants and capturing any unique experiences reported.

3.10 Logistical and Ethical Considerations
Ethical approval was sought from Kenyatta University Ethics and Research Committee. Permission to carry out this study was sought from The National Commission for Science and Technology, Ministry of Education Science and Technology, Ministry of Interior and Co-ordination of National Government and area chiefs. Informed consent was sought from the participating respondents and participation in the study was voluntary and all participating respondents were free to withdraw at any time without penalty and loss of privileges. Anonymity, confidentiality was safeguarded. All community entry protocols were observed from the Sub County Commissioners to the respondents at the household level. The participants were explained to about the study purpose, objectives, benefits and risks for informed consent. Confidentiality was ensured by avoiding writing names on the research tools, instead they were coded. Informed consent was sought verbally and by signing a consent form. For those respondents aged below 18 years, written consent was sort from the parents or guardians. All data collected was analyzed and reported in formats that do not allow participant identification.
CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents the results of data collected from the respondents and analyzed in the study area. The results included the demographic characteristics of respondents and factors influencing persistent utilization of unskilled birth attendance among women in Kakamega County, Kenya. To examine individual effects of various explanatory variables on women’s persistent utilization of unskilled birth attendance, data obtained was coded, entered, cleaned and analyzed using SPSS version 20.0 and exported to Microsoft-excel for presentation. Chi square ($\chi^2$) was used to assess if there was significant relationship between independent variables and utilization of unskilled birth attendance. P values of $\leq 0.05$ were considered significant. Pearson product-moment correlation coefficient was used to measure the strength of the linear relationship between the dependent and independent variables under study. The study targeted 369 women, who all responded to the items in the questionnaire. Mugenda and Mugenda (2003) declares that a response rate of 50% is adequate for analysis and reporting. The return rate was 100% hence statistically acceptable for analysis.

4.1 Socio-Demographic Characteristics of the Study Population

The total number of mothers interviewed was 369. They were interviewed on their age, marital status, education level, religion, occupation, monthly income and age at first birth. The mean age of respondents was 22 ± 4.1 years ranging from 15 to 49 years age group. Majority of the women were aged 20-29 years at 55.6% followed by 27.9% in the 30-39 age group (Table 4.1). Respondents aged 15-19 years were 13.6% while those aged 40-49 years were 3.0%. Majority of the women, 72.1% had
acquired primary level of education with low numbers having tertiary level of education at 1.9%. The respondents who had acquired secondary level of education were 15.4%, those with no form of education were 6.2% while those with preschool education were at 4.3%. Majority of the respondents were married, 82.4%, 14.1% were single while 3.5% had separated with their husbands. Respondents practicing the Catholic faith were 58.8% while 22% belonged to the Protestant faith. Muslims were 9.8% of the total respondents and traditionalists were 0.3%. Majority of the respondents were unemployed at 67.2%, those who were employed were 8.7%, self-employed were 24.1% and casual laborers were 5.4%.

Majority of the women had their first child before the age of 20 years, 66.2% followed by 20-29 age group 31.7%. Only 0.8% of the respondents had their first child after the age of 30 years. Twelve respondents did not know their age at first parity. The median age at first birth was 17 ± 2.3 years. The mean number of children by the respondents was 3 (Table 4.1).
Table 4.1: Socio-Demographic Characteristics of the Respondents

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Frequency (n) = 369</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age of respondents</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>50</td>
<td>13.6</td>
</tr>
<tr>
<td>20-29</td>
<td>205</td>
<td>55.6</td>
</tr>
<tr>
<td>30-39</td>
<td>103</td>
<td>27.9</td>
</tr>
<tr>
<td>40-49</td>
<td>11</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>304</td>
<td>82.4</td>
</tr>
<tr>
<td>Single</td>
<td>52</td>
<td>14.1</td>
</tr>
<tr>
<td>Divorced</td>
<td>13</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>23</td>
<td>6.2</td>
</tr>
<tr>
<td>Pre-school</td>
<td>16</td>
<td>4.3</td>
</tr>
<tr>
<td>Primary</td>
<td>266</td>
<td>72.1</td>
</tr>
<tr>
<td>Secondary</td>
<td>57</td>
<td>15.4</td>
</tr>
<tr>
<td>Tertiary (college/university)</td>
<td>7</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>81</td>
<td>22.0</td>
</tr>
<tr>
<td>Adventist</td>
<td>11</td>
<td>3.0</td>
</tr>
<tr>
<td>Catholic</td>
<td>217</td>
<td>58.8</td>
</tr>
<tr>
<td>Muslim</td>
<td>36</td>
<td>9.8</td>
</tr>
<tr>
<td>Traditionalist</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Others</td>
<td>23</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>32</td>
<td>8.7</td>
</tr>
<tr>
<td>Self employed</td>
<td>89</td>
<td>24.1</td>
</tr>
<tr>
<td>Not employed</td>
<td>248</td>
<td>67.2</td>
</tr>
<tr>
<td><strong>Monthly income (non monetary income converted to monetary value)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5,000</td>
<td>277</td>
<td>75.06</td>
</tr>
<tr>
<td>6,000 - 10,000</td>
<td>15</td>
<td>4.06</td>
</tr>
<tr>
<td>&gt;10,000</td>
<td>4</td>
<td>1.08</td>
</tr>
<tr>
<td>None</td>
<td>73</td>
<td>19.8</td>
</tr>
<tr>
<td><strong>Age at First Birth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-19 years</td>
<td>237</td>
<td>64.2</td>
</tr>
<tr>
<td>20-29 years</td>
<td>117</td>
<td>31.7</td>
</tr>
<tr>
<td>&gt;30 years</td>
<td>03</td>
<td>0.81</td>
</tr>
<tr>
<td>Unknown</td>
<td>12</td>
<td>3.3</td>
</tr>
</tbody>
</table>
The respondents resided in rural settings. On monthly income in monetary and non-monetary value in terms of the requirements considered adequate to satisfy minimum basic needs such as food, clothing, health education and shelter, majority, 75.06% of the respondents’ monthly income was less than Kshs.5000, 4.06% of respondents earning between Kshs. 5000- 10,000, 1.08% of the respondents earning more than Kshs.10,000 per month as they had no gainful employment. In addition, about 19.8% of the respondents had no source of income (Figure 4.1).

![Monthly income of the respondents](image)

**Figure 4.1: Monthly income of the respondents**

### 4.2 Respondents Level of Knowledge on Pregnancy, Labor and Delivery

The respondents were interviewed on various aspects of the level of knowledge on pregnancy, labor and delivery; these included antenatal care services offered to the respondents, knowledge on danger signs during pregnancy, labor and delivery; and post partum periods, knowledge on Expected Date of Delivery (EDD) and importance
of Individual Birth Plan (IBP).

4.2.1 Respondents Level of Knowledge on Pregnancy

Respondents were interviewed on various aspects of antenatal care to assess knowledge. Majority of the respondents 92.7% had attended Antenatal Clinic (ANC) and they had knowledge on the services and information provided by the health care providers at ANC which included Expected Date of Delivery (EDD). Knowledge on Iron and folate supplementation to prevent anaemia was at 85.7%, knowledge on (Intermittent Prophylaxis Therapy (IPT) and Long Lasting Insecticide Treated Net (LLITN) to prevent malaria/anaemia was at 82.2% and knowledge on healthy nutrition was at 52.6%. Counselling and health promotion on Elimination of Mother to Child Transmission (EMTCT) of HIV/AIDS was at 46.8%, knowledge on administration of Tetanus Toxoid (TT) was at 68.4%, knowledge on ANC profile was at 49.4%, knowledge on rest and hygiene was at 43.9%, knowledge on newborn care was at 41.2% and knowledge on health promotion on family planning and deworming were rated low 34.8% and 31.6% respectively (Table 4.2).
Table 4.2: Respondents Knowledge on Services and Information Provided at ANC Clinic.

