

**FACTORS INFLUENCING UPTAKE OF SKILLED DELIVERIES AMONG WOMEN  
OF REPRODUCTIVE AGE IN NYATIKE SUB-COUNTY, KENYA**

**BY  
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**DECLARATION**

I declare that this thesis is my original work and has not been presented for a Masters’ degree in Maseno University or in any other university.

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## **DEDICATION**

To my wife; Grace Njambi Mugo, My son; Samuel Neilson Gordon and to my parents; Mr/ Mrs Okomo whose encouragement saw me all throughout my studies and to God for His favour, love and blessings.

## ABSTRACT

Globally and in Kenya, Maternal Mortality Ratio remain high at 546/100,000 and 362/100,000 live births respectively. In Kenya, skilled birth attendants (SBA) are estimated at 62% and 68% in Nyatike. Factors influencing skilled birth attendants in still unknown in Nyatike. The specific objectives of this study were to assess the level of knowledge on safe motherhood, socio-demographic characteristics, health workers' attitude, quality of skilled delivery services and association with uptake of skilled birth attendance among women of reproductive age in Nyatike Sub-County. This was a mixed methods cross-sectional study involving a sample 367 women aged 15-49 years old who had a live birth and living in Nyatike Sub-county. Quantitative data were collected using structured questionnaires, 20 key informant interviews and 6 Focus Group Discussions (FGDs) were conducted. Qualitative data were analysed using content analysis while quantitative data were analysed using chi-square test and binary logistic regression. The prevalence of skilled delivery was 32.2% (118/367). Of the 367 women interviewed, 293 (80.3%) were aware of the nearest health facility. Amongst those who were aware of nearest health facility, (32%, n=94) utilized SBA. Students were less likely to utilize SBA compared to farming women (40.2% vs 27.3%; OR=0.3; 95% CI=0.1-0.8,  $p=0.023$ ). Women with high school education were 2.9 times more likely to use SBA (high school vs primary; OR=2.9; 95% CI=1.1-8.2,  $p=0.039$ ). Women who perceived health workers' attitude to be 'very friendly' were 2.8 times more likely than those with no opinion to use SBA (40.5% vs 19.7%, OR=2.8; 95% CI=1.3-6.1,  $p=0.010$ ). Only 40% of health facilities surveyed provided quality care Choice of place of delivery was perceived to be due to availability of free professional care for both mother and baby, high standard of hygiene and equipment, free referral services if complications arise and privacy and confidentiality at the health facilities. Health education in girls' schools, a reversal of health worker attitudes towards pregnant women and making the delivery processes respond to women needs would improve uptake. The study recommends prioritizing interventions and strategies aimed at up-scaling uptake of skilled deliveries in Nyatike Sub-County and beyond.

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## LIST OF ABBREVIATIONS AND ACRONYMS

<b>ANC</b>	-	Ante-Natal Care
<b>CDC</b>	-	Center for Disease Control and Prevention
<b>CEmOC</b>	-	Comprehensive Emergency Obstetric Care
<b>DFID</b>	-	Department for International Development
<b>DHIS</b>	-	District Health Information System
<b>EmOC</b>	-	Emergency Obstetric Care
<b>FGD</b>	-	Focus Group Discussions
<b>HIV</b>	-	Human immunodeficiency virus
<b>KDHS</b>	-	Kenya Demographic and Health Survey
<b>KNBS</b>	-	Kenya National Bureau of Statistics
<b>KSPAS</b>	-	Kenya Service Provision Assessment
<b>MNPI</b>	-	Maternal & Neonatal Programme Efforts & Index
<b>MMR</b>	-	Maternal Mortality Rates
<b>MDGs</b>	-	Millennium Development Goals
<b>MVA</b>	-	Manual Vacuum Aspiration
<b>OR</b>	-	Odds Ratio
<b>PAC</b>	-	Post Abortal Care
<b>SD</b>	-	Standard Deviation
<b>SDG</b>	-	Sustainable Development Goal
<b>SBA</b>	-	Skilled Birth Attendance
<b>SPSS</b>	-	Statistical Package for Social Scientist
<b>SSA</b>	-	Sub-Saharan Africa

<b>TBA</b>	-	Traditional Birth Attendants
<b>UNDP</b>	-	United Nations Development Programme
<b>UN</b>	-	United Nations
<b>UNFPA</b>	-	United Nations Population Fund
<b>UNICEF</b>	-	United Nations Children's Fund
<b>WHO</b>	-	World Health Organization

## OPERATIONAL DEFINITIONS

**Skilled birth attendant:** 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. Ideally, skilled attendants live in, and are part of, the community they serve. They must be able to manage normal labor and delivery, perform essential interventions, start treatment and supervise the referral of mother and baby for interventions that are beyond their competence or not possible in a particular setting.

**Skilled attendance (or Skilled delivery, Skilled Birth Attendance, Skilled care):** A skilled attendant operating within an enabling environment or health system capable of providing care for normal deliveries as well as appropriate emergency obstetric care for all women who develop complications during childbirth.

**Safe motherhood:** Safe motherhood encompasses a series of initiatives, practices, protocols and service delivery guidelines designed to ensure that women receive high-quality gynaecological, prenatal, delivery and postpartum care, in order to achieve optimal health for the mother, foetus and infant during pregnancy, childbirth and postpartum.

**Traditional birth attendant (TBA):** A community-based provider of care during pregnancy and childbirth. TBAs are not trained to proficiency in the skills necessary to manage or refer obstetric complications. TBAs are not salaried, accredited members of the health system. Although they are highly esteemed community members and are often the sole providers of delivery care for many women, they are not included in the definition of a skilled attendant.

**Enabling environment:** In the context of safe motherhood, describes 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. It essentially means a well-

functioning health system, including equipment and supplies; infrastructure and transport; electrical, water and communication systems; human resources policies, supervision and management; and clinical protocols and guidelines.

**Maternal morbidity:** Refers to serious disease, disability or physical damage such as fistula and uterine prolapse, caused by pregnancy-related complications.

**Maternal mortality:** The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the 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 measures the risk of maternal death among pregnant or recently pregnant women. A more precise measurement would be the number of maternal deaths per 100,000 pregnancies, to account for those who die from unsafe abortions.

**Women of reproductive age:** Women of childbearing ages between 15 to 49 years.

All of the above working definitions are drawn from official guideline documents including WHO Maternal and Newborn survival and health guidelines (2006), Integrating management of pregnancy and childbirth (WHO, 2004) and UNFPA Safe Motherhood program (2007).

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## CHAPTER ONE: INTRODUCTION

### 1.1 Background

Childbirth is a fundamental part of human existence. Complications during childbirth can lead to death or disability of a mother or a child. Approximately 830 women die from pregnancy- or childbirth-related complications around the world every day, with 88 % of these deaths occurring in Africa and Asia. Sub-Saharan Africa suffers from the highest maternal mortality ratio – 546 maternal deaths per 100,000 live births, or 201,000 maternal deaths a year. This is two thirds (66%) of all maternal deaths per year worldwide (WHO, 2015). From 1990 to 2015, the global maternal mortality ratio declined by 44 per cent – from 385 deaths to 216 deaths per 100,000 live births, according to UN inter-agency estimates. This translates into an average annual rate of reduction of 2.3 per cent. While impressive, this is less than half the 5.5 per cent annual rate needed to achieve the three-quarters reduction in maternal mortality targeted for 2015 in Millennium Development Goal 5 (UNICEF, 2015).

Kenya has shown encouraging improvements in reproductive health outcomes over the period 2003-2014, (KDHS, 2014). The KDHS 2014 shows a decrease of the maternal mortality rate from 488 to 362 per 1,000 live births. However, despite this progress, Kenya could not achieve maternal Millennium Development Goals ( MDG), (KDHS, 2014). MMR of 362/100,000 live births as estimated by KDHS in 2014 is still high and the recent estimates of WHO,UNICEF,UNFPA, the World Bank Group and UN Population Division also highlight insufficient progress (KRMCAHIF, 2016). Most maternal deaths occur during labour, delivery and the immediate postpartum period. Obstetric haemorrhage is the main direct cause accounting for 27% of maternal deaths, infections (10%), eclampsia (16%), unsafe abortion (10%), and obstructed labour (8%) (Lale *et al.*, 2014). Majority of maternal deaths in Kenya are



due to obstetric complications that could have been prevented with adequate medical care during and after delivery (MOPHS, 2013). As such, inadequate access to integrated, affordable and quality reproductive health services by women of reproductive age still pose a challenge to Kenya's healthcare provision.

The safe motherhood initiative launched in Nairobi in 1987, aimed at raising awareness about the number of women dying each year from complications of pregnancy and childbirth, and to challenge amelioration of the situation (Starrs, 2006). There are clear strategies and specified interventions for the reduction of maternal morbidity and mortality, often referred to as the Pillars of Safe Motherhood. These include: safe delivery, antenatal care, postnatal care and family planning (Hogberg, 2005). Safe delivery ensures that all deliveries are attended to by persons with the right knowledge, skills, equipment and also provide post-partum care to mother and baby (Kabir, 2007). In an effort to reduce maternal mortality, the indicators of progress are Maternal Mortality Ratio (MMR) and proportion of births attended by skilled attendants (Cross, Bell, & Graham, 2009). MMR is 2 times higher in the rural Kenya than Urban areas (KDHS, 2014), and Nyatike Sub-County, Kenya was not an exception. The proportion of births attended by skilled birth attendants is below the national aggregates in Nyatike Sub-County since 68% of the deliveries occur at home or at the Traditional Birth Attendants (DHIS, 2012). However, knowledge on safe motherhood among women of reproductive age in Nyatike Sub-County, Kenya still remains unclear. As such, this study was designed to assess knowledge on safe motherhood among women of reproductive age in Nyatike Sub-County, Kenya.

Globally, one third of births take place at home without the assistance of a skilled attendant (Anwar *et al.*, 2008). In Africa, less than 50% of births are attended by a skilled health worker despite an increase from 44% to 62% between 1990 and 2015 in all developing regions (WHO,

2015). Consequently, two million women have died in Africa during childbirth since 2000 (WHO, 2012). According to Kenya Demographic Health Survey (2014), the percentage of medically assisted deliveries has fallen consistently from 50% in 1993 to 44% of births in 2008; but subsequently increased to 62% in 2014 (KDHS, 2014).

In Kenya, skilled birth attendants' definition is restricted to doctors, nurses and midwives (Wanjira, Mwangi, Mathenge, Mbugua, & Ng'ang'a, 2011). Traditional Birth Attendants are excluded from this definition as most of them (80%) lack formal training in pregnancy and birthing related matters (Wanjira *et al.*, 2011). Skilled attendants seem to be in larger numbers in urban areas where the numbers of health facilities are also more than in the rural areas (KDHS, 2014). This creates a challenge, especially in access to integrated, affordable and quality reproductive health services in rural areas such as Nyatike Sub-County. Quality of reproductive health services in Nyatike Sub-County, Kenya is unclear. As such this current study sought to determine the association between quality of skilled delivery services and its uptake in women of reproductive age in Nyatike Sub-County, Kenya.