<table>
<thead>
<tr>
<th>Services and Information provided at ANC</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended ANC</td>
<td>342</td>
<td>92.7</td>
</tr>
<tr>
<td>Did not attend ANC</td>
<td>27</td>
<td>7.3</td>
</tr>
<tr>
<td>Health Nutrition</td>
<td>180</td>
<td>52.6</td>
</tr>
<tr>
<td>EMTCT of HIV/AIDS</td>
<td>160</td>
<td>46.8</td>
</tr>
<tr>
<td>Tetanus Toxoid</td>
<td>237</td>
<td>68.4</td>
</tr>
<tr>
<td>IFAs</td>
<td>293</td>
<td>85.7</td>
</tr>
<tr>
<td>IPT &amp; LLITN</td>
<td>281</td>
<td>82.2</td>
</tr>
<tr>
<td>Deworming</td>
<td>108</td>
<td>31.6</td>
</tr>
<tr>
<td>Family Planning</td>
<td>119</td>
<td>34.8</td>
</tr>
<tr>
<td>Newborn Care</td>
<td>141</td>
<td>41.2</td>
</tr>
<tr>
<td>Rest and Hygiene</td>
<td>150</td>
<td>43.9</td>
</tr>
<tr>
<td>ANC Profile</td>
<td>169</td>
<td>49.4</td>
</tr>
<tr>
<td>Told EDD</td>
<td>319</td>
<td>93.3</td>
</tr>
</tbody>
</table>

Higher number of respondents reported to have knowledge on danger signs during pregnancy at 80.5%. Among the respondents who had knowledge on danger signs during pregnancy, vaginal bleeding was the commonly known danger sign at 58.2%. Other danger signs during pregnancy known to respondents were malaria in pregnancy at 18.2%, lower abdominal pain at 31.6%, reduced fetal movements at 5.7%, difficulty in breathing at 3.4%, high blood pressure at 1.7%, severe headache at 35.7%, jaundice at 5.4% and anemia at 11.4% (Table 4.3).
Table 4.3: Respondents Knowledge on Danger Signs During Pregnancy

<table>
<thead>
<tr>
<th>Danger signs</th>
<th>Number of Respondents who mentioned them (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>297</td>
<td>80.5</td>
</tr>
<tr>
<td>No</td>
<td>72</td>
<td>19.5</td>
</tr>
<tr>
<td>Malaria in pregnancy</td>
<td>54</td>
<td>18.2</td>
</tr>
<tr>
<td>Lower abdominal pain</td>
<td>94</td>
<td>31.6</td>
</tr>
<tr>
<td>Reduced fetal movement</td>
<td>17</td>
<td>5.7</td>
</tr>
<tr>
<td>Difficulty in breathing</td>
<td>10</td>
<td>3.4</td>
</tr>
<tr>
<td>Vaginal bleeding</td>
<td>173</td>
<td>58.2</td>
</tr>
<tr>
<td>High Blood Pressure</td>
<td>5</td>
<td>1.7</td>
</tr>
<tr>
<td>Severe headache</td>
<td>106</td>
<td>35.7</td>
</tr>
<tr>
<td>Jaundice</td>
<td>16</td>
<td>5.4</td>
</tr>
<tr>
<td>Anemia</td>
<td>34</td>
<td>11.4</td>
</tr>
</tbody>
</table>

Findings on IBP indicated that majority of the respondents 87% had some idea on individual birth plan with 13% not having an idea on individual birth plan. Among those who had some idea on individual birth plan, all of them pointing out the need for a decision maker in case of an emergency or choice of place of delivery. There was inadequate knowledge on other aspects of the individual birth plan that included preparation of mother-baby package 26.6%, identification of place of delivery 32%, setting aside money in preparation for delivery or emergency 29.5%, identification of a birth partner/companion 5.96% and preparation of a transport plan 23.3% (Figure 4.2).
The key informants reported that there was poor adherence to the Individual Birth Plan. Most of them did not prepare for delivery, especially buying baby’s clothes, saying that clothes can never be bought before the baby is born: “usikate kanzu kabla mtoto hajaja,” said a Community Health Volunteer (CHV) from Mumias West Sub County. (Mmmm as other participants seconded this point). Buying clothes before the baby is born may lead to intrauterine fetal death. This makes them to shy away from hospital since the health workers become harsh when they go to hospital for delivery without baby items. They also do not like the position of lying on hospital beds during labour and delivery. They prefer squatting on the floor which is not allowed in hospital, this is why they prefer delivering at home.

Another CHEW reported that some TBAs hold onto the mothers when they go to them early for labour and delivery instead of referring them to hospital immediately. Their aim being to wait till it is at night so that they can conduct the delivery and give
an excuse that it was late in the night. They do this for a fee from the mothers.

Key informants stressed on the importance of sensitizing community members on Individual birth plan and active male involvement on issues to do with pregnancy, labour and delivery as a strategy in scaling up utilization of skilled birth attendance.

“We would like them to have individual birth plans. I know there are some cultural issues involved that make them not adhere to it such as one cannot prepare for a baby who is not yet born as this could lead to intrauterine fetal death. These myths and beliefs can be done away with through continuous behavior change communication. Partners should also be actively involved through formation of father to father support groups. This can improve utilization of skilled birth attendance,” said a CHEW.

In addition the community health volunteers reported that husbands and significant others do not want to hear anything to do with hospital services. Some said they stopped utilizing government services long time ago. Government officers go to them with health messages then make them to sign forms for payment but they never get the money and they feel like they are using their names to enrich themselves. A CHV said, “Most of these women respect their husbands and therefore must listen to the voices of their husbands. Some women’s faith does not allow them to utilize modern medicine and hence they can never go to hospital for delivery or any other service. They believe that prayer conquers it all. It can even reduce complications during labour and delivery and this leads to maternal and newborn deaths.”

Antenatal care attendance was high in the study area with majority 92.7% (n=342) of the respondents interviewed reporting to have attended at least one ANC clinic during
their most recent pregnancy. Only 7.3% of the study respondents reported not to have attended ANC clinic. This coincides with the adequate level of knowledge on danger signs during pregnancy and knowledge on EDD. In this study, 43% of the respondents reported having made at least four antenatal care visits during their most recent pregnancy while 57% made less than four ANC visits. ANC (Table 4.5).

Table 4.5: Respondents ANC Characteristics that Determined Knowledge

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Frequency (n=369)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antenatal Attendance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Attended ANC</td>
<td>342</td>
<td>92.7</td>
</tr>
<tr>
<td>• Not attended ANC</td>
<td>27</td>
<td>7.3</td>
</tr>
<tr>
<td><strong>No. of ANC visits in pregnancy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• &lt; 4</td>
<td>195</td>
<td>57</td>
</tr>
<tr>
<td>• 4 ANC Visits</td>
<td>147</td>
<td>43</td>
</tr>
</tbody>
</table>
4.2.2: Respondents who Knew Danger Signs During Labour and Delivery

Respondents who had knowledge on danger signs during labour and delivery were at 20.9% hence a declining trend on the level of awareness on the danger signs (Figure 4.3).

![Knowledge on Danger Signs During Labour and Delivery](image)

**Figure 4.3: Knowledge on danger signs during labour and delivery**

Among those who had knowledge on danger signs during labour and delivery, prolonged/obstructed labour was most known to the respondents at 57.1%. The level of knowledge on other danger signs were as follows: anemia 39%, obstetric hemorrhage 31.2%, malpresentation 10.4%, suspected maternal oliguria 9%, pre-eclampsia/eclampsia 3.9%, respiratory distress 3.9%, hypovolemic shock 1.3%, unconsciousness 1.3% and jaundice 0% (Table 4.6).

Consequently, it was noted that “old women in the communities, commonly called nyanyas, tell mothers that they have experience in giving birth. They even used to give birth in the bush and nothing used to happen,” a Community Health Volunteer (CHV) said. This makes women to buy that, hence delivering in their homes. Some women
in the (Focused Group Discussions (FGDs) said their husbands do not want them to go to hospital because they are going to expose their Human Immunodeficiency Virus (HIV) status and they do not want their status to be known. One of the (Community Health Extension Workers (CHEWs) said that men fear being tested for HIV/AIDS and hence do not advocate for their wives to go to a health facility for services. Some may escort their wives to the facility than remain outside the gate for fear of being tested. Since they are the decision makers, they opt for home delivery.

Table 4.6: Respondents Knowledge on Danger Signs During Labour and Delivery

<table>
<thead>
<tr>
<th>Danger Signs During Labour and Delivery as mentioned by Respondents</th>
<th>Number of Respondents (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>77</td>
<td>20.9</td>
</tr>
<tr>
<td>No</td>
<td>292</td>
<td>79.1</td>
</tr>
<tr>
<td>Suspected maternal oliguria</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Obstetric haemorrhage</td>
<td>24</td>
<td>31.2</td>
</tr>
<tr>
<td>Prolonged/obstructed labour</td>
<td>44</td>
<td>57.1</td>
</tr>
<tr>
<td>Malpresentation</td>
<td>8</td>
<td>10.4</td>
</tr>
<tr>
<td>Pre-eclampsia/Eclampsia</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td>Jaundice</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td>Hypovolaemic shock</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Anemia</td>
<td>30</td>
<td>39</td>
</tr>
<tr>
<td>Unconcosness</td>
<td>1</td>
<td>1.3</td>
</tr>
</tbody>
</table>

4.2.3: Knowledge of Respondents on Danger Signs after Delivery

Respondents who had knowledge on danger signs after delivery were at 22% with retained placenta being the most common known danger sign at 46.9%. Other danger signs included anemia 34.6%, birth asphyxia 33.3%, Severe vaginal/cervical tear 27.2%, post-partum hemorrhage 14.8%, retained placental segments 11.1%, hypovolemic shock 9.9%, sepsis/severe systemic infection 3.7%, infection 2.5%, puerperal sepsis 2.5% and sore nipples 8.6% (Table 4.7).
“Our parents delivered at home and never got any complications. In fact it is those who go to hospital for delivery that experience complications after delivery. My neighbor delivered in hospital two years ago and is having backache to date,” said an FGD.