Kenya's government run health facilities are under-financed and characterized by shortages of most basic essentials including a dire shortage of personnel where only 15% of all Kenyan health workers providing maternal health services have received any type of in-service training in treating delivery-related complications and yet according to KDHS, 2014, 62% of expectant mothers access the facilities during delivery (Wanjira *et al.*, 2011). Payment for health care services in Kenya is both out-of-pocket where the clients pay cash and also third party system where clients who subscribe to insurance fund use their cover to pay for the medical services (Wanjira *et al.*, 2011). Recently the government directed that pregnant women should not pay delivery fees at any government run health facilities (Wanjira *et al.*, 2011). Efforts to reduce

maternal mortality and morbidity must address societal and cultural factors that affect women's health and their access to services (KSPAS, 2006). The socio-demographic barriers influencing the uptake of skilled deliveries in women of reproductive age is thus an important aspect for consideration. However, the socio-demographic barriers influencing uptake of skilled delivery among women of reproductive age in Nyatike Sub-county are not known.

## **1.2 Problem Statement**

Maternal mortality is one of the greatest divisions between developed and un-developed countries. 99% of all maternal deaths are estimated to occur in the developing world. By far, the greatest burden of this tragedy is felt by Sub-Saharan African countries, which account for 66% of the global total pregnancy related mortality (WHO, 2015). Kenya ranks among the top 30 in the list with huge regional disparities (WHO, 2015) and rates as high as 3,795 per 100,000 in some areas (KDHS, 2014). What cannot be seen through mere statistics are the devastating effects of Kenyan communities in which the death of a parent can lead to the breakdown of family units and a crucial loss of income for already impoverished households.

Increasing the proportion of babies that are delivered in health facilities is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infection that can cause morbidity and mortality to either the mother or the baby (KDHS, 2014). The results of the KDHS (KDHS, 2014) indicate that 62% of births in Kenya are delivered in a health facility, while 38% of births take place at home.

### **1.3 General Objective**

To identify factors that influence uptake of skilled deliveries by women of reproductive age in Nyatike Sub-County, Kenya.

### **1.4 Specific Objectives**

- 1.4.1 To assess the level of knowledge on safe motherhood among women of reproductive age on in Nyatike Sub-County, Kenya.
- 1.4.2 To assess the influence of socio-demographic characteristics on access to skilled delivery services by women of reproductive age in Nyatike Sub-County, Kenya.
- 1.4.3 To establish the association between health workers attitude and uptake of skilled Delivery services by women of reproductive age in Nyatike Sub-County, Kenya.
- 1.4.4 To establish the association between quality of skilled delivery services and its uptake by Women of reproductive age in Nyatike Sub-County, Kenya.

### **1.5 Research Questions**

- 1.5.1 What is the level of knowledge on safe motherhood among women of reproductive age in Nyatike Sub-County, Kenya?
- 1.5.2 What is the influence of socio-demographic characteristics on access to skilled delivery services by women of reproductive age in Nyatike Sub-County, Kenya?
- 1.5.3 What are the associations between health workers attitude and behaviour on uptake of skilled delivery services by women of reproductive age in Nyatike Sub-County, Kenya?
- 1.5.4 What are the associations between quality of skilled delivery service and its uptake by women of reproductive age in Nyatike Sub-County, Kenya?

## **1.6 Significance of the Study**

In Kenya maternal mortality ratio still remains high at 362 per 100,000 live births against the targets of Sustainable Development Goals (SDG) and global goals to reduce maternal mortality ratio to less than 70 per 100 000 live births (KDHS, 2014). Furthermore, only 62% of Kenyan women received assistance from a health professional during delivery. In Nyanza, 67% of women and 56% of women in Migori County receive this assistance thus leading in the Nyanza region (KDHS, 2014).

While many studies have provided perspectives on issues concerning delivery and family planning, they have also generated more questions and more opportunities for further research to help come up with strategies to decrease maternal mortality and increase chances of child survival. The research and findings of the current study could steer the Kenyan government to play a more active role in making sure skilled delivery services become readily available to all women of reproductive age.

The third Sustainable Development Goal (SDG) aims to reduce the global maternal mortality ratio to less than 70 per 100 000 live births with no Country having a Maternal Mortality Rate of more than twice the global average (UN, 2015). This study therefore has established some of the factors that influence skilled delivery in Nyatike Sub-County, Kenya, to provide information which will be a guide to decision makers in Nyatike and beyond to help identify interventions to increase the coverage on uptake of skilled delivery and subsequently reduce maternal mortality, infant mortality and morbidity

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Overview of Skilled Birth Deliveries**

Globally, it is estimated that 34% of mothers deliver with no skilled attendant; this means there are 45 million births occurring at home without skilled health personnel each year. Skilled attendants assist in more than 99% of births in developed countries compared with 62% in developing countries (WHO, 2015). Skilled attendance at delivery is one of the key indicators to reflect progress towards the Sustainable Development Goal (SDG) of improving maternal health (UN, 2015). The target under Sustainable Development Goal 3 is to reduce the global Maternal Mortality Ratio (MMR) to less than 70 per 100 000 births, with no country having a maternal mortality rate of more than twice the global average (UN, 2015). According to SDG 3, about 40% of all births needed to be assisted by a skilled attendant by 2005, with 50% coverage by 2010 and 60% by 2015 among countries with very high maternal mortality.

Globally, the goal was to have 80% of all births assisted by skilled attendants by 2005, 85% by 2010 and 90% by 2015 (UN, 2010). A study from South India showed that assistance during delivery could reduce the risk of obstructed labor and it was also associated with the place of delivery (Navaneetham & Dharmalingam, 2000). Another study also presented the role of skilled birth attendants in preventing direct and indirect cause of maternal deaths such as, infection, shock, blood loss, convulsions, and surgical procedures, such as caesarean delivery (AbouZahr, 2003).

In contrast to the principles of WHO's Safe Motherhood Initiative, hospital deliveries only account for a minority of births in many regions of Sub-Saharan Africa (SSA). As a consequence, maternal mortality rates (MMR) are among the highest in Sub-Saharan Africa, comparing unfavorably with other regions that have relatively constrained resources, such as

South-East Asia and South America (Hogan *et al.*, 2010). In Kenya, the 2014 MMR was estimated at 362 deaths per 100 000 births like other regions of Africa, 62% of births in Kenya are hospital deliveries (KDHS, 2014). The Kenya Demographic and Health Survey (2014) reported that children born in rural areas are twice more likely to be born at home than urban children. The Kenyan average for hospital deliveries is 62%, in Migori County its 56% leading in the former Nyanza region and is in top 10 counties list of worst performing in Kenya with MMR of 673 per 100,000 live births (KDHS, 2014), while in Nyatike Sub-County, where the study was conducted, only 32% of children were born in health facilities. The MMR for the Sub-County is 840 per 100,000 births (DHIS, 2012).

The majority of maternal deaths in SSA are associated with birth complications related to lack of Skilled delivery, with only 10% of maternal deaths attributable to infection or disease (Hogan *et al.*, 2010). Factors associated with unskilled deliveries include the education level and wealth of the mother, with 84% of children whose mothers have no education being born at home, compared with 30% of those whose mothers have secondary education (KDHS, 2014). Controlled hospital environments, hygienic conditions, skilled personnel and availability of resources to manage possible complications are considered corner-stones for the achievement of safe motherhood. The influence of quality care on uptake of skilled delivery in Nyatike Sub-County is not known.

Despite support for this health message by Ministries of Health guidelines and international programs such as the United Nations Development Programme (UNDP), United Nations Children Fund (UNICEF) and the Centre for Disease Control and Prevention (CDC), there is little evidence of fundamental change in Kenyan maternal health statistics in the past decade.

Identifying community attitudes and current practices regarding skilled deliveries are an important starting point for behavior change.

## **2.2 Knowledge on Safe Motherhood among Women of Reproductive Age**

In Kenya, the World Health Organization (WHO) focused antenatal care guidelines, which recommend at least four antenatal visits for women with low-risk pregnancy and provide evidence-based content for each visit, were adopted and implemented in 2001 (Atwiine *et al.*, 2007). Despite a 92% national average for at least one ANC visit in 2008, the maternal mortality rate in Kenya remains at 362 maternal deaths per 100,000 live births.

In a study conducted in Tanzania, it was indicated that improving coverage of health facilities needs to be done by raising awareness for both men and women on danger signs during pregnancy/delivery and also by strengthening counselling on facility delivery and individual birth preparedness (Mushi, Mpembeni, & Jahn, 2007).

It is crucial that women are made aware of the importance of the use of skilled delivery during birth. This is because it is only when they are aware of its importance that they will be willing and prepared to use it. Skilled delivery has been established to save lives of mothers and its use should be encouraged by health personnel at antenatal clinics.

There is thus a need to really invest in the creating awareness of women on dangers associated with pregnancy and the usefulness of skilled delivery.

## **2.3 Socio-demographic Characteristics Effect on Access to Skilled Birth Attendance**

Maternal mortality and morbidity are directly and indirectly related to societal and cultural factors that impact women's health and their access to services (Mat, Duan-Rung, & Song-Lih, 2016). Thus, lack of access and control over resources, limited educational opportunities, poor



nutrition, and lack of decision-making contribute significantly to adverse pregnancy-related outcomes (Tsegay, 2010). Review of the international literature emphasizes on factors like cultural beliefs, socio-demographic status, women's autonomy, economic conditions, physical and financial accessibility, disease pattern and health service issues as important determinants of the use of maternal health care services (AbouZahr, 2003). A study in India pointed out that the low utilization of maternity services seems to be due to low levels of household income, high illiteracy and ignorance, and a host of traditional factors (Shariff & Singh, 2002). In India, a study of analysis of choice of delivery location showed that maternal and, paternal education, and scheduled caste status were the predisposing factors that determined the choice of private facilities, public and home deliveries (Thind, Mohani, Banerjee, & Hagigi, 2008).

A similar study in Pakistan described poor socio-economic status, lack of physical accessibility, cultural beliefs and perceptions, low literacy level of the mothers and large family size as the leading causes of poor utilization of primary health care services (Babar & Hatcher, 2004). In another study from Ethiopia, it was observed that the use of maternal health services can be influenced by socio-demographic characteristics of women, cultural context, and accessibility to these services (Mekonnen & Mekonnen, 2003). A study in Pakistan showed that family size, parity, educational status and occupation of the head of the family were also associated with health seeking behavior in addition to age, gender and marital status (Babar & Hatcher, 2004). A study in rural Tanzania identified that ethnicity, gender of the household head, mother's education, and mother's age at child birth, socio-economic and quality of services status were important independent factors in determining the choice of delivery place (Mrisho *et al.*, 2007). Sudden onset of labor or short labor was affecting decisions towards selecting the delivery place and selecting health facility for delivery was perceived to be more desirable for prolonged labor

(Mrisho *et al.*, 2007). In summary, the above studies have identified that the main determinants for utilization of maternal health care services include maternal education, ethnicity, gender of the household head, mother's education, mother's age at child birth, socio-economic status, parity, accessibility and quality of health service, decision making power and experience of previous obstructed labor. In Nyatike Sub-County, only 32% of pregnant women deliver in health facilities implying the majority 68% do not benefit from skilled birth delivery (DHIS, 2012). Knowledge is still limited on factors associated with SBA in Nyatike and there is still need to continue to monitor progress towards achieving SDG targets on maternal and child health in such Sub-counties.