Table 4.7: Respondents Knowledge on Danger Signs after Delivery

<table>
<thead>
<tr>
<th>Danger Signs after Delivery as Mentioned by Respondents</th>
<th>Number of Respondents (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>81</td>
<td>21</td>
</tr>
<tr>
<td>No</td>
<td>288</td>
<td>79</td>
</tr>
<tr>
<td>Postpartum haemorrhage</td>
<td>12</td>
<td>14.8</td>
</tr>
<tr>
<td>Retained Placenta</td>
<td>38</td>
<td>46.9</td>
</tr>
<tr>
<td>Birth Asphyxia</td>
<td>27</td>
<td>33.3</td>
</tr>
<tr>
<td>Severe vaginal/cervical tear</td>
<td>22</td>
<td>27.2</td>
</tr>
<tr>
<td>Septic/severe systemic infection</td>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td>Puerperal sepsis</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Hypovolaemic shock</td>
<td>8</td>
<td>9.9</td>
</tr>
<tr>
<td>Sore nipples</td>
<td>7</td>
<td>8.6</td>
</tr>
<tr>
<td>Retained placental segments</td>
<td>9</td>
<td>11.1</td>
</tr>
<tr>
<td>Anemia</td>
<td>28</td>
<td>34.6</td>
</tr>
</tbody>
</table>
4.2.4 Relationship between knowledge factors and utilization of unskilled birth attendance

Pearson chi-square results (Table 4.8) for knowledge on danger signs during pregnancy was 3.103 with a P-value of 0.376. Since the P > 0.05, the study accepts the null hypothesis and concludes that there is an independent relationship between knowledge on danger signs during pregnancy and utilization of unskilled birth attendance. On knowledge on danger signs during labour and delivery, Pearson chi-square was at 36.104 with a P-value of 0.0001. On knowledge on danger signs during postnatal period, Pearson chi-square was at 37.403 with a P-value of 0.0001. The study rejects the null hypothesis and concludes that lack of knowledge on danger signs during labour and delivery as well as postnatal periods influences utilization of unskilled birth attendance. Information on Individual Birth Plan (IBP) had a Pearson chi-square of 23.67 with a P-value of 0.0001. The study hence rejects the null hypothesis and concludes that lack of knowledge on Individual Birth Plan influences utilization of unskilled birth attendance.

Pearson correlation analysis results showed a correlation of 1.233 with a P value of 0.125 for knowledge on danger signs during pregnancy. The P value is greater than 0.05 (P>0.05) indicating that the correlation is not significant. This suggests that there is no significant relationship between utilization of unskilled birth attendance and knowledge on danger signs during pregnancy. Knowledge on danger signs during labour and delivery had a coefficient of 0.430 with a P value of 0.0001, indicating that there is a positive correlation between knowledge on danger signs during labour and delivery and utilization of unskilled birth attendance. This suggests that there is a significant positive relationship between knowledge on danger signs during labour and delivery and utilization of unskilled birth attendance. On knowledge on danger
signs during post natal periods, Pearsons correlation was at 0.466 with a P value of 0.0001, indicating that there is a positive correlation between knowledge on danger signs during post natal periods and utilization of unskilled birth attendance. This suggests that there is a significant positive relationship between knowledge on danger signs during post natal periods and utilization of unskilled birth attendance. On knowledge on Individual Birth Plan, Pearsons correlation was at 0.374 and a P value of 0.0001, indicating that there is a positive correlation between knowledge on individual birth plan and utilization of unskilled birth attendance. This suggests that there is a significant positive relationship between knowledge on individual birth plan and utilization of unskilled birth attendance (Table 4.8).

On Pearson chi square, number of Antenatal Care (ANC) visits were positively correlated with utilization of unskilled birth attendance with a P value of 0.008 and 0.0103 respectively. It hence shows that the less the number of ANC visits, the more the utilization of unskilled birth attendance P <0.05 (Table 4.8).
Table 4.8: Pearson Correlation and Pearson Chi-square of knowledge and related factors in utilization of Unskilled Birth Attendance

<table>
<thead>
<tr>
<th>Item</th>
<th>Utilization of Unskilled Birth Attendance</th>
<th>Value</th>
<th>Asymp. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of obstetric danger signs during pregnancy</td>
<td>Pearson Correlation Chi-Sq N</td>
<td>1.233</td>
<td>3.103</td>
</tr>
<tr>
<td></td>
<td></td>
<td>369</td>
<td>0.125</td>
</tr>
<tr>
<td>Knowledge of obstetric danger signs during labour and delivery</td>
<td>Pearson Correlation Chi-Sq N</td>
<td>0.430</td>
<td>36.104</td>
</tr>
<tr>
<td></td>
<td></td>
<td>369</td>
<td>0.0001**</td>
</tr>
<tr>
<td>Knowledge of obstetric danger signs during postnatal</td>
<td>Pearson Correlation Chi-sq N</td>
<td>0.466</td>
<td>37.403</td>
</tr>
<tr>
<td></td>
<td></td>
<td>369</td>
<td>0.0001**</td>
</tr>
<tr>
<td>Information on Individual Birth Plan</td>
<td>Pearson Correlation Chi-sq N</td>
<td>0.374</td>
<td>23.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>369</td>
<td>0.0001**</td>
</tr>
<tr>
<td>&lt;4 ANC visits</td>
<td>Pearson Chi-Square</td>
<td>5.09</td>
<td>0.008**</td>
</tr>
<tr>
<td>4 ANC visits</td>
<td>Pearson Chi-Square</td>
<td>0.778</td>
<td>.0103**</td>
</tr>
</tbody>
</table>

*p value is statistically significant (p≤0.05)

4.3: Socio-Cultural Factors Propelling women towards Seeking Unskilled Birth Attendance during Delivery

The study identified factors that propel women towards utilization of unskilled birth attendance during delivery. One of the factors was the support from partners/significant others. Majority of the respondents reported to have received support from partner or significant others 88.9% while 11.1% reported to have not received any support from partner or significant others (Table 4.9).

On marital status, 96.7% of the respondents who were married received support from partner while 3.3% received support from significant others. Among the respondents who were single 74.85% received support from significant others. Divorced
respondents did not receive any support from significant others. On educational level, 82.6% of respondents who had no form of education received support from partner while 17.4% received support from significant others. Respondents with primary level of education received support from partners at 88% and those who received support from significant others was at 12.03%. All respondents with secondary and tertiary levels of education received support from partner at 100% (Table 4.9).

The study showed that the most influential decision makers during emergency cases or choosing an appropriate place for labor and delivery were husbands at 64.2%, followed by self 21.4%, mother in law 13.6% and others (relative, CHV,TBA) at 0.8% (Table 4.9).

Key informants reported that TBAs do not allow women to go to a health facility since they prefer to help the women deliver as a source of income. Community Health Extension Workers (CHEWs) reported that some Traditional Birth Attendants (TBAs) hold onto the mothers when they go to them early for labour and delivery instead of referring them to hospital immediately. Their aim being to wait till it is at night so that they can conduct the delivery and give an excuse that it was late in the night. They do this for a fee from the mothers.

A Community Health Volunteer (CHV) from Navakholo Sub County said that there are some communities where it is believed that the placenta must be buried at home. “The placenta is believed to be the main body and by burying it outside, it means that the child was brought home without her body and this is bad omen and may affect the growth of the child hence giving preference to home delivery.”

The issue of initiating breastfeeding within one hour after delivery also curtails mothers from utilizing skilled birth attendance. “I had an issue with a mother who
came to deliver in my health facility with the mother in-law and they had some herbs (manyasi), after attending to the mother and baby, I told her to start breastfeeding but she was adamant. The mother in law stood there quiet not even attempting to encourage the mother to breastfeed. I decided to ask if there was a problem and she frankly told me that she had some herbs that the mother must bath with before breastfeeding the baby and this is a family ritual. This is one of those things that make them to deliver at home,” said a CHEW from Matungu Sub County.
Table 4.9: Factors Influencing Receipt of Support from the Community by the Respondents

<table>
<thead>
<tr>
<th>Respondents who Received Support</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>328 (89%)</td>
<td>41 (11.1%)</td>
</tr>
</tbody>
</table>

Source of Support According to Marital Status and Education Level

<table>
<thead>
<tr>
<th>Source of Support</th>
<th>Partners (%)</th>
<th>Significant Others (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MARRITAL STATUS:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>294 (96.7%)</td>
<td>10 (3.3%)</td>
</tr>
<tr>
<td>Single</td>
<td>00</td>
<td>41 (74.85%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>00</td>
<td></td>
</tr>
<tr>
<td><strong>EDUCATION LEVEL:</strong></td>
<td>(Respondents):</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>19 (82.6%)</td>
<td>04 (17.4%)</td>
</tr>
<tr>
<td>Pre-school</td>
<td>16 (100%)</td>
<td>00</td>
</tr>
<tr>
<td>Primary</td>
<td>234 (87.97%)</td>
<td>32 (12.03%)</td>
</tr>
<tr>
<td>Secondary</td>
<td>52 (96.3%)</td>
<td>02 (3.7%)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>06 (100%)</td>
<td>00</td>
</tr>
<tr>
<td>Other</td>
<td>01 (100%)</td>
<td>00</td>
</tr>
</tbody>
</table>

Decision Maker on Choice of Place of Delivery

<table>
<thead>
<tr>
<th>Decision Maker on Place of Delivery</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband</td>
<td>237</td>
<td>64.2</td>
</tr>
<tr>
<td>Self</td>
<td>79</td>
<td>21.4</td>
</tr>
<tr>
<td>Mother in law</td>
<td>50</td>
<td>13.6</td>
</tr>
<tr>
<td>Others (relative, CHV, TBA)</td>
<td>3</td>
<td>0.8</td>
</tr>
</tbody>
</table>
4.3.1 Relationship between socio cultural factors and utilization of unskilled

Pearson chi-square results (Table 4.10) for receipt of support from partners and significant others was 23.210 with a P-value of 0.00. Since the P < 0.05, the study rejects the null hypothesis and concludes that receipt of support from partners and significant others influences utilization of unskilled birth attendance. On marital status, Pearson chi-square was at 36.10 with a P-value of 0.00. The study rejects the null hypothesis and concludes that marital status influences utilization of unskilled birth attendance. Education level had a Pearson chi-square of 28.360 with a P-value of 0.0001. The study hence rejects the null hypothesis and concludes that education level influences utilization of unskilled birth attendance. On the person making a decision on choice of place of delivery, Pearson chi-square was at 29.42 with a P-value of 0.001. The study rejects the null hypothesis and concludes that the decision maker on choice of place of delivery influences utilization of unskilled birth attendance.

Pearson correlation analysis results on table 4.9 below showed a correlation of 0.964 with a P value of 0.00 on receipt of support from partner or significant others. The P value is less than 0.05 (P<0.05) indicating that the correlation is significant. This suggests that there is a significant positive relationship between utilization of unskilled birth attendance and receipt of support from partners or significant others. Marital status had a coefficient of 0.720 with a P value of 0.00, indicating that there is a positive correlation between marital status and utilization of unskilled birth attendance. This suggests that there is a significant positive relationship between marital status and utilization of unskilled birth attendance. On education level, Pearson's correlation was at 0.562 with a P value of 0.003, indicating that there is a positive correlation between education level and utilization of unskilled birth attendance. This suggests that there is a significant positive relationship between
education level and utilization of unskilled birth attendance. On decision maker on choice of place of delivery, Pearsons correlation was at 0.504 and a P value of 0.0001, indicating that there is a positive correlation between decision maker on choice of place of delivery and utilization of unskilled birth attendance. This suggests that there is a significant positive relationship between decision maker on choice of place of delivery and utilization of unskilled birth attendance (Table 4.10).

### Table 4.10: Pearson Correlation and Pearson Chi-square of socio-cultural factors in Utilization of Unskilled Birth Attendance

<table>
<thead>
<tr>
<th>Item</th>
<th>Utilization of Unskilled Birth Attendance</th>
<th>Value</th>
<th>Asymp. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received support from partner or significant others</td>
<td>Pearson Correlation</td>
<td>0.964</td>
<td>0.00*</td>
</tr>
<tr>
<td></td>
<td>Chi-Sq</td>
<td>23.210</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>369</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>Pearson Correlation</td>
<td>0.720</td>
<td>0.00**</td>
</tr>
<tr>
<td></td>
<td>Chi-Sq</td>
<td>36.104</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>369</td>
<td></td>
</tr>
<tr>
<td>Educational level</td>
<td>Pearson Correlation</td>
<td>0.562</td>
<td>0.003**</td>
</tr>
<tr>
<td></td>
<td>Chi-Sq</td>
<td>28.360</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>369</td>
<td></td>
</tr>
<tr>
<td>Decision maker on choice of place of delivery</td>
<td>Pearson Correlation</td>
<td>0.504</td>
<td>0.0001**</td>
</tr>
<tr>
<td></td>
<td>Chi-Sq</td>
<td>29.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>369</td>
<td></td>
</tr>
</tbody>
</table>

*p value is statistically significant (p≤0.05)
4.4: Health System Factors Leading to Utilization of Unskilled Attendance during Delivery.

Participants were interviewed on the distance to the nearest health facility, their rating of health facility staff in terms of service delivery, availability of service, availability of 24 hour service and availability of human resource, equipment and supplies. Most of the clients resided within 5-10 km radius 69% to the health facility, 26.3% resided below 5 km radius to the nearest health facility while 3.3% resided at a radius between 11-25km radius and 1.6% resided at a radius exceeding 25 km to the nearest health facility. Majority of the respondents disagreed to be having a positive perception towards health facility staff at 43.6%, those who strongly agreed that they had a positive perception towards health facility staff were 37.9%. Those who agreed that health facility staff had a positive attitude were 18.42% (Table 4.11). A Community Health Extension Worker (CHEW) reported that community members say that distance to the health facilities is long and this makes mothers to deliver at home. Mothers do not check their Expected Date of Delivery (EDD) from the mother child booklet and hence when due they delay visiting a health facility. This was confirmed by a Community Health Extension Workers (CHEW), who stated that “they delay coming to hospital when labour commences and end up delivering at home or on the road. When asked to justify they say they forgot the date of delivery, they did not know if it was labour, distance to the health facility is too long or it was at night and it is risky since they may be attacked by robbers.”

Awareness by respondents on availability of maternity services at the nearest health facility were as follows, 45.8% said services were not available, 36.04% said services were not available while 18.15% did not know if services were available (Table 4.11). Most respondents said that the nearest health facility did not provide 24 hour service
66.9%, while 26.3% said there was 24 hour service and 6.8% did not know if the nearest health facility provided 24 hour service (Table 4.11). Respondents who were aware that the nearest health facility had adequate human resource, equipment and supplies were at 80.2%, 3.5% said there were no adequate equipment and supplies and 15.17% did not know if the nearest health facility had adequate human resource, equipment and supplies (Table 4.11).

Table 4.11: Respondents’ Information on Health System factors Hindering Utilization of Skilled Attendance during Delivery.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Distribution of study group (n=369)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to health facility using motorbike</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• &lt;5km</td>
<td>97</td>
<td>26.3</td>
</tr>
<tr>
<td>• 6-10km</td>
<td>254</td>
<td>68.8</td>
</tr>
<tr>
<td>• 11-25km</td>
<td>12</td>
<td>3.3</td>
</tr>
<tr>
<td>• &gt;25km</td>
<td>6</td>
<td>1.6</td>
</tr>
<tr>
<td>Positive perception towards health facility staff by the respondents</td>
<td>140</td>
<td>37.9</td>
</tr>
<tr>
<td>• Strongly agree</td>
<td>68</td>
<td>18.42</td>
</tr>
<tr>
<td>• Agree</td>
<td>161</td>
<td>43.6</td>
</tr>
<tr>
<td>Availability of service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Yes</td>
<td>133</td>
<td>36.04</td>
</tr>
<tr>
<td>• No</td>
<td>169</td>
<td>45.8</td>
</tr>
<tr>
<td>• Don’t know</td>
<td>67</td>
<td>18.15</td>
</tr>
<tr>
<td>Availability of 24 hour service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Yes</td>
<td>97</td>
<td>26.3</td>
</tr>
<tr>
<td>• No</td>
<td>247</td>
<td>66.9</td>
</tr>
<tr>
<td>• Don’t know</td>
<td>25</td>
<td>6.8</td>
</tr>
<tr>
<td>Availability of equipment and supplies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Yes</td>
<td>296</td>
<td>80.2</td>
</tr>
<tr>
<td>• No</td>
<td>13</td>
<td>3.5</td>
</tr>
<tr>
<td>• Don’t know</td>
<td>56</td>
<td>15.17</td>
</tr>
</tbody>
</table>
4.4.1 Relationship between health system factors and utilization of unskilled birth attendance

Pearson chi-square results (Table 4.12) for distance to the nearest health facility was 2.304 with a P-value of 0.186. Since the P > 0.05, the study accepts the null hypothesis and concludes that there is an independent relationship between distance to the nearest health facility and utilization of unskilled birth attendance. Availability of equipment and supplies had a Pearson chi-square of 8.07 with a P-value of 1.005. Since the P > 0.05, the study accepts the null hypothesis and concludes that there is an independent relationship between availability of equipment and supplies and utilization of unskilled birth attendance. On positive perception towards health facility staff by the respondents, Pearson chi-square was at 20.46 with a p-value of 0.000. On availability of services, Pearson chi-square was at 18.13 with a P-value of 0.003. The study rejects the null hypothesis and concludes that perception towards health facility staff and availability of services influences utilization of unskilled birth attendance.

Pearson correlation analysis results on table 4.10 below showed a correlation of -0.09 with a P value of 0.142 for distance to the nearest health facility. The P value is greater than 0.05 (P>0.05) indicating that the correlation is not significant. This suggests that there is no significant relationship between utilization of unskilled birth attendance and distance to the nearest health facility. Availability of equipment and supplies showed a correlation of 8.07 with a P value of 1.005 indicating that there is no significant relationship between utilization of unskilled birth attendance and availability of equipment and supplies since the P is greater than 0.05 (P>0.05). Availability of services coefficient was at 0.341 with a P value of 0.006, indicating that there is a positive correlation between availability of services and utilization of unskilled birth attendance. This suggests that there is a significant positive
relationship between availability of service and utilization of unskilled birth attendance (Table 4.12).