#### **2.4 Health Staff Attitude that Affect Uptake of Skilled Delivery**

Investing in human resources is crucial for improving skilled attendance at birth (UNFPA, 2004). Critical issues include “brain drain,” salary and benefits, supervision and management, and skills maintenance (UNFPA, 2004). Upgrading delivery care often begins with improving the quality of services offered in facilities (UNFPA, 2004). When facilities provide quality services, they become widely used and trusted by community members (UNFPA, 2004). The lack of doctors, nurses and midwives poses serious problems for developing countries (Yohannes *et al.*, 2009). Countries like Egypt, Malaysia, and Jordan with reduced maternal mortality emphasized on health system improvement in rural areas with increasing availability of skilled attendants, highly supervised and free referral to specialist and essential obstetric care and maintenance of standards in the private sector (Abdou, Johanne, & Siri, 2011). Urban areas often offer a higher quality of care than rural communities, mainly due to proximity and accessibility to facilities and modern communication systems (Oladipo, 2014).

The shortage of health personnel has greatly contributed to the negative attitude of health care staff (Inyang & Walker, 2016). In some setting, women feel reluctant to go for health facility-delivery because of negative attitudes of the health professionals which include: poor reception, caning shouting, and refusing to attend to women in pain (especially during weekends and at night) (Enchill, 2010). Women place value on delivery by a traditional birth attendant (TBA) (Bidhan *et al.*, 2016) and the society respects and recognizes the role played by TBAs in communities and their attendance is highly valued because they provide services that the formal health system does not, including postpartum care in the home (Bidhan *et al.*, 2016). Some of the women believe that childbirth-related complications are caused by witchcraft, and the TBAs are perceived as better equipped to intervene in these cases (Kristen, Mark, & Marleen, 2006).

The women have the perception that the health facility is a harsh setting for childbirth (Kristen *et al.*, 2006). In a study done on low use of skilled attendants' delivery services in rural Kenya (Kristen *et al.*, 2006), one community health worker said, "They leave you alone during your labour pain at the health centre; the TBA stays with you and helps you to deal with the pain." This perception is due to under-staffing situation of the health facilities (Kristen *et al.*, 2006).

Despite this plethora of knowledge, the association between healthcare workers attitude and uptake of skilled delivery in women of reproductive age in Nyatike Sub-County, Kenya remains unknown. As such, this study determined the association between healthcare workers attitude and uptake of skilled delivery in women of reproductive age in Nyatike Sub-County, Kenya.

## **2.5 Quality of Skilled Ddelivery Services in the Health Facilities**

Quality of care "involves providing a minimum level of care to all pregnant women and their newborn babies and a higher level of care to those who need it. This should be done while

obtaining the best possible medical outcome and while providing care that satisfies women and their families and their care providers” (Pittrof, Campbell, & Filippi, 2002). There is inadequate data on quality and assessment of performance of health facilities to offer quality services especially in Nyatike Sub-County where uptake of SBA is still low.

Investing in human resources is crucial for improving skilled attendance at birth. Critical issues include “brain drain,” salary and benefits, supervision and management, and skills maintenance. Upgrading delivery care often begins with improving the quality of services offered in facilities. When facilities provide quality services, they become widely used and trusted by community members (UNFPA, 2004). The lack of doctors, nurses and midwives poses serious problems for developing countries (UNFPA, 2004). The human resource crisis is real, and the challenge is to post (and keep) skilled and committed providers in district level facilities (UNFPA, 2004). There are too few skilled attendants to provide round-the-clock services at many rural health facilities (Prakasamma, 2009).

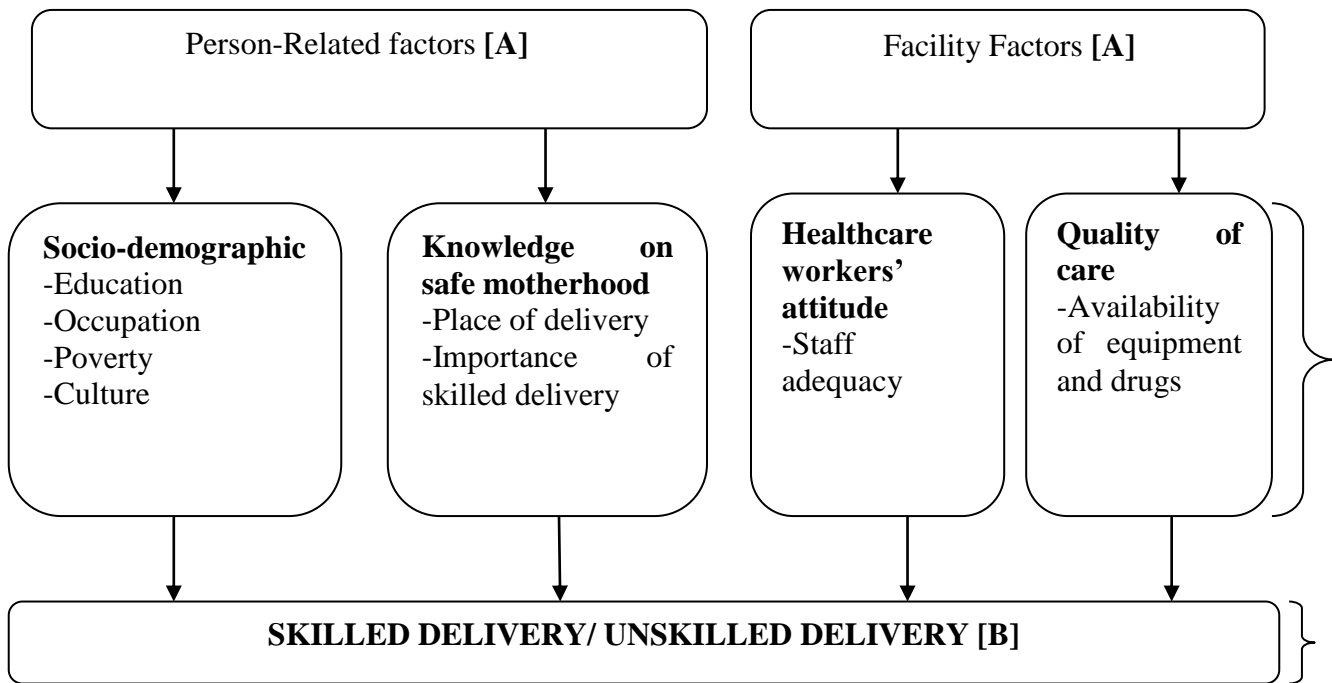
Ghana’s free delivery care policy was seen as an effective approach to an important problem as was believed to have substantially increased utilization of skilled care for delivery (Enchill, 2010). However, this proved to be wrong because even when the delivery-fee-exemption policy had increased utilization of delivery services, poor quality of care, low staff strength, poverty, transportation, long distances to health facilities, socio-cultural barriers, and the custom of using traditional birth attendant still remains and these hinder access to skilled delivery (Witter, Adjei, Armar-Klemesu, & Graham, 2009)

The Kenya National Guidelines for quality Obstetric and prenatal care, (2004) addresses needs of service provider that if met would contribute to facilitating the provision of quality services that

in turn address rights of the clients. These include offering training, infrastructure, supplies, guidelines, encouragement, respect and information (MOH, 2004). As much as there are these efforts by the MOH, the association between quality of skilled delivery services and its uptake in women of reproductive age in Nyatike Sub-County, Kenya remained unknown. The current study therefore determined the association between quality of skilled delivery services and its uptake in women of reproductive age in Nyatike Sub-County, Kenya.

## **2.6 Conceptual Framework**

Factors that influence uptake of skilled birth attendance are either person or facility related. The person-related factors include mother's socio-demographic characteristics, their educational background and religious environment and how it supports the use of health care facility before, during and after child birth. The facility-related factors include the attitude of health care professional towards women who seek biomedical attention during birth and post-natal care, absence of skilled attendance, delay in decision-making, place of residence and quality of delivery services. All the above points directly and indirectly affect the uptake of skilled delivery by women of reproductive age. When these factors hinder uptake of skilled birth and complications are not managed, then it will certainly lead to infant and/or maternal morbidity and mortality (Fig. 2.1).



**Figure 2.1 Conceptual Framework**

**KEY: A-Independent Variables, B- Dependent Variable**

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Study Site**

This study was conducted in Nyatike Sub-County, Migori County located between latitudes South  $1^{\circ} 6' 51''$  S, North  $0^{\circ} 45' 34''$  S, and longitudes West  $34^{\circ} 2' 24''$  E, East  $34^{\circ} 21' 42''$  E with a minimal elevation of 1133m and a maximal elevation of 2254m land/water, mainland, Lake Victoria (Appendix 1).

It borders Mbita Sub-counties and Ndhiwa Sub-Counties to the north, the southern boundary are shared with Migori, and the republic of Tanzania, it borders Migori to the south eastern side. The Sub-County was carved out of greater Migori Sub-County in 2009. There are twenty health facilities in the Sub-County. The Sub-County has 3 administrative wards namely, Kaler, Got Kachola and Kadem. In Migori 61.9% of women delivered in health facilities, 61.4% sought advice or treatment was sought from a health facility or Provider (KDHS, 2014).

### **3.2 Study Design**

This was a descriptive cross-sectional study where both quantitative and qualitative research methods were employed.

### **3.3 Study Population and Sampling Unit**

The study population was women of reproductive age of Nyatike Sub-County, Health Facility incharges, TBAs, CHWs, Health workers and the sampling unit were mothers who had a live birth and permanent residents of Nyatike Sub-County within the data collection period.

### 3.4 Sample Size Determination

Fisher *et al.*, 1998 formula for sample size determination was used since the study population (women of reproductive age) was greater than 10,000. The formula used was:

$$n = Z^2 pq/d^2$$

Where,

- $n$  = the desired sample size (if the target population is > 10,000).
- $Z$  = the standard normal deviate at the required confidence level.
- $p$  = the proportion in the target population estimated to have characteristics being studied.

In this study, the proportion in the target population was 32%, since it was the prevalence of skilled birth attendance in Nyatike Sub-County, Kenya (DHIS, 2012)

- $q = 1-p = 0.68$
- $d$  = the level of statistical significance set = 0.05
- $Z$  = Assuming 95% confidence interval  $Z = 1.96$

$$n = 1.96^2 (0.32) (0.68)/0.05^2 = 334.37$$

A sample population of 10% was added as non-responders. Therefore, the total sampled population was  $334 + 33$  (10% of 334) = **367**.

Six FGDs were conducted including two FGDs each including traditional attendants (TBAs), Community Health Worker (CHW) and women of reproductive age who gave birth one year before the study date and didn't participate in the structured questionnaire interview. Each FGD constituted of 6-12 members, a moderator and note taker.



### **3.5. Inclusion and Exclusion Criteria**

Study subjects were mothers who had had a live birth and permanent residents of study area.

#### **3.5.1 Inclusion Criteria**

The respondent had to be woman aged 15 to 49 years, be a resident of Nyatike Sub-County and should have had a live birth 1year (12 months) prior to the time of the study and has provided informed consent.

#### **3.5.2 Exclusion Criteria**

Unwillingness to give consent to participate in the study and women not within the study area.

### **3.6 Sampling Procedure**

Systematic random sampling was used to select the respondents to participate in the study. A pre-site visit was used to establish those that meet the inclusion criteria. A list of 1,101 women that met the inclusion criteria was made from all the villages; a sampling fraction was then worked out, by dividing all the eligible women by calculated sample size of 367, which resulted in a sampling interval of 3. Every third woman of reproductive age on the list having had a live birth 1 year before the survey was selected on a random start between 1 and the sampling interval (3) and a total of 367 women of reproductive age were voluntarily recruited into the study after a careful explanation of the objectives of the study and their consent (Appendix II) duly obtained. Purposive sampling was used to identify participants for TBAs, CHWs, HCWs and key informants (KIs) from health facilities depending on their experience and past involvement with matters related to uptake and utilization of skilled deliveries by women of reproductive age.