Pearson chi square on perception towards health facility staff and utilization of unskilled birth attendance indicated that utilization and perception are dependent on each other with a Pearson correlation coefficient of 0.287 and a P value of 0.001 which is less than P $<$ 0.05. On correlation, utilization of unskilled birth attendance and perception towards health facility staff are negatively correlated while availability of 24 hour service and utilization of unskilled birth attendance are also negatively correlated at $P=0.000$. It hence shows that the more the negative perception towards health facility staff and lack of 24 hour service, the less the utilization of skilled birth attendance $P=0.005 <0.05$ (Table 4.12).

Table 4.12: Pearson Correlation and Chi-square of health facility factors and utilization of unskilled birth attendance

<table>
<thead>
<tr>
<th>Item</th>
<th>Utilization of Unskilled Birth Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to the nearest health facility</td>
<td>Pearson Correlation: -0.09, Chi-Sq: 2.304, N: 369</td>
</tr>
<tr>
<td>Perception towards health facility staff by the respondents</td>
<td>Pearson Correlation: 0.287, Chi-Sq: 20.46, N: 369</td>
</tr>
<tr>
<td>Availability of service</td>
<td>Pearson Correlation: 0.341, Chi-Sq: 18.13, N: 369</td>
</tr>
<tr>
<td>Availability of 24 hour service</td>
<td>Pearson Chi square: 8.764, Pearson’s R: -0.249, N: 369</td>
</tr>
<tr>
<td>Availability of equipment and supplies</td>
<td>Pearson Chi-Square: 8.074, Pearson's R: -0.154</td>
</tr>
</tbody>
</table>

*p value is statistically significant ($p \leq 0.05$)

A Community Health Volunteer (CHV) reported that some mothers preferred
Traditional Birth Attendants since they can help them much better than a doctor. They are always there and very tender. “*Hospital staff are very harsh, some of them beat mothers and that is why they prefer going to a mkunga, health facilities do not also offer 24 hour service and some health workers are quick to refer mothers for caesarian section*” said a Community Health Volunteer (CHV) from Lurambi Sub County. Also, poor attitude amongst health providers contributes to poor utilization of skilled birth attendance.

Most mothers in the Focused Group Discussion (FGD) said that health workers are very harsh to them and this keeps them off health facilities. The attitude of women towards health providers is another hindrance for women’s utilization of hospital delivery. One participant Focused Group Discussion (FGD) said that she wanted to deliver in hospital but a friend told her that the nurses are very harsh and that they even beat patients. “*They just look at you while suffering and no one cares. The way other women have been treated scares us. When one delays to give birth they take her for operation. When a mother disturbs during labour, she is taken for operation. We also fear male doctors when they help us to deliver since it is shameful. Laughter from participants. These things make us to prefer delivering at home,*” said an FGD participant. Most participants also said that they deliver at home because labour usually commences at night and they cannot get means to hospital since their husbands do not support them. They say that they have low income so do not have money to take them for hospital delivery.

They sometimes fear expenses. “*People used to tell me that if you go to deliver in hospital then you have to sell your land so as to clear the hospital bill. The doctors want to take us for operation even when we can deliver normally so that we pay a lot of money and so I cannot deliver in the health facility,*” an FGD participant said.

Most Focused Group Discussion (FGD) participants showed optimism by saying that they will start delivering in hospital since they are now realizing the importance of skilled birth attendance. One participant said that when one gives birth in hospital, she goes back home safe and clean. “*Giving birth at home has made us suffer a lot*
because sometimes mkunga would be far then you get an old woman to assist with delivery. This woman had long nails used for cutting the perineum and the baby’s umbilical cord. This was very painful. After 3 days you can’t even walk and cannot do anything. One just feels rotten inside. Those old ladies just leave blood to rot from inside but when you deliver in hospital excess blood is pressed from the abdomen” said an FGD participant.
5.0 Discussion

Skilled attendance at birth is one of the actions that improve women’s and newborns’ chances of survival during pregnancy and childbirth in low-income countries. Yet in many regions the proportion of women who do so is low as they face a number of obstacles in seeking professional medical help at childbirth. The major reason for encouraging skilled birth attendance is that it can lead to women being referred for professional medical help if they experience complications during pregnancy or birth.

This chapter deals with the discussion of findings from the study.

5.1 Socio Demographic Characteristics of the Study Population

A number of socio-demographic, cultural, economic and health system factors were found to significantly influence the use of unskilled birth attendance. They included age, religion, occupation, decision maker and attitude towards health staff.

Women aged 20-29 years utilized unskilled birth attendance more compared to women aged 15-19 years who were less likely to deliver under unskilled birth attendance. This finding coincides well with a study carried out in Northern Nigeria which found out that older women who had a higher parity and previous experience with home delivery utilized unskilled birth attendance compared to younger women in teenage who may be first time mothers hence utilizing skilled birth attendance (Fapohuda et al., 2014). Married women were more likely to utilize unskilled birth attendance. This was ultimately linked to the decision maker on choice of delivery place. It was found that husbands had a great influence in deciding where a woman will go for delivery compared to the mother in law who is less likely to make the decision. This finding compares well to a study done by WHO which states that
women need permission in seeking care during pregnancy, childbirth and postpartum period (WHO, 2006). In Kakamega County, levels of education of female populations decreases as we go up the education ladder. Most mothers in the study had acquired primary education which was attributed to the free primary education. Women with formal education have their own different perspectives on the use of skilled care at birth and have the knowledge to make informed decisions. The findings coincides well with a study that found out that women’s education or literacy levels are strongly associated with use of reproductive health and maternal health services (Harun et al., 2012). Poor, rural women are more likely to have lower education and are less likely to make use of available services. Poor women with low socio- economic status in the family tend to delay decision making when complications arise (WHO/UNICEF/UNFPA/World Bank, 2014). Pregnancy and motherhood is in many cultures perceived to be a natural phenomenon, not requiring intervention (Seljeskog et al., 2006). Ignorance and cultural beliefs enhance utilization of unskilled birth attendance. Most mothers in the study were not aware of the danger signs during labour and delivery and this made them not to go for skilled birth attendance.

The results of this study found out that most women in Kakamega County resided at a radius of 5-10km to the nearest health facility and there was adequate transportation due to the availability of motor bikes and adequate terrain. This study disagrees with the findings of a study carried out in Nepal, which found out that distance and inadequate transportation to health facilities posed major barriers to SBA utilization (Choulagai et al., 2013). The poor utilization of skilled birth attendance despite there being adequate transportation could be due to insecurity especially at night which makes mothers not to get means of transport to a health facility when labour pains commence at night. Negative attitude of health care providers could also be making
mothers not to go to the nearest health facilities as well as cultural beliefs which make mothers shun health facilities. The study also established that age at first birth had an influence on utilization of unskilled birth attendance. Women who had the first birth at 15-19 years old had a higher parity and were more likely to utilize unskilled birth attendance since they may have heard previous successful experience with home delivery under unskilled birth attendance and feel it is safe. This compares well with the study done by WHO that stated that mothers with first birth at teenage age have existing risk factors, including higher parity and were more likely to select unsafe/unskilled delivery practices (WHO, 2013). This was also confirmed by a study carried out in Ethiopia which showed that women who had the first pregnancy while in teenage had more children and were more likely to utilize unskilled birth attendance compared to those who had the first child at the age of 25 years (Mulesh et al., 2015).

The study also found out that catholics are more likely to utilize unskilled birth attendance compared to the muslims and protestants. This could be due to the doctrines being preached to the people such as one should not go to hospital but wait upon God to take care of everything. Unemployed women were more likely to utilize unskilled birth attendance as compared to those who were employed. This could be attributed to lack of money for birth preparation. Majority of the mothers were living below poverty line at £5 per day as revealed in the findings as most of the respondents had a monthly income of <Kshs. 5000, this was arrived at by converting the non-monetary income such as food crops obtained from agricultural produce into monetary value which cascades to £1.6 which cannot even meet the daily basic needs hence living below the poverty line. Poverty was also measured by putting into consideration the level of education and form of employment. Majority of the
respondents had only primary level of education and were unemployed hence not being able to acquire adequate income to meet their basic needs for survival such as food, clothing, health, education and shelter. World Bank also reported similar findings (World Bank, 2013). Majority of rural residents had high poverty levels and low access to information which contributed to the low utilization of SBAs. Low rates of deliveries by skilled attendants in rural and remote areas have been reported by previous researchers (Harun et al., 2012).

In a study carried out in Ethiopia on cultural practices affecting utilization of skilled birth attendance, mothers gave a variety of reasons for delivering at home, majority felt more comfortable to deliver at home since they will perform a variety of cultural practices, assumed no problem no problem during home delivery as it is natural and partners/significant others decided where they should have a baby and preferred home as their place of delivery (Mulesh et al., 2015). These study findings coincide with the findings found in Kakamega County where women preferred to deliver at home so that some rituals were done such as cleansing the mother’s breast before commencing breastfeeding, and burying the placenta at home. It was also found out that partners had a significant influence in deciding where the mother will deliver. Most of these mothers who had delivered at home were decided for by the partners hence there is need for active male involvement so that they know the importance of skilled birth attendance.

5.2 Level of Knowledge on Pregnancy, Labour and Delivery and Post Partum
Focused antenatal care is a timely, friendly, simple and safe service to a pregnant woman with the aim of achieving good outcome for the mother and baby and preventing any complications that may occur in pregnancy, labour, delivery and post
partum. The objectives of focused antenatal care are early detection and treatment of problems, prevention of complications using safe, simple and cost effective interventions, birth preparedness and complication readiness, health promotion using health messages, counseling and provision of care by a skilled attendant.

In this study antenatal attendance was high hence comparing well with the results of the Kenya Demographic and Health Survey (KNBS/ICF Macro, 2015). Respondents who made more than four ANC visits in their recent pregnancy were fewer compared to the findings of KDHS 2014 where more rural women reported to have attended more than four antenatal visits. Those who attended ANC in the first trimester were few compared to the findings by KDHS (2014) where more women had attended ANC in the first trimester. The low antenatal attendance in the first trimester is attributed to cultural beliefs that one should wait for the pregnancy to show before attending ANC. Low coverage of 4th ANC is attributed to lack of knowledge on the importance of attending four focused antenatal visits. World Health Organization recommends that women should attend four comprehensive personalized visits, of which the first visit ought to be in the first trimester before 16 weeks gestation (KNBS/ICF Macro, 2015). Health promotion at ANC was also inadequate since the respondents could not mention the services offered in Focused Antenatal Care; this could lead to them not appreciating the importance of attending all the recommended four ANC visits. This compares well with a study carried out by the World Bank that found out that health care providers do not provide adequate information during antenatal visits due to staff shortages, lack of adequate knowledge and negative attitude (World Bank, 2013).

The findings of this study showed that the proportion of women who had knowledge
on danger signs during pregnancy was high. This affirms the reason why ANC attendance is high. Respondents who had knowledge on danger signs during labour and delivery was the lowest while those who had knowledge on danger signs after delivery was low. The declining trend indicates the lack of utilizing skilled birth attendance which was also attributed to ignorance, negative attitude and myths and beliefs. This was similar to findings by WHO which stated that mothers and neonates are not taken out of the house, even for medical assistance, due to socio-cultural beliefs and lack of knowledge on signs of severe illness (WHO, 2006).

Birth Preparedness ensures that a woman knows when her baby is due, identifies a skilled birth attendant, a health facility for delivery/emergency, can list danger signs in pregnancy and delivery and knows what to do if they occur. The woman also identifies a decision maker, how to get money in case of emergency, has a transport plan, a birth partner/companion for the birth and collects the basic supplies for the birth (MOH-DRH/DOMC/DLTLD/JHPIEGO, 2013). Birth preparedness is not only a strategy for the community but also for the care provider at the facility level. Most respondents did not have knowledge on birth preparedness as expected and this could be the reason why they deliver under unskilled birth attendance.

Support from partner or significant others plays a crucial role during pregnancy, delivery and postnatal periods. In this study it was found that most respondents received support from partners or significant others in terms of preparation of the individual birth plan and choice of place of delivery. Since the study targeted women who had delivered at home, this support was detrimental especially when it comes to decision making as the partner or significant others chose for the mothers to deliver at home. These findings contradict a study carried out in Kenya which found out that
women who involved their loved ones were more likely to plan early for delivery hence utilizing SBAs (Tomedi et al., 2013). Male involvement is currently a priority of ministry of medical services and public health and sanitation especially in the Division of Reproductive Health (MOH, 2007). There is need for promotion of positive influence among partners and significant others in terms of decision making on choice of place of delivery.

5.3 Health System Factors Leading to Utilization of Unskilled Birth Attendance

According to the KDHS, proper medical attention and hygienic conditions during labour and delivery reduce the risk of complications, infections or death of the mother and baby as well as enhancing utilization of skilled birth attendance (KNBS/ICF Macro, 2014). Respondents whose perception on health facility staff was good was less compared to those who had a negative perception on health facility staff. Some respondents did not know whether the health facility staff were good or bad. The poor perception towards health facility staff is similar to the findings by the Kenya National Commission on Human Rights which states that Kenya’s public health facilities have long been plagued by reports of abuse, mistreatment and negligence of patients in the hands of staff, a problem enhanced by poor supervision and understaffing (Bourbonnais, 2013).

This portrayed the lack of confidence towards health care providers. Similar findings were reported in a study carried out in Uasin Gishu County (Juley-Anne, 2014). Delay in seeking appropriate medical help due to lack of transport at night, insecurity and lack of 24 hour services were found to be contributing to mothers not being able to utilize skilled birth attendance. Respondents were aware of the availability of human resource, equipment and supplies but still did not utilize the services. According to the
study findings, lack of utilizing the services was attributed to the negative attitude towards the health care system. Improving accessibility and adequate treatment and care by skilled birth attendants is crucial in preventing maternal morbidity and mortality (Cham et al., 2005).

As much as access to health facilities was insignificant, transport and referral mechanisms at night were reported by clients as reasons for opting for unskilled birth attendance. The referral mechanisms in the County were poor since there are four functional county ambulances which are meant to serve twelve sub counties. This made it impossible to coordinate many referrals at night. There is need for increasing the number of ambulances so as to enhance referral effectiveness. Security has been of concern limiting access to 24 hour referral mechanisms. Majority of women reported to walk to the facility in labour since the only affordable and available means of transport was motor cycle which was not safe in labour. This calls for increased advocacy to the county government and local leadership so as security is enhanced as well as reinforcement on the importance of the individual birth plan in health facilities and public forums so that mothers can organize to go to the nearest health facility in good time so as to avoid night referrals. Similar findings were found in a study carried out in Tanzania (UNDP: 2012). There is need to improve referral systems which may go a long way in improving maternal health

“The government has been telling us that there are ambulances available to transport us to hospital incase of an emergency but every time we request for it, it never comes. Instead we are told that we have to take the patient to the nearest health facility where the ambulance picks patients. This makes us to deliver at home,” said an FGD participant.
Lack of trust in health workers and health professionals led women to delay seeking medical care (WHO, 2014). This portrayed the fear/mistrust the community had on the health system. Respondents reported to have been left alone during labour and delivery hence preferred to deliver at home alone. This could also be attributed to staff shortage as most facilities operated below the required health provider client ratio (UNDP, 2014). Health centers reported to have 4 nurses with required capacity of 15 nurses (facility in charge and CHEW linked to Mung’ungu health centre). There is need for deployment of more health workers who are culturally sensitive to health facilities.

“Health workers are very abusive and do not care about our welfare. We shall not utilize hospital services unless they become human,” said an FGD participant.

Culture is a way of life of a group of people- the behaviors, beliefs, values, and symbols that they accept, generally without thinking about them, and that are passed along by communication and imitation from one generation to the next (choudhury, 2012).
5.5 Conclusions

(i) On assessment of the level of knowledge on pregnancy, labour and delivery and post partum periods, the mothers interviewed were knowledgeable on aspects of pregnancy. There was a declining trend in knowledge on aspects of labour and delivery and post partum periods including danger signs. On knowledge on danger signs, majority of the respondents only knew postpartum hemorrhage as a danger sign yet there are several danger signs that would lead to maternal morbidity and mortality. The null hypothesis was rejected as it was found out that lack of knowledge on the danger signs during labour and delivery and post natal periods led to utilization of unskilled birth attendance hence making it an alternative hypothesis. Knowledge on danger signs during pregnancy did not influence utilization of unskilled birth attendance.

(ii) On assessment of socio-cultural factors leading to women seeking unskilled birth attendance, it was found that the influence of partners on choice of delivery place, the believe that birth preparedness should not be done before the baby is born, that the placenta must be buried at home and breastfeeding should not commence until the mother is cleansed by an old woman who is found at home. Birth preparedness contributes to reduced Maternal Mortality Rates (MMR) and increased uptake of skilled birth attendance since it helps the mothers to plan adequately for hospital delivery by putting aside money for transport incase of emergencies, identifying the hospital for delivery and a birth companion. The null hypothesis was rejected as it was found out that receipt of support from partner or significant others, marital status, education level and decision maker on choice of place of delivery influenced utilization of unskilled birth attendance hence making it an alternative hypothesis.
(iii) On establishment of health system factors leading to utilization of unskilled birth attendance, it was found that the major thing that makes women utilize UBA was the negative staff attitude followed by lack of 24 hour health services and insecurity of thugs especially when labour pains at night hence forcing them to deliver at home. On null hypothesis, it was found out that perception towards health facility staff, availability of service and availability of 24-hour service lead to utilization of unskilled birth attendance hence making it an alternative hypothesis. Although distance and availability of equipment and supplies as health system factors did not have an influence on utilization of unskilled birth attendance.

5.6 Recommendations

(i) The Ministry of Health should equip women with knowledge on the dangers signs in pregnancy, labour and delivery, and post-partum periods and also be able to have a birth preparedness and complication readiness plan all the time. Skilled Birth Attendants (SBAs) too should have an Individual Birth Plan (IBP) which is clearly written and reviewed during each Antanatal Care (ANC) visit with the clients. It should also ensure that healthcare workers serve patients with the highest degree of professional integrity and are culturally sensitive to the needs of the clients.