### **3.7 Data Collection Instruments**

Various data collection methods, tools and procedures used included the following:

#### **3.7.1 Structured Questionnaire**

Structured questionnaires (Appendix III) were prepared in English, pre-tested in Wath Onger area, which was within the neighborhood of Nyatike Sub-County. Both sites have low skilled birth delivery and similar socio-economic characteristics. The questionnaire was modified based on feedback from the pre-testing and prior to its use in the main study. During the data collection period, the researcher at some point translated the questionnaire to the local language (*Dholuo*) for the respondents who were not able to understand the English version. This was administered to the respondents following informed consent with the help of research assistants who filled in responses given by the respondents.

#### **3.7.2 Key Informant Interview**

Key informant interviews consisted of in-depth discussion on specific topic(s) with strategically selected informants (Appendix IV). In depth interview was carried out with key informants who included the healthcare providers working in the Maternal and Child Health (MCH) department. This was used to augment data obtained through secondary sources e.g. books, journals and media information. The key informants were purposively selected and included healthcare-givers and the Community Health Workers.

#### **3.7.3 Focus Group Discussions**

Consent forms (Appendix II) for focus group participants were administered for participants of the focused group discussions (FGDs). An FGD guide (Appendix V) was used during the interviews. A total of 6 focus group discussions (FGDs) were conducted. Two separate FGDs

were conducted for each of the following groups: Traditional Birth Attendants (TBAs), women who had a live birth and Community Health Workers. Each FGD consisted of between 6-12 members.

### **3.8. Study Variables**

#### **3.8.1 Dependent Variables**

Uptake of Skilled delivery was the dependent variable.

#### **3.8.2 Independent Variables**

The independent variables included socio-economic characteristics, knowledge on safe motherhood, attitude of health care staff and quality of skilled delivery services.

### **3.9 Validity and Reliability**

Validity of the tool was achieved by sharing with experts (Reproductive Health Coordinators) and supervisors to ensure the questions answered the intended purposes. Data collection instruments and interview protocols pre-tested before the actual collection of data. As stated above, the pre-testing was carried out in 10% of the total sample size prior to implementation on the field. The mothers for the pre-testing study were selected from Wath Onger area. Few changes to the questions on the interview guides were required after the pilot testing exercise; this was done to determine the reliability of the data that was collected. Reliability was done using test-retest approach. The pre-test was done twice within 2 weeks in the same population and correlation analysis was used to obtain a reliability coefficient from the two sets of pre-test. A reliability index of over 70% was the target. In this, a reliability of 80% was achieved while comparing the main outcomes.

### **3.9.1 Data Management, Analysis and Presentation**

The data collected was edited, coded and analyzed for common themes. All the data that was generated by this study was analyzed using the Statistical Package for Social Scientists (SPSS) (version 18.0 for Microsoft Windows). Data values were checked against the field records to ensure that no data entry errors were made. The data collected was treated confidential and access was limited to the authorized personnel only. A back-up storage facility in the form of hard disk of CD Rom was provided. All questionnaires were put in a well labeled sealed large envelope and kept in a metal cabinet under lock and key. Findings from the analysis were presented in contingency tables. In order to identify factors which influence uptake of skilled delivery in women of reproductive age in Nyatike Sub-County, Kenya, logistic regression analyses were performed. Discussions on FGDs and KII were recorded on audio tapes and later transcribed using MS word. Content and thematic analysis approach was used to align the views, perceptions and experiences with the objectives of the study.

### **3.9.2 Ethical Considerations**

This study commenced after approval had been received from the Maseno University School of Graduate Studies (Appendix VI) and the Maseno University Ethical Review Committee (Appendix VII) on behalf of National Council for Science and Technology. Permission was also obtained from Migori County Government Department of Health (Appendix VIII).

Informed consent was obtained from all participants. The nature, purpose, and procedure of the study together with time commitment required were explained to each participant on an information sheet. Participants were made aware that they were at liberty to refuse to answer any question or drop out of the study at any time and that it would not affect them. To maintain confidentiality, the respondents' names' were coded and the information remained anonymous.

The researcher and research team treated all the respondents with respect and high dignity. The average interview duration per respondent was approximately 45 minutes to 1 hour. Follow-ups were done to clarify vague responses with the respondents.

Participants who were not able to read were informed about the study by translating the information into the *Dholuo* language. It was ensured that the translation carried the same meaning as it appeared in English. Consent was then obtained from each participant in the study where they appended their signatures or thumbprints.

The adolescents gave informed consent with guardians' and parental notification and all participants were assured that their responses would be treated with utmost confidentiality. The researcher analyzed the data as it was collected from the respondents, the findings were not manipulated. The study was conducted in the participants own environment. There was no threat of potential risk since no drugs nor were chemicals administered.

## CHAPTER FOUR: RESULTS

### 4.1 Introduction

The results of the study include the socio-demographic profile of the participants; the assessment of the level of knowledge among women of reproductive age on safe motherhood, the association between socio-demographic characteristics on access to skilled delivery services in women of reproductive age and the association between health workers attitude and behaviour and uptake of skilled delivery services in women of reproductive age and the last section looks at results of association between quality of skilled delivery services and its uptake in amongst women of reproductive age in Nyatike Sub-County, Kenya.

### 4.2 Level of Knowledge on Safe Motherhood among Women of Reproductive Age

Results in Table 4.1 below show the level of knowledge of women on safe motherhood. Of the 367 women interviewed, 293 (80.3%) of them were aware of nearest health facility of skilled birth attendance (SBA) while 72 (19.7%) were not aware. Amongst those who were aware of the nearest health facility for SBA, 32% (n=94) utilized SBA compared to 30.6% (n=22) who utilized but were not aware. However, the differences between those who were aware and those who were not aware of the nearest health facility were comparable ( $p=0.803$ ). The women were further asked if they were aware of importance of health facility delivery and the result indicated that only 37.9% (n=139) knew the importance while majority 62.1% (n=228) thought health facility delivery was not important. Of those who thought it was important, 20.9% (n=29) utilized the SBA compared to 39.0% (n=89) who utilized SBA but thought it was not important. Those who thought that the health facility delivery was more important were 50% more likely to utilize SBA (OR=0.5; 95% CI=0.4-0.8,  $p=0.001$ ) (Table 4.2). The proportions between the different reasons provided for use and no use were comparable.

**Table 4.1: Level of Knowledge on Safe Motherhood and Association with Uptake of Skilled Birth Delivery**

	Overall (N=367)	Utilized skilled birth delivery	Unskilled birth delivery	*Odds ratio (95% CI)	<i>P</i> -Value
Overall	n (%)	n (%)	n(%)		
<b>Were you aware of nearest Health facility of SBD</b>					
Yes	293 (80.3)	94(32.1)	199(67.9)	1.0[0.6-1.9]	0.803
No	72 (19.7)	22(30.6)	50(69.4)		
<b>Do you think health facility delivery is important?</b>					
Yes	139 (37.9)	29(20.9)	110 (79.1)	0.5[0.4-0.8]	<b>0.001</b>
No	228 (62.1)	89(39.0)	139(61.0)		
<b>Reasons for Hospital delivery</b>					
<b>Access to skilled delivery</b>					
Yes	322 (87.7)	106(32.9)	216 (67.1)	0.8[0.5-1.3]	0.400
No	45(12.3)	12(26.7)	33(73.3)		
<b>Prevent delay in getting emergency care</b>					
Yes	311 (84.7)	102(32.8)	209(67.2)	0.9[0.6-1.4]	0.533
No	56(15.3)	16(28.6)	40(71.4)		
<b>Immediate treatment to the mother and baby</b>					
Yes	313(85.3)	100(31.9)	213(68.1)	1.0[0.7-1.6]	0.841
No	54(14.7)	18(33.3)	36(66.7)		

\*Logistic regression was used to assess associations. Chi-square analyses were used to compare proportions.

## **Focus Group Discussion (FGDs) results**

The results on Table 4.1 were triangulated in the following areas of FGDs:

### **4.2.1 What prevents women in the community from going for skilled delivery**

In general, participants living in this community expressed the feeling that most women are not likely to deliver at health facility. Some participants' described some of the reasons that can prevent women in the community from going to dispensary as:

*“Attitude of the women towards health facility”*

*“Distance to health facility”*

*“Availability of claimed TBA's”*

*“Closure of health facilities at night, weekend and holidays”*

*“Illiteracy and ignorance”*

*“Traditions and customs of community”*

*“Lack of delivery beds in some facilities”*

*“Transport cost”*

### **4.2.2 Knowledge of any men who have talked about difference in sex after birth depending on home or facility delivery**

Very few participants expressed concern about what men talk about and felt that men were so conservative when it came to the issue: One Participant said;

*“In most cases, men keep it to themselves and don't comment openly”.*



### **4.3 Socio-demographic Characteristics among Women of Reproductive Age in Nyatike Sub-County**

A total of 367 women were interviewed, of which 18.3% (n=67) were under 15 years but had delivered, 19.6% (n=72) were aged 15-20 years while the majority 27.5% (n=101) were aged 21-30 years. Majority of the respondents 35.4% (n=130) were married, 16.6% (n=60) had no education, 28.2% had only primary education, while 27.6% 47.8% (n=175) had post-secondary education. Most respondents were involved in farming (23%, n=82) while monthly income levels were fairly distributed at intervals of KShs 5000 (Table 4.2).

The age of women at time of delivery and marital status had no influence on uptake of SBA services, ( $p>0.05$ ). However, there was significant influence of education level of the woman and utilization of SBA. Result indicated that compared to 27.4% (n=32) of women with primary education who utilized SBA services, 36.6% of those with college education were 2.9 times more likely to utilize SBA services (OR=2.9; 95% CI=1.1-8.2,  $p=0.029$ ) and 52.1% of those with college level were 1.8 times more likely to utilize SBA services (OR=1.8; 95% CI=0.8-4.3,  $p=0.0001$ ). Those with no education were three times less likely to utilize SBA services compared to those with primary education (34.7% vs 27.4%, OR=3.1, 95% CI=1.3-7.5,  $p=0.009$ ). Among the women who utilized SBA services, 40.2% (n=33) were farmers, 40.4% (n=21) were involved in fishing, 14 (36.8%, n=14) were in formal employment while (27.3%, n=12) were students. Source of income had a significant association with utilization of SBA. Compared to women who were students and utilized SBA, farming women were 3 times more likely to utilize SBA (40.2% vs 27.3%; OR=3.0; 95% CI=1.1-4.8,  $p=0.023$ ). However, prevalence of SBA was not statistically different between other sources. The level of income and marital status did not have any influence on utilization of skilled birth delivery (Table 4.2).