(ii) The Ministry of culture, gender and social services to address socio-cultural factors leading to utilization of unskilled birth attendance through active engagement with custodians of culture to help allay myths and perceptions.

(iii) The Ministry of Health to develop a policy guideline for reorientation of Traditional Birth Attendants (TBAs) to Birth Companions and referral agents hence enabling them to accompany mothers to health facilities for delivery. It should also ensure adequate staffing in health facilities so as to enhance 24 hour service provision
5.7 Further Research

(i) This study did not involve husbands and partners. There is need for research involving the male counterparts.

(ii) There is need for a longitudinal study to find out the changes as there are ongoing interventions in reversing the trend of utilizing unskilled birth attendance.

(iii) There is poor involvement of community resource persons who are custodians of culture. There is need to research on their role and involvement in maternal and newborn health.
REFERENCES


Appendix 1: INFORMED CONSENT FORM

TITLE: WOMEN'S PERSISTENT UTILIZATION OF UNSKILLED BIRTH ATTENDANCE: A STUDY OF MOTHERS IN KAKAMEGA COUNTY, KENYA

My name is Lucy Natecho Namusonge and I am a masters of public health (reproductive health option) student at Kenyatta University. I am carrying out a study to find out the determinants of persistent utilization of unskilled birth attendance by women in Kakamega County. I would like to inform you about this study. This study aims at understanding the determinants to persistent utilization of unskilled birth attendance in this community. The researcher wishes to learn how those determinants influence the pregnancy outcomes and the birthing process.

If you agree to participate in this study by signing the section at the end of this form, I will ask some questions regarding pregnancy and the reasons that make mothers to utilize unskilled birth attendance. Your interview will take approximately twenty five (25) minutes. There are no risk factors involved in this study. This study is purely for academics. It has no direct benefit to you as a participant. The answers to the questions in this study will be kept confidential. No names will be used in the final write up. Your participation is strictly voluntary.

You are encouraged to ask any questions to clarify any issues at any time. If you later think you need more information you may call the researcher on 0708 798 756. In case of any further concerns or questions regarding the study and you would wish to talk to any other person other than the researcher, you are encouraged to contact:
1. DR. PRISCILLA N KABUE
DEPARTMENT OF COMMUNITY HEALTH NURSING
KENYATTA UNIVERSITY.
PHONE NUMBER: 0722466297.

2. DR REKHA R SHARMA
DEPARTMENT OF ZOOLOGICAL SCIENCES
KENYATTA UNIVERSITY
PHONE NUMBER: 0786954818.

Consent:
I agree to participate in this research

Signature of the participant/guardian/husband (if 15 to 18 years)………………….

Witness………………….
Signature ……………….     Date……………….
Appendix 2: Questionnaire for Postnatal mothers who delivered at home

SECTION A: RESPONDENT IDENTIFICATION DETAILS

This section is to be completed for each respondent interviewed

Questionnaire Number

Name of Sub County

Name of Health Facility

Date of interview. Day: Month: Year:

Time interview commenced.

Time interview ended.

Interviewers: Refer at ALL times to your survey manual for instructions. Remember to OBTAIN CONSENT from each respondent.
**Please complete this part of the form**

<table>
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<tr>
<th>Interviewer</th>
<th>Principal Investigator:</th>
<th>Data Entry Clerk</th>
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(To be administered to women aged 15-49yrs)

DEMOGRAPHIC CHARACTERISTICS

AGE
1. 15-19 YRS □
2. 20-29YRS □
3. 30-39YRS □
4. 40-49YRS □

MARITAL STATUS
1. Married □
2. Single □
3. Divorced □

HAVE YOU EVER ATTENDED SCHOOL?
Yes □ No □

EDUCATION LEVEL
1. None □
2. Pre-school □
3. Primary □
4. Secondary □
5. Tertiary (college/university) □
6. Post graduate □
7. Others (specify) ___________________________

RELIGION
1. Protestant □
2. Adventist □
3. Catholic □
4. Muslim □
5. Traditionalist □
6. Other (specify) ___________________________

OCCUPATION
1. Employed □
2. Self employed □
3. Not employed □
4. Others □

What is your husband’s or partner’s occupation?
1. Employed □
2. Self employed □
3. Not employed □
4. Others □

What is your main source of income?

What is your monthly income?

OBSTETRIC HISTORY
1. Have you ever given birth?
   Yes □ No □
If so, how many children?
Boys______ Girls ______

2. At what age did you conceive your first child?

3. Have you ever given birth to a child who was alive then later passed on?
   Yes □ No □
   If yes, at what age was the child? ______

4. Have you heard any information about pregnancy?
   Yes □ No □
   If yes, where did you get the information? (Multiple)
   a) Media (Radio/TV/Newspaper)
   b) Spouse
   c) Relatives
   d) Friends
   e) Health facility personnel
   f) Church/Mosque/Temple
   g) GoK staff
   h) NGOs/CBOs/Seminars
   i) CHVs
   j) Leaders
   k) Traditional Health Practitioners

**ANC**

1. Did you attend ANC during pregnancy?
   Yes □ No □
   If yes, how many times? ______

2. Where did you go for ANC?

3. At what gestation period did you start attending ANC
   1) ≤12weeks □
   2) 13-24weeks □
   3) >24weeks □

4. What services did you receive?
   a) Healthy nutrition ( )
   b) EMTCT ( )
   c) TT ( )
   d) Iron/folate supplementation to prevent anaemia ( )
   e) IPT and LLITN to prevent malaria/anaemia ( )
   f) Deworming ( )
   g) Family planning ( )
   h) Newborn care ( )
   i) Rest and hygiene ( )
   j) ANC profile ( )

5. What did you like about the services?
   ____________________________________________________________________
   ____________________________________________________________________
6. Were you informed about your EDD?
   Yes [ ] No [ ]

7. Did you seek help elsewhere other than health Centre during pregnancy?
   Yes [ ] No [ ]
   If yes where?
   a) TBA
   b) Traditional Healer
   c) Relative
   d) CHV
   e) Other specify

8. Why did you seek services elsewhere?

9. What services were you given?

**KNOWLEDGE ON PREGNANCY AND DELIVERY OUTCOME**

1. Did you seek help elsewhere other than health Centre during pregnancy?
   Yes [ ] No [ ]

2. Do you know any danger signs during pregnancy?
   Yes [ ] No [ ]
   If yes mention (list)

   a) Malaria in pregnancy ( )
   b) Lower abdominal pain ( )
   c) Reduced fetal movement ( )
   d) Difficulty in breathing ( )
   e) Vaginal bleeding ( )
   f) High blood pressure ( )
   g) Severe headache ( )
   h) Jaundice ( )
   i) Anemia ( )
   j) Other ( )
   k) List of other danger signs if any ( )
3. Do you know any danger signs during labour and delivery?  Yes ☐    No ☐

If yes mention,

- a) Suspected maternal oliguria (   )
- b) Obstetric hemorrhage (   )
- c) Prolonged/obstructed labour (   )
- d) Malpresentation (   )
- e) Pre-eclampsia/Eclampsia (   )
- f) Jaundice (   )
- g) Respiratory distress (   )
- h) Hypovolemic shock (   )
- i) Unconsciousness (   )
- j) Anemia (   )

4. Do you know any danger signs after delivery?  Yes ☐    No ☐

If yes, mention

- a) Post- Partum hemorrhage (   )
- b) Retained placenta (   )
- c) Birth asphyxia (   )
- d) Severe vaginal/cervical tear (   )
- e) Sepsis/severe systemic infection (   )
- f) Puerperal sepsis (   )
- g) Hypovolemic shock (   )
- h) Sore nipples (   )
- i) Retained placental segments (   )
- J) Anemia (   )

5. If you encounter this danger signs what will you do?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
________________________________________________

6. What preparations did you put in place for delivery?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
________________________________________________

7. What is the importance of skilled delivery?
____________________________________________________________________
____________________________________________________________________
____________________________________________
SOCIO-CULTURAL FACTORS

1. Who decided where to deliver?
   a. Husband
   b. Self
   c. Mother in-law
   d. Others (specify) ______________________

2. Have you delivered any of your children at home?  Yes ☐  No ☐
   If yes, why did you deliver at home?
   a) Abrupt labor
   b) Distance to the facility
   c) Poor roads
   d) Poverty
   e) Others (specify) ______________________

3. Is your perception towards health facility staff positive?
   a. Strongly agree
   b. Agree
   c. Disagree

4. What is your view about health facility delivery?
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

5. Did you get support from your partner or significant others?  Yes ☐  No ☐
   If yes, which support did you receive?
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

   If no, why did they not support you?
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

HEALTH SYSTEM FACTORS

1. What is the distance from your home to the nearest health facility using a motorbike?
   <5KM ☐  6—10KM ☐  11-25KM ☐  >25KM ☐

2. Are maternity services available in the facility?  Yes ☐  No ☐
If yes, what is your view on the services provided?

a) Good  
b) Bad  
c) Don’t know  
d) Others (specify)

3. Does the facility provide 24 hours service? Yes ☐  No ☐

4. Does the facility have adequate equipment and supplies?  
Yes ☐  No ☐  Don’t know ☐
Appendix 3: Focus Group Guide for Key Informants

Introduction [10 minutes]

Welcome to everyone, and thank you for being here today. My name is Lucy Natecho Namusonge and I am a masters of Public Health (Reproductive Health option) student at Kenyatta University. I am here today to learn from you. I am carrying out a study to find out the determinants of persistent utilization of unskilled birth attendance by women in Kakamega County. The researcher wishes to learn how those determinants influence the pregnancy outcomes and the birthing process.