**Table 4.2: Influence of Socio-demographic Characteristics on Access to Skilled Delivery Services among Women of Reproductive Age**

	<b>Overall (N=367) n (%)</b>	<b>Utilized skilled birth delivery n (%)</b>	<b>Unskilled n(%)</b>	<b>Odds ratio (95% CI)</b>	<b>P-Value</b>
<b>Overall</b>					
<b>Age In years</b>					
Less than 15	67	18(26.9)	49(73.1)	1.0[0.4-2.7]	0.933
15-20	72	22(30.6)	50(69.4)	Ref*	-
21-30	101	37(36.6)	64(63.4)	1.1[0.5-2.6]	0.768
31-40	78	26(33.3)	52(66.7)	1.2[0.5-2.6]	0.659
41-49	49	15(30.6)	34(69.4)	0.8[0.3-2.3]	0.738
<b>Marital Status</b>					
Single	66	18(27.3)	48(72.7)	0.6[0.3-1.6]	0.321
Married	130	49(37.7)	81(62.3)	Ref	-
Separated	45	13(28.9)	32(71.1)	0.5[0.2-1.2]	0.124
Divorced	54	18(33.3)	36(66.7)	0.6[0.2-1.2]	0.243
Widowed	72	20(27.8)	52(72.2)	0.1[0.3-1.3]	0.207
<b>Education Level</b>					
No education	75	26(34.7)	49(65.3)	1.4[0.8-2.6]	<b>0.009</b>
Primary	117	32(27.4)	85(72.6)	Ref	-
Secondary	127	35(27.6)	92(72.4)	1.1[0.6-1.7]	0.282
College	48	25(52.1)	23(47.9)	2.9[1.4-5.8]	<b>0.029</b>
<b>Occupation</b>					
Full time house wife	32	9(28.1)	23(71.9)	0.4[0.1-1.1]	0.076
Employed/ working	38	14(36.8)	24(63.2)	0.4[0.1-1.0]	0.055
Student	44	12(27.3)	32(72.7)	3.1[1.1-4.8]	<b>0.023</b>
Farming	82	33(40.2)	49(59.8)	Ref	-
Mining	66	19(28.8)	47(71.2)	0.6[0.2-1.4]	0.210
Fishing	52	21(40.4)	31(59.6)	1.0[0.4-2.4]	0.926
Others	42	9(21.4)	33(78.6)	0.4[0.1-1.1]	0.073
<b>Monthly Income</b>					
≤5000	53	15(28.3)	38(71.7)	Ref	-
5001 - 10000	45	31.1(68.9)	31(68.1)	0.9[0.3-2.6]	0.907
10001 - 20000	70	31(44.3)	39(55.7)	2.1[0.8-5.6]	0.126
20001 - 30000	63	18(28.6)	45(71.4)	0.7[0.2-1.8]	0.415
30001 - 40000	59	11(18.6)	48(81.4)	0.6[0.2-1.8]	0.359
40001+	62	24(38.7)	38(61.3)	0.9[0.3-2.5]	0.806

#Logistic regression was used to assess associations. Chi-square analyses were used to compare proportions.

\*Ref: reference category assume odds ratio of 1.0. Proportions in other categories are compared to this reference category.

### **4.3.1 Focus Group Discussion and Key Informant Results**

The themes merging from FGD with women and which were related to the place of delivery included;

#### **4.3.1.1 Where most participants would prefer to deliver and reasons why**

Some of the views which were mentioned for preferring health facility delivery were

*[There is] “Free professional care for both mother and baby”*

*“High standard of hygiene and equipment”*

*“Free referral services if complications arises”*

*“Early detection of danger signs”*

*“Privacy and confidentiality”*

The strong opposing views against health facility delivery were:

*“Distance to facility” [facilities too far from houses]*

*“Unfriendliness of the health workers”*

*“Fear of caesarean sections”*

One participant expressed strong support for TBA delivery due to

*“Friendliness”, “easier to access” [many live nearby] and “kindness” [can offer gift after delivery]*

#### **4.3.1.2 Place they gave birth to their children**

Opinion was divided evenly between those who delivered at health and those outside. One participant in the FGD was able to mention the health facility health level

*[R] “I gave birth at the dispensary”*

Some could only describe as:

[R] *“I delivered some at health facility*

[R] *“at the home of TBA”*

#### **4.3.1.3 How can husbands support their wives when they are about to deliver?**

There was a widespread agreement in all groups that the husbands should support their wives when they are about to deliver. Some participants suggested that the husband should do the following:

*[Should] “Facilitate with transport” [provide financial support]*

*“Remind wife to attend antenatal and prenatal care”*

*“Advice wife on advantages of skilled delivery and accompany wife to clinic”*

#### **4.3.1.4 Can you accept a man [male provider] to assist during delivery?**

Opinion were divided for most participants, one participant said; (*Pigott, Atun, Moyes, Hay, & Gething*), *“Provided he is skilled”*

While another said;

*[No]”Luo customs don’t allow”*

#### **4.3.2 Key Informant Interview**

Key informant interview provided more insights into the issue of uptake of skilled delivery as follows:

##### **4.3.2.1: Skilled deliveries and benefits attached to it**

The key informant mentioned benefits of SBA and these included *“Hygiene in facility”*, *“low infant deaths”* and *“early detections of complications”*.

#### **4.3.2.2: Factors associated with skilled deliveries**

One of the key components affecting access to skilled delivery is “*Long distance to health facility*” and “*existence of TBAs*” which still influence lack of skilled delivery.

Other potential factors that were mentioned by the key informant included:

*“Lack of sensitization” [some still prefer delivery outside facility, though few]*

*“Illiteracy “[for a few]*

*“Poverty levels”*

*“Transport cost”*

#### **4.3.2.3: Effect of free delivery policy to skilled delivery uptake**

Generally, reaction to how free delivery policy brought value addition was positive. With specific examples provided as:

*“Reduced maternal deaths”*

*“Low cost with low income mothers accessing skilled delivery”*

*“Safety of infection to baby in case mother is HIV positive”*

*“Immediate help in case of emergency”*

*“Knowledge of HIV status and turn up for antenatal care services”*

#### **4.4 Health Workers Attitude and Uptake of Skilled Delivery Services by Women of Reproductive Age**

Study results indicate the influence of health worker attitudes and behaviours on utilization of skilled birth delivery. About half of the respondents (47%) felt that the health worker’s attitude and behaviours were friendly while about 35% felt they are unfriendly and the rest (about 18%) had no firm opinion. Comparing utilization of SBA on the influence of friendly health workers attitude and behaviours, the results show that about 86% of the women utilized the SBA

compared to those who had no firm opinion (19.7%). Those who had no firm opinion on the worker's attitude and behaviours were 2.8 times less likely of utilizing SBA (OR=2.8, 95% CI=1.3-6.1,  $p=0.010$ ). About 16.4% (n=56) felt the health workers were unfriendly, 18.8% felt they were very unfriendly (n=64). There was no significant difference in utilization of SBA between those who felt the attitudes of health workers were very friendly and those who felt it was very unfriendly (40.5% vs 34.4% respectively OR=1.3; 95%CI=0.7-2.6], $p=0.456$ ) (Table 4.3).

**Table 4.3: Association between health workers attitude and uptake of skilled delivery services**

	<b>Overall (N=367)</b>	<b>Utilized skilled birth delivery</b>	<b>Unskilled</b>	<b>Odds ratio (95% CI)</b>	<b>P- Value</b>
Overall	n (%)	n (%)	n(%)		
<b>Health Worker Attitude</b>					-
Very friendly	74 (21.7)	30(40.5)	44(59.5)	Ref*	-
Friendly	86( 25.2)	39(45.3)	47(54.7)	0.8[0.4-1.5]	0.541
Unfriendly	56(16.4)	15(26.8)	41(73.2)	1.9[0.9-4.0]	0.105
Very Unfriendly	64(18.8)	22(34.4)	42(65.6)	1.3[0.7-2.6]	0.456
No firm opinion	61(17.9)	12(19.7)	49(80.3)	2.8[1.3-6.1]	<b>0.010</b>

\*Logistic regression was used to assess associations. Chi-square analyses were used to compare proportions.

#### 4.4.1 Focused Group Discussion

Focus group participants provided their views on the of attitude of health workers

#### **4.4.1.1 What prevents women in the community from going for skilled delivery**

In general, participants living in this community expressed the feeling that most women are not likely to deliver at health facility. Participants' described reasons that prevent women in the community from going to dispensary as:

*“Attitude of the women towards health facility”*

*“Distance to health facility” [from Quantitative data, the few women]*

*“Availability of claimed TBAs”*

*“Closure of health facilities at night, weekend and holidays” [ 1 participant]*

*“Illiteracy and ignorance” [ 1 participant]*

*“Traditions and customs of community”*

*“Lack of delivery beds in some facilities” [ 1 participant]*

*“Transport cost” [1 participant]*

#### **4.5 Quality of Skilled Delivery Services**

A total of 22 variables according to Kenya National Quality Reproductive guideline, 2012 were used as indicators of quality of care consisting of trainings health workers have undergone, equipment availability, presence or absence of supply stock outs and availability of night maternal services. The sum of quality score was 22 (100%), the mean =13.1 and the median=14 as shown on table 4.4 below.

**Table 4.4: Distribution of Health Facility Quality Scores.**

Number of Facilities (n=20)	*Scores (n=22)	Quality
1	4	Poor
1	8	Poor
3	9	Poor
1	10	Poor
1	11	Poor
5	14	Poor
2	15	Good
2	16	Good
2	17	Good
2	18	Good

\*Mean =13.1 and median 14.0; Good quality were based on scores above median

Of the 20 facilities evaluated for quality, 40% of the health facilities (8/20) provide good quality while the rest 12/20 (60%) had poor quality of care. The table 4.5 below show indicators for quality of care in provider perspective (n=20). Out of 20 health care providers representing 20 health facilities, 55.0% of them lived in the facilities while others lived in markets and home, which represent 25.0% and 20.0% of the providers, respectively. Results further reveal that 68.4% of the respondents live less than 500m to the facility while 21.1% live more than 1.5km to the facility. Others are 500m-1km and 1km-1.5km representing 5.3% and 5.3%, respectively. Out of the 20 health providers interviewed, 7 (35%) of the health care givers in the facilities have been trained on PAC trainings, only 3 (15%) have received EmOC trainings, while 1 (5%) have been trained on CEmOC and the rest (n=9; n=45%) of the providers were trained in MVA. In terms of availability of the important equipment of quality of care, in all facilities (n=20), thermometers and fetoscopes were available, in 19 (95%) facilities, there were BP machines while in 18 (90%) facilities, there were baby-scales. The result further showed that 35.0% of the facilities had national reproductive health policy guidelines. Others included reproductive health communication strategy implementation guide, Kenya National guideline for obstetric and prenatal care and EmOC guidelines representing 25.0%, 25.0% 15.0%, respectively (Table 4.5).



**Table 4.5: Indicators for Quality of Skilled Delivery Service**

N=20	n	%
Residence of health care givers		
Market	5	25
Facility	11	55
Home	4	20
Distance to facility from place skilled attendant lives		
<500m	13	68.42
500-1km	1	5.26
1km-1.5km	1	5.26
>1.5km	4	21.05
Trainings undergone by health care givers		
EmOC	3	15.0
CEmOC	1	5.0
PAC	7	35.0
MVA	9	45.0
Availability of basic equipment's **		
Thermometer	20	100.0
BP machine	19	95.0
Fetoscope	20	100.0
Baby scale	18	90.0
MVA set	7	35.0
Virginal Exam Pack	13	65.0
Delivery pack	17	85.0
Suture pack	13	65.0
Drip stand	16	80.0
Suction machine	10	50.0
Autoclave	13	65.0
Sharp disposal	18	90.0
Baby blanket	1	5.0
Delivery bed	13	65.0
Resuscitation kit	7	35.0
Screen	14	70
Room heater	0	0
Clean linen	9	45.0
Any months supplies missed?		
Yes	<b>10</b>	50
No	<b>10</b>	50
Night maternal service		
Yes	13	65.0
No	7	35.0

\*\* Descriptive statistics used to describe data for key indicators of quality. A 100% availability of equipment was a key determinant of quality of services at the 20 health facilities. EmOC=3; CEmOC=1; PAC=7; MVA=9.

## CHAPTER FIVE: DISCUSSION

### 5.1 Introduction

The purpose of this study was to identify the factors influencing uptake of skilled deliveries among women of reproductive age in Nyatike Sub-County, Kenya. This study has established that of the 367 respondents interviewed in the study, only 32.2% (n=118) had hospital delivery and the rest 67.8% received unskilled delivery in the study area. This finding raises the concern that majority of women are not delivering in the health facility but opt for unskilled delivery. Relating this finding is the fact that 64.3% of the women did not know the risk of home delivery, 27% believed there is no risk and only 6.8% of them thought it can cause delay in getting emergency care if needed. The result also indicated that majority of the women (56.1%) were assisted by traditional birth attendance (TBAs) and 11.7% delivered at prayer camps.

These results reflect worse estimates compared with global projections. For instance, globally, it was estimated that 34% of the mothers deliver with no skilled attendant; which meant that there are 45 million births occurring at home without skilled health personnel each year (WHO, 2015). Skilled attendants assist in more than 99% of births in developed countries compared with 62% in developing countries (WHO, 2015). Skilled attendance at delivery was one of the key indicators to reflect the Sustainable Development Goal (SDG) of improving maternal health.

Globally, the goal was to have 80% of all births assisted by skilled attendants by 2005, 85% by 2010 and 90% by 2015 (UN, 2010). A study from South India showed that assistance during delivery can reduce the risk of obstructed labor and is highly associated with the place of delivery (Navaneetham & Dharmalingam, 2000). Another study also presented the role of assisted skilled birth attendants in preventing direct and indirect cause of maternal deaths such as, infection, shock, blood loss, convulsions, and surgical procedures, such as caesarean delivery

(AbouZahr, 2003). In contrast to the principles of WHO's Safe Motherhood Initiative, hospital deliveries account for a minority of births in many regions of Sub-Saharan Africa (SSA). As a consequence, maternal mortality rates (MMR) are among the highest in the world, comparing unfavorably with other regions that have relatively constrained resources, such as South-East Asia and South America (Hogan et al., 2010). In Kenya, the 2014 MMR was estimated at 362 deaths per 100 000 births and in unlike other regions of Africa, the minority of births are in Kenya hospital deliveries (KDHS, 2014).

The results in this study is consistent with findings of Kenya Demographic and Health Survey (KDHS, 2014) which reported that children born in rural areas are twice more likely to be born at home than in urban. The national average for hospital deliveries was estimated at 62%, while in Nyatike Sub-county, the rural area where the study was conducted, only 32% of children were estimated to be born in clinical facilities. The MMR for the District was 650 per 100 000 births (DHIS, 2012). The current study has confirmed that the prevalence of skilled delivery is still stagnant at 32% as compared to 2012 estimates.

The 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 attributable to infection or disease (Hogan *et al.*, 2010). Factors associated with unskilled deliveries include the education level and wealth of the mother, with 84% of children whose mothers have no education being born at home, compared with 30% of those whose mothers have secondary education (KDHS, 2014). Despite support for this health message by Ministries of Health guidelines and international programs such as the United Nations Development Programme (UNDP), United Nations Children Fund (UNICEF) and the Centre for Disease Control and Prevention (CDC), there is little evidence of fundamental change in improvement in hospital delivery in Nyatike

Sub-County of western Kenya. The Kenya National Government made free maternal delivery a policy by mid-2013. As such, it will be important to continue to monitor the progress towards SDGs. The finding that majority of women in this area preferred traditional birth attendance raises concern that despite this practice, the policy currently do not recognize the inclusion of TBA in the health system.

### **5.3 Knowledge on Safe Motherhood among Women of Reproductive Age**

This study has established that majority of respondents were aware of nearest health facility of skilled birth attendance (SBA) and a large majority reported health facility delivery was not important. This finding reveals low level of knowledge on importance of SBA, since majority of women were still not aware of the significance of SBA. This finding is consistent with other findings on unutilization of maternal health services. According to study by Okereke *et al*, over 90% of respondents in two states showed poor knowledge of the benefits of health facility delivery by a skilled birth attendant and more than 80% of respondents in both states displayed poor knowledge of the benefits of ANC visits. The study also showed that more than half of the respondents across the two regional states had poor knowledge of maternal danger signs (Okereke *et al.*, 2013). According to their analysis ever attending school by a respondent increased the likelihood of knowing maternal danger signs by threefold (OR 2.63, 95% CI: 1.2-5.8) among respondents in Kaduna State (Okereke *et al.*, 2013)

The study also established that increasing knowledge about safe motherhood practices should translate into safer pregnancy outcomes and subsequently lead to lower maternal mortality across the developing world (Okereke *et al.*, 2013). It also attributed low maternal care utilization in most rural communities to believe that pregnancy is a natural process requiring no medical intervention and low awareness of benefits of ANC and hospital delivery (Okereke *et al.*, 2013).

Another study in rural Nigeria, reported that women in rural areas rate the services of TBA as being of higher quality than that of medical health-care providers, particularly with regards to interpersonal communication and relationship (Fatusi, 2009). On the hand, knowledge on safe motherhood is believed to improve maternal health care service utilization through increased level of health awareness and greater knowledge of available health services among educated women, increased knowledge of benefits of maternal care services, improved ability of educated women to afford the cost of medical health-care and their enhanced level of autonomy (Emelumadu *et al.*, 2014). This study however established that despite knowledge of place of SBA , utilization was still not optimal and this may be attributed to other factors such as perception on quality of care, attitude of health workers, education level and employment status

This study has further established that women who reported that they feared hospital setting and caesarean section had the lowest utilization. This fear can be a barrier to access of maternal health services and may be due to lack of awareness or poor knowledge on safe motherhood. This study has determined that the level of knowledge on safe motherhood has significant influence on utilization of skilled birth. Previous studies have looked at influence of education and religion and established that a woman's knowledge can also be influenced by religion and culture (Yar'zever & Said, 2013). It is crucial that women are made aware of the importance of the use of skilled delivery during birth. This is because it is only when they are aware of its importance that they will be willing and prepared to use it.

In a study conducted at Tanzania by Mushi and others in 2007, they indicated that improving coverage of health facility deliveries needs to be done by raising awareness for both men and women on danger signs during pregnancy/delivery and also by strengthening counselling on

facility delivery and individual birth preparedness (Mushi *et al.*, 2007). There is need to invest in the education of women on dangers associated with pregnancy and the usefulness of skilled delivery.

## **5.2 Influence of Socio-demographic Characteristics on Access to Skilled Delivery**

This study has established that education level of the woman had an influence on utilization of SBA. Result indicated that only 27.4% of women with primary education who utilized SBD compared to 36.6% of those with high school and 52.1% of those with college level. The higher the education level of the woman, the more likely she would utilize skilled birth attendance. This finding is comparable to a study done in Nigeria on determinants of use of maternal health services which established that 43.5% had skilled attendants at delivery had primary education and amongst the educational factors only individual-level variable that is consistently a significant predictor of service utilization, while socio-economic level is a consistent significant predictor at the household level (Fatusi, 2009).

This study has also established that source of income had a significant association with utilization of SBA. Compared to farming women who utilized SBA, students were less likely to utilize SBA. The level of income did not have any influence on utilization of skilled birth delivery. However, students were less likely to utilize SBA compared to other occupation. Association between maternal health service utilization and socio-demographic characteristics were varied in the current study. This is probably because such women (student) and those with lower income are often less socio-economically empowered and as such will prefer health facilities providing care at minimal cost or where there are no costs associated with seeking such services. In the study by (Fatusi, 2009), also found that socioeconomic factors were the most significant

predictors of maternal health services utilizations (Fatusi, 2009). This study established that pregnant students were less likely to utilized SBA. This could be attributed to student's inexperience on issues pertaining to maternal health and hence depend more on opinions of relatives and friends on these issues especially those related to healthcare-seeking practices. These findings are important and reinforce the role of education and lack of access to utilization of SBA amongst students. Providing awareness and health education to students and other women may have great influence on future rates of mortality and morbidity. This is consistent by finding of a study by Emelumadu, *et al* who demonstrated that better service utilization is often associated with a higher educational status (Emelumadu, 2014)

A study by (AbouZahr,2003) showed that maternal mortality and morbidity were directly and indirectly related to societal and cultural factors that impact women's health and their access to services (AbouZahr, 2003). Thus, lack of access and control over resources, limited educational opportunities, poor nutrition, and lack of decision-making were mentioned as factors which contribute significantly to adverse pregnancy related outcomes. Review of the international literature (AbouZahr, 2003). The finding of this study also emphasized factors like cultural beliefs, socio-demographic status, women's autonomy, economic conditions, physical and financial accessibility, disease pattern and health service issues to be important determinants of the use of maternal health care services (AbouZahr, 2003).

This current study has shown significant influence of level of income on skilled birth delivery. However in a study by (Emelumadu, 2014) had established that socio-demographic factors were found to significantly influence the choice of place of delivery. Younger women, those who were not married, those with lower educational status as well as grand multipara women were more likely to have delivered either by TBA/maternity contrary to other studies (Emelumadu *et al.*,

2014) . The study by (Emelumadu, 2014) failed to include income as one of the socioeconomic factors. However, in this study women who are in employment and working had three times the odds of skilled delivery compared to those not working (Emelumadu, 2014. This could be due to ability to afford out-of pocket costs related to care seeking and utilization of SBA.

The Kenyan government had announced free maternal deliveries in the country from mid-2013 (Wamalwa, 2015). However, immediate impacts are not expected to be realized immediately. A study from India had also pointed out that the low utilization of maternity services seems to be due to low levels of household income, high illiteracy and ignorance, and a host of traditional factors (Shariff & Singh, 2002). A similar study in Pakistan described poor socio-economic status, lack of physical accessibility, cultural beliefs and perceptions, low literacy level of the mothers and large family size as the leading causes of poor utilization of primary health care services (Babar & Hatcher, 2004). In another study from Ethiopia, it was observed that the use of maternal health services can be influenced by the socio-demographic characteristics of women, the cultural context, and the accessibility to these services (Mekonnen & Mekonnen, 2003). In this study, the influence of sociodemographic factors were varied with income and education level being significantly associated with uptake of skilled birth attendance

In India, a study of analysis of choice of delivery location showed that maternal and, paternal education, and scheduled caste status were the predisposing factors that determined the choice of private facilities, public and home deliveries (Thind *et al.*, 2008). In a similar way, a study from Pakistan showed that family size, parity, educational status and occupation of the head of the family were also associated with health seeking behavior in addition to age, gender and marital



status (Babar & Hatcher, 2004). A study from rural Tanzania identified that ethnicity, gender of the household head, mother's education, and mother's age at child birth, socio-economic and quality of services status were important independent factors in determining the choice of delivery place. Sudden onset of labor or short labor was affecting decisions towards selecting the delivery place. Selecting health facility for delivery was perceived to be more desirable for prolonged labor (Mrisho *et al.*, 2007).