Your participation is strictly voluntary, if you agree to participate in this study you will sign the section at the end of this form. I will be asking you some questions regarding pregnancy and the reasons that make mothers to utilize unskilled birth attendance. We want to hear your opinions and suggest strategies that can help in scaling up utilization of skilled birth attendance in Kakamega County.

There are no risk factors involved. It has no direct benefit to you as a participant. This study is purely for academics. I want you to feel safe and be honest. Everything that is said in this group today is confidential. That means that the things you share will not be shared hence your participation will not affect your relationship with anyone. Your name will never be used. We will only reference comments by saying “a member said this.” We will be taping our discussion so that we won’t miss any of the important ideas and opinions you share with us today. The tapes will be kept safe and confidential and only heard by us, and when we are finished with them for our research, we will erase them.

We’ll be spending about 2 hours together today. During that time, we want to be respectful of each other. Some of the rules we want to set for our discussion are:
1. One voice at a time.

2. Don’t interrupt others.

3. Everyone’s opinions are important. Be careful not to criticize anyone.

4. Confidentiality: what is shared in the meeting today should not be shared with other people.

Are there any other rules you can think of that are important?

You can answer the questions based on your own experience or what you understand are the experiences of others

Before we begin, let’s all get to know each other. We’ll go around the circle and each person to tell the group something about you, such as your age, and the size of your family.

You are encouraged to ask any questions to clarify any issues at any time. If you later think you need more information you may call the researcher on 0708 798 756. In case of any further concerns or questions regarding the study and you would wish to talk to any other person other than the researcher, you are encouraged to contact:
1. DR. PRISCILLA N KABUE
DEPARTMENT OF COMMUNITY HEALTH NURSING
KENYATTA UNIVERSITY.
PHONE NUMBER: 0722466297.

2. DR REKHA R SHARMA
DEPARTMENT OF ZOOLOGICAL SCIENCES
KENYATTA UNIVERSITY
PHONE NUMBER: 0786954818.

Consent:
I agree to participate in this research

Signature of the participant/guardian/husband (if 15 to 18 years)…………………..

Witness………………….. Signature ………………. Date………………..


| Date of discussion: __/__/__/__ | Moderator: |
| Note-taker: | |
| Time start: | No. Participants at start |
| Time stop: | Participants at stop: |

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Focused Group Discussion (FGD) guide

KEY INFORMANTS (CHEWs and CHVs)

1. What is your role in promoting utilization of SBAs
2. In your opinion, what is the level of utilization of SBAs in your catchment area?
3. What challenges do you face in promoting utilization of SBAs in your catchment area?
4. Are you conversant with the government policy concerning SBAs
5. In your catchment area, are there systems you have put in place to assist a pregnant in case of an emergency?
6. Are there any interventions in your catchment area aimed at increasing utilization SBAs?
7. What challenges do you face in enhancing utilization of skilled birth attendance in your catchment population?
8. Are there any social, cultural, economic, and health system barriers related to SBA utilization?

MOTHERS WHO UTILIZED UBAs

1. What are the myths and perceptions in your community hindering you from utilization of SBAs?
2. What is your view on delivering by skilled birth attendance?
Appendix 4: Approval from the KU Graduate School

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubys@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810991 Ext. 57530

Internal Memo

FROM: Dean, Graduate School

TO: Ms. Namwenge Lacy Natecho
C/o Environmental Health Dept.
Kenya University

DATE: 29th July, 2015

REF: Q139/CTY/PT/24338/13

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge the receipt of your revised Research Proposal as per recommendations raised by the Graduate School Board of 17th June, 2015 entitled “Women’s Persistent Utilization of Unskilled Birth Attendance: A Study of Mothers in Kakamega County, Kenya”.

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking Forms per semester. The form has been developed to replace the progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

REUBEN MURIuki
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Environmental Health Dept.

Supervisors:

1. Dr. Priscilla N. Kabue
C/o Nursing Dept.
KENYATTA UNIVERSITY

2. Dr. Rekha R. Sharma
C/o Zoological Sciences Dept.
KENYATTA UNIVERSITY

RB/cao

Committed to Creativity, Excellence & Self-reliance
Appendix 5: Approval from the Kenyatta University Ethics Review Committee

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Email: chairman_kuerc@kunac.ke
secretary_kuerc@kunac.ke
eerc2006@gmail.com
Website: www.ku.ac.ke

F. O. Box 43844 - 00100 Nairobi
Tel: 8710901/12
Fax: 8711575

Our Ref: KU/R/COMM/51/5/31
Date: 31st August, 2015

Namuonge Lucy Natecho
Kenyatta University,
P.O Box 43844, Nairobi

Dear Natecho,

RE: APPLICATION NUMBER KU/R/595/362- “WOMEN’S PERSISTENT UTILIZATION OF UNSKILLED BIRTH ATTENDANCE: A STUDY OF MOTHERS IN KAKAMEGA COUNTY, KENYA.”

1. IDENTIFICATION OF PROTOCOL
The application before the committee is with a research topic: “Women’s persistent utilization of unskilled birth attendance: A study of mothers in Kakamega County, Kenya.” received on 5th August, 2015 and discussed on 25th August, 2015.

2. APPLICANT
Namuonge Lucy Natecho

3. STUDY SITE
Kakamega County, 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 APPROVED that the research may proceed for a period of ONE year from 31st August, 2015.

5. ADVICE/CONDITIONS
i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.
iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
iv. Submit an electronic copy of the protocol to KU-ERC.

If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

PROF. NICHOLAS K. GIKONYO
CHAIRMAN ETHICS REVIEW COMMITTEE

[Signature].......................... Dated this day of.................................. 2015.
cc. Vice-Chancellor
Appendix 6: Authority from the National Commission for Science, Technology and Innovation

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

9th Floor, Uhuru House
Uhuru Highway
P.O. Box 36623-00100
NAIROBI, KENYA

Telephone: +254-20-2213471, 224349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretarynacosti@kcoke
Website: www.nacosti.go.ke
When replying please quote
Ref: No.

NACOSTI/P/15/1398/7413

Lucy Narecho Namusonge
Kenyatta University
P. O. Box 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Persistent utilization of unskilled birth attendance: A study of mothers in Kakamega County” I am pleased to inform you that you have been authorized to undertake research in Kakamega County for a period ending 16th September, 2016.

You are advised to report to the County Commissioner, the County Director of Education and the County Coordinator of Health, Kakamega County 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. S. K. LANGAT, OGW
FOR: DIRECTOR GENERAL/CEO

Copy to:

The County Commissioner
Kakamega County.

The County Director of Education
Kakamega County.
Appendix 7: Authority from the Ministry of Education Science & Technology

MINISTRY OF EDUCATION SCIENCE & TECHNOLOGY

STATE DEPARTMENT OF EDUCATION


Lucy Natecho Namusonge
P. O. Box 3195 0 00200
NAIROBI

RE: RESEARCH AUTHORIZATION

The above has been granted permission by National Council for Science & Technology
vide letter Ref. NACOSTI/P/15/1398/7413 to carry out research on "A persistent
utilization of unskilled birth attendance: a study of mothers in Kakamega
County", for a period ending 16th September, 2018.

Please accord her any necessary assistance she may require.

MURERWA S. K. (MRS)
COUNTY DIRECTOR OF EDUCATION
KAKAMEGA COUNTY
Appendix 8: Authority from the Ministry of Interior & Co-ordination of National Government

REPUBLIC OF KENYA

THE PRESIDENCY

MINISTRY OF INTERIOR & CO-ORDINATION OF NATIONAL GOVERNMENT

Telegrams
Telephone: 056-31131
Fax: 056-31133
Email: cckakamega12@yahoo.com

When replying please quote

REF: ED.12/1/VOL.II/4

COUNTY COMMISSIONER
KAKAMEGA COUNTY
P.O BOX 43-50100
KAKAMEGA

DATE: 21ST SEPTEMBER, 2015

LUCY N. NAMUSONGE
KENTATTA UNIVERSITY
P.O. BOX 43844 -00100
NAIROBI

RE: RESEARCH AUTHORIZATION


I am pleased to inform you that you have been authorized to carry out the research on the same.

WILSON MWANGI
FOR: COUNTY COMMISSIONER
KAKAMEGA COUNTY
Appendix 9: Map of Kakamega County and the Study Area

*Mumias* has since been divided into 2 administrative sub counties namely; Mumias and Matungu whereas Kakamega *Central* divided into Lurambi and Navakholo sub counties.