#### **5.4 Health Staff Attitude that Affect Uptake of Skilled Delivery**

Half of the respondents (47%) in this study felt that the health staffs are friendly while about 35% felt they are unfriendly and the rest 18% had no firm opinion. Overall, attitude of health workers was significantly associated with skilled birth delivery. It will be important to address health worker attitude and behaviour as it appears to be a major factor influencing the utilization of skilled birth attendance. Health workers with negative attitudes and behaviours may be abusive, and may fail to support the women during delivery.

This finding is in line with a report by United Nations that investing in human resources is crucial for improving skilled attendance at birth. Upgrading delivery care often begins with improving the quality of services offered in facilities, When facilities provide quality services, they become widely used and trusted by community members (UNFPA, 2004). In some settings, women feel reluctant to go for health facility-delivery because of negative attitudes of the health professionals which include: poor reception, canning, shouting, and refusing to attend to women in pain (especially during weekends and at night). Many women place value on delivery by a traditional birth attendant (TBA). Their society respect and recognizes the role played by TBAs in communities and their attendance is highly valued. The TBAs provide services that the formal

health system does not, including postpartum care in the home. Some of the women believe that childbirth-related complications are caused by witchcraft, and the TBAs are perceived as better equipped to intervene in these cases.

The women have the perception that the health facility is a harsh setting for childbirth. In a study done on Low Use of Skilled Attendants' Delivery Services in Rural Kenya by (Kristen *et al.*, 2006), one community health worker said, "They leave you alone during your labour pain at the health centre; the TBA stays with you and helps you to deal with the pain." This perception is due to under-staffing situation of the health facilities (Kristen *et al.*, 2006).

### **5.5 Quality of Skilled Delivery Services in the Health Facilities**

The study sought to establish quality of deliveries services from 20 health facilities in the study area. The results indicated that majority (over 60%) of health care staff live within 500 meters of the health facility and had received the necessary trainings in delivery services. However, only 35% of the health facilities had national guidelines. Results indicated that out of the 20 facilities in the Sub-County, only 1(4.0%) facility had a baby blanket, 7 facilities had resuscitation kit, 7 facilities had MVA set representing only 3.1% and 3.1%, respectively. Other equipment available included clean linen, suction machines, and delivery beds representing 9(3.9%), 10(4.4%), and 13(5.7%), respectively. In all the 20 facilities there were no room heaters.

This finding reveal that the availability of the key equipment required are still not optimal and poses a threat to safe delivery. Further findings in this study indicated that out of the 20 facilities, 50.0% don't provide maternal health services at night because of lack of delivery room, while no source of power and distance from residence were reported by 25.0% and 25.0%, respectively, as reasons for not providing maternal services at night. It is important to state that

the maternal delivery is currently free and all levels of care are expected to receive expectant women. The fact that only minority of the health facilities offer night services would mean that women with emergencies cannot get these services except during the night. Quality of care “involves providing a minimum level of care to all pregnant women and their newborn babies and a higher level of care to those who need it. This should be done while obtaining the best possible medical outcome and while providing care that satisfies women and their families and their care providers” (Pittrof *et al.*, 2002).

This study also showed that investing in human resources is crucial for improving skilled attendance at birth. Critical issues include “brain drain,” salary and benefits, supervision and management, and skills maintenance (Pittrof *et al.*, 2002) . Upgrading delivery care often begins with improving the quality of services offered in facilities because when facilities provide quality services, they become widely used and trusted by community members (UNFPA, 2004). The lack of doctors, nurses and midwives poses’ serious problems for developing countries.

In Ghana, free delivery care policy was seen as an effective approach to an important problem as was believed to have substantially increased utilization of skilled care for delivery. However, this proved to be wrong because even when the delivery-fee-exemption policy had increased utilization of delivery services, poor quality of care, low staff strength, poverty, transportation, long distances to health facilities, socio-cultural barriers, and the custom of using traditional birth attendant still remains and these hinder access to skilled delivery (Witter *et al.*, 2009).

The results from this study indicated that only a few facilities have any of the four policy documents and national guidelines, with some not having them at all. The Kenya National Guidelines for quality Obstetric and prenatal care (2004) addresses needs of service provider that

if met would contribute to facilitating the provision of quality services that in turn address rights of the clients. These include training, infrastructure, supplies, guidance, encouragement, respect and information.

This study has established that in Nyatike Sub-County, lack of quality of service or sub optimal availability of essential delivery services in the health facilities hinder access and utilization of skilled delivery services and thus contravenes the Kenya Government free delivery care policy. This may explain the low utilization of skilled delivery services which was estimated at 32% against national and international target of 80%.

## **CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Summary of Findings**

The prevalence of skilled birth delivery was 32.2%. Students were less likely to utilize skilled birth deliveries compared to farming women. Women with secondary education or higher were more likely to utilize skilled birth delivery compared to those with primary education. Overall, the attitude of health workers was significantly associated with higher odds of skilled birth delivery. At health facility level, 40% of them provided good qualities while the rest 60% had poor quality of care. Choice of place of delivery is based on, free professional care for both mother and baby, high standard of hygiene and equipment, free referral services if complications arise, early detection of danger signs and privacy and confidentiality.

### **6.2 Conclusions**

6.2.1 Majority of women believed that delivery at a health facility was not important demonstrating lack of knowledge of safe mother-hood. Although, majority of the women delivered at a health facility, this was not supported by utilization of health facility delivery. Fear of being referred to other facility and caesarean section were reported as significant factors hindering access to skilled birth deliveries as they scare women from going to hospital. Availability of facilities and utilities were the key attraction to women to receive maternal health services.

6.2.2 The study has established that higher education at least secondary level was associated with utilization of skilled birth delivery. Pregnant student were unlikely to utilize skilled birth deliveries. Overall, the occupation of the woman had an influence on the uptake of SBA. Employed and working women are likely to utilize skilled birth attendance.

- 6.2.3 Attitude of health workers had an influence on utilization of SBA services by women. Half of the women thought the workers are friendly and 35% believe they are not friendly and a few did not have a firm opinion. Those who had negative opinion on attitudes of health workers were less likely to utilize skilled birth attendant services.
- 6.2.4 Poor quality of service or sub-optimal availability of essential delivery services in the health facilities hinders access and utilization of skilled birth attendant services.

### **6.3 Policy Recommendations**

- 6.3.1 Despite maternal hospital delivery being free in Kenya only 32% of women in Nyatike Sub-County utilizes skilled birth delivery. Integration of health talk on safe motherhood amongst students in school programs may influence utilization.
- 6.3.2 The policy of educating girl child should be scaled up to ensure women receive at least secondary education level.
- 6.3.3 Community health workers role in educating women or through existing social groups to change attitudes and perceptions on skilled birth delivery.
- 6.3.4 Mandatory quarterly supervisory visit and quality audits of facilities to assess the quality of care.

### **6.4 Recommendations for Future Research**

- 6.4.1 A longitudinal study to establish the impact of a tripartite referral dialogue model to integrate, health provider, the CHVs and the TBAs.

- 6.4.2 The effect of a supervisory and professional reward mechanism to improve health workers attitudes and behaviour.
- 6.4.3 A cohort study on the effect of an economic package to improve health facility delivery.
- 6.4.4 A policy analysis of the impact of free maternal on improving skilled birth attendance.

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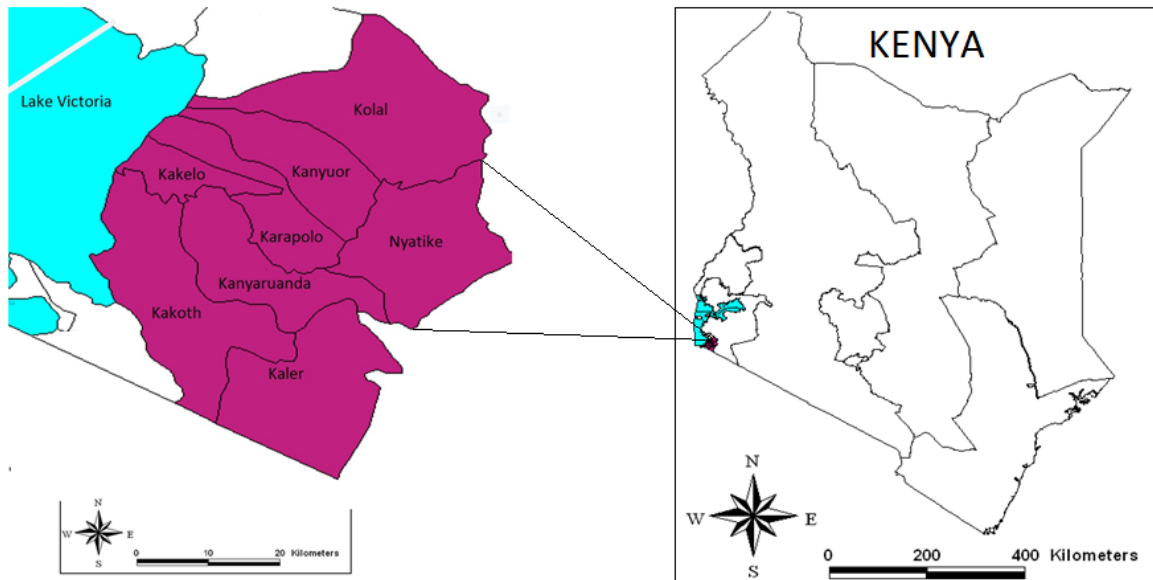
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**APPENDIX I: MAP OF NYATIKE SUB-COUNTY, KENYA**



**APPENDIX II: CONSENT FORM**

**MASENO UNIVERSITY,  
ETHICS REVIEW COMMITTEE  
PRIVATE BAG,**

**MASENO.Tel.+254721543976,+254733 230878**

**Title: Factors Influencing Uptake of Skilled Deliveries among Women of Reproductive age in Nyatike Sub-County, Kenya.**

I am Gordon Okomo, a MPH student at Maseno University. I am carrying out a research on Factors influencing Uptake of Skilled Deliveries among Women of Reproductive age (15-49) in Nyatike District. You have been chosen to participate in the study. I want to assure you that all of your answers will be kept strictly in secret. I will not keep a record of your name or address. You have the right to stop the interview at any time, or to skip any questions that you don't want to answer. There is no right or wrong answers in this research. Some of the topics may be difficult to discuss, but many women have found it useful to have the opportunity to talk. Your participation is completely voluntary but your experiences could be very helpful to women of reproductive age in the country. The interview takes approximately 40 minutes to complete. Do you have any questions? Do you agree to be interviewed?

Signed \_\_\_\_\_

Date \_\_\_\_\_

Thank you for your cooperation.

**To be completed by interviewer**

I certify that I have read the above consent procedure to the participant.

Signed: \_\_\_\_\_

Date \_\_\_\_\_



### APPENDIX III: STRUCTURED QUESTIONNAIRE

**MASENO UNIVERSITY,  
PRIVATE BAG,  
MASENO.  
Tel.+254721543976,+254733 230878**

I am Gordon Okomo, a MPH student at Maseno University. I am carrying out a research on Factors Influencing Uptake of Skilled Deliveries among Women of Reproductive age in Nyatike Sub-County. You have been chosen to participate in the study. Thank you in advance for your cooperation.

#### **Background information**

Name of interviewer \_\_\_\_\_ Date of interview \_\_\_\_\_

Village \_\_\_\_\_

#### **SECTION A: DEMOGRAPHIC AND SOCIO ECONOMIC CHARACTERISTICS OF RESPONDENTS**

*(Please tick all the responses given)*

Q1. What is your place of residence (Village).

- a. Kadem
- b. Karungu
- c. Muhuru
- d. Kakelo ka koth
- e. Kanyarwanda
- f. Other (Specify) \_\_\_\_\_

Q2. In your candid opinion how would you describe your place of residence?

- a. Rural
- b. Urban

Q3. What was your age in years at the time you gave birth to your last child?

- a. Less than 15 years [ ]
- b. 15-20 [ ]
- c. 21-30 [ ]
- d. 31-40 [ ]
- e. 41-49 [ ]

Q4. What is your marital Status?

- a. Single [ ]
- b. Married [ ]
- c. Separated [ ]
- d. Divorced [ ]
- e. Widowed [ ]

Q5. What is your religion?

- a. Christian [ ]
- b. Muslim [ ]
- c. Protestant [ ]
- d. Catholic [ ]
- e. Other (specify)\_\_\_\_\_

Q6. What was your highest level of education at the time you gave birth to your last born?

- a. No education [ ]
- b. Primary [ ]
- c. Secondary [ ]
- d. High school [ ]
- e. College [ ]

Q7. What was/is your husband's/ Partners highest level of education when you last gave birth?

- a. No education [ ]
- b. Primary [ ]

- c. Secondary
- d. High school
- e. College

Q8. What do you/ your partner mainly do for a living?

- a. Full time house wife
- b. Employed/Working
- c. Student
- d. Farming
- e. Mining
- f. Fishing
- g. Others (please specify) \_\_\_\_\_

Q9. Monthly income (k.shs) \_\_\_\_\_

Q10. Were you insured at the time you last gave birth?

- a. Yes
- b. No

Q11. How many live births have you had?

- a. One
- b. Two
- c. Three
- d. Four
- e. Five
- f. Other (specify) \_\_\_\_\_

Q12. Who is the head of your household?

- a. Husband
- b. Myself

- c. Mother-in-law [ ]
- d. Father-in-law [ ]
- e. Others (please indicate).....

Q13. Who mainly decides in your household where women should give birth?

- a. The pregnant woman herself [ ]
- b. Husband/ Partner [ ]
- c. Mother in law [ ]
- d. Father in law [ ]
- e. Others (Specify)\_\_\_\_\_

**SECTION B: MOTHERS' KNOWLEDGE ABOUT SAFE MOTHERHOOD AND CHOICE OF PLACE OF DELIVERY**

Q14. Were you aware of the nearest health facility where you can receive skilled delivery care in the district at the time you gave birth to your last child?

- a. Yes [ ]
- b. No [ ]

Q15. In your candid opinion, do you think health facility delivery is important?

- a. Yes [ ]
- b. No [ ]

Q16. If you choose **yes**, why do you think health facility delivery is important? (Tick the one that applies to you)

- a. Access to skilled care [ ]
- b. Prevent delay in getting emergency care if needed [ ]
- c. Immediate treatment to the mother and the baby [ ]
- d. It is not important [ ]
- e. I don't know [ ]
- f. Others (please indicate).....

Q17. Did you have any fear for the following processes of health facility delivery as at the time you gave birth to your last child? (Tick one of the options)

- a. Hospital setting
- b. Referral
- c. Injection
- d. Caesarean section
- e. Medicine
- f. Position taken during delivery
- g. I had no fear
- h. Others (please indicate).....

Q18. Which of the following is the main risk behind home delivery?

- a. Delay in getting emergency care if needed
- b. There is no risk
- c. I don't know
- d. Others (please indicate).....

Q19. In which of the following providers did you have confidence in their service at the time you gave birth to your last child?

- a. Priest/pastor/*Jalemo* attending to your delivery at home
- b. Skilled attendant (midwife, doctor/nurse with midwifery skills) attending to your delivery at health facility
- c. TBA (*Nyamrerwa*) attending to you delivery at home
- d. Relatives attending to your delivery at home
- e. Self assisted delivery at home
- f. Others (please indicate).....

Q20. Where did you give birth to your last child?

- a. Health facility
- b. Home/TBA (*Nyamrerwa*) home

- c. Prayer camp [ ]
- d. Others (please indicate).....

Q21. Why would you prefer health facility delivery? Tick **yes** if you prefer health facility delivery or **No** if you dislike it.

	<b>Yes</b>	<b>No</b>
a. Distance covered to access skilled delivery	[ ]	[ ]
b. Rules regarding visitors	[ ]	[ ]
c. Respect for privacy and other personal needs	[ ]	[ ]
d. Position taken during delivery	[ ]	[ ]
e. Items like soap, antiseptic, pad and gloves required	[ ]	[ ]
f. Facilities/utilities available (water, light, bath room, etc)	[ ]	[ ]
g. Attitudes of health personnel	[ ]	[ ]
h. Delivery room temperature	[ ]	[ ]
i. Delivery assisted by midwife/medical doctor/nurse; not TBAs	[ ]	[ ]
j. Immediate care given to the mother and baby	[ ]	[ ]
k. Access to emergency care if needed	[ ]	[ ]
l. Opening hours during the day	[ ]	[ ]
m. Opening hours during the night	[ ]	[ ]
n. Service provider	[ ]	[ ]

Q22. Do any cultural practice(s) or traditional norm exist in your community that prevents you from accessing skilled delivery at a health facility? (Tick the one that applies to you)

- a. Placenta is buried [ ]
- b. The mother and/or baby is/are bathed with hot water [ ]
- c. The mother and/or baby is/are bathed with warm water [ ]
- d. The mother and/or baby is/are bathed with normal water [ ]
- e. Mother-in-law is to be present during delivery [ ]
- f. Men do not assist delivery [ ]
- g. Others (please indicate)\_\_\_\_\_

Q23. What kind of transportation would you use to get to the nearest health facility?

- a. Boda Boda
- b. Olwenda
- c. Bicycle
- d. Ambulance
- e. Others specify \_\_\_\_\_

Q24. At the time you gave birth to your last child, what opinion did you hold about transport fares (including chartering taxi) to the nearest health facility during labour in your community?

- a. Absolutely free [ ]
- b. Partially free [ ]
- c. Affordable [ ]
- d. Costly [ ]
- e. Very costly [ ]

Q25. At the time you gave birth to your last child, what opinion did you hold about delivery charges in the nearest health facility in the district?

- a. Absolutely free [ ]
- b. Partially free [ ]
- c. Affordable [ ]
- d. Costly [ ]
- e. Very costly [ ]

Q26) Did you consult a traditional birth attendant (*nyamrerwa*) during or after pregnancy?

- a. Yes [ ]
- b. No [ ]

Q27) How much does it cost to hire a *nyamrerwa* in this area?

Specify \_\_\_\_\_

**SECTION C: MOTHERS' OPINION ON ATTITUDE OF HEALTH FACILITY STAFF**

Q28. At the time you gave birth to your last child, how would you rate the attitude/behavior of midwives, nurses or other health personnel during health facility delivery?

- 1) Very friendly [ ]
- 2) Friendly [ ]
- 3) Unfriendly [ ]
- 4) Very unfriendly [ ]
- 5) No firm opinion [ ]

**SECTION D: ASSESSMENT OF QUALITY OF SKILLED DELIVERY SERVICE.**

I am Gordon Okomo, a MPH student at Maseno University. I am carrying out a research on Factors Influencing Uptake of Skilled Deliveries among Women of Reproductive age in NyatikeSub-County. You have been chosen to participate in the study. Thank you in advance for your cooperation.

**Background information**

Name of interviewer \_\_\_\_\_ Date of interview\_\_\_\_\_

Facility\_\_\_\_\_

**SECTION D: ASSESSMENT OF QUALITY OF SKILLED DELIVERY SERVICE.**

*(To be filled by the health care giver in the facilities; please tick all the responses given)*

Q30 where do you stay?

- a) Market [ ]
- b) Home [ ]
- c) Facility [ ]
- d) Other-----



Q31 How far is it from where you live to the facility?

- a) <500m
- b) 500-1km
- c) 1km-1.5km
- d) >1.5km

Q32 Have you undergone any of the following trainings?

- a) EmOC
- b) CEmOC
- c) PAC
- d) Other.....

Q33 Which of the following guidelines on reproductive health do you have in the facility?

- a) EmOC guidelines
- b) Kenya National guideline for obstetric and perinatal care
- c) National reproductive health policy
- d) Reproductive health communication strategy implementation guide
- e) Others.....

Q34 Which of the following basic equipment do you have in the facility?

- a) Thermometer
- b) Bp Machine
- c) Fetoscope
- d) Baby scale
- e) MVA set
- f) Vaginal examination pack
- g) Delivery pack
- h) Suture pack
- i) Drip stand
- j) Suction machine
- k) Autoclave
- l) Sharp disposal
- m) Baby blanket
- n) Delivery Bed
- o) Resuscitation kit
- p) Screen
- q) Room Heater
- r) Clean Linen

Q35 Are there days in the Month that you have missed your supplies?

- a) Yes
- b) No

Q36 If yes to Q above, how long does it take to get supplies?

- a) 1 week
- b) 2 weeks
- c) 1 Month
- d) 2 Months
- e) Others .....

Q37 What is the composition of you staff?

- a) Doctor
- b) Clinical officer
- c) Nurses
- d) Nurse Aids

Q38 Do you give maternal services at night?

- a) Yes
- b) No

Q39 If No above what are the reasons?

- a) No staff house
- b) No delivery room
- c) No supplies
- d) Distance from your residence
- e) No source of power.
- f) Others.....

## **APPENDIX IV: KEY INFORMANT INTERVIEW GUIDE**

**MASENO UNIVERSITY,  
ETHICS REVIEW COMMITTEE  
PRIVATE BAG,  
MASENO.**

**Tel. +254721543976,+254733 230878**

I am Gordon Okomo, a MPH student at Maseno University. I am carrying out a research on Factors Contributing to Uptake of Skilled Deliveries among Women of Reproductive age (15-49) in Nyatike Sub-County, Kenya. You have been chosen to participate in the study.

Kindly comment on the following areas:

- Skilled deliveries and the benefits attached to it
- Variables and their influence on skilled deliveries among women of reproductive age
- In your understanding has the free delivery policy added value to skilled delivery uptake.

## **APPENDIX V: FOCUS GROUP DISCUSSION GUIDE:**

**MASENO UNIVERSITY,  
ETHICS REVIEW COMMITTEE  
PRIVATE BAG,  
MASENO.  
Tel. +254721543976,+254733 230878**

1. Where do you want to deliver, and why?
2. If you have children, where did you give birth?
3. How can the husband best support his wife when she is about to deliver?
4. Is it acceptable for a man to assist a woman to give birth?
5. What do you think prevents women in your community from going to the dispensary to give birth?
6. Do you know any men who have talked about a difference in sex after birth depending on whether the woman gave birth at home or in the hospital?
7. In your understanding has the free delivery policy added value to skilled delivery uptake?

**APPENDIX VI: SCHOOL OF GRADUATE STUDIES APPROVAL**



**MASENO UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

*Office of the Dean*

Our Ref: PG/MPH/6006/2012

Private Bag, MASENO, KENYA  
Tel:(057)351 22/351008/351011  
FAX: 254 057 351153/351221  
Email: [sgs@maseno.ac.ke](mailto:sgs@maseno.ac.ke)

Date: 19<sup>th</sup> November, 2014

**TO WHOM IT MAY CONCERN**

**RE: PROPOSAL APPROVAL FOR OKOMO GORDON —  
PG/MPH/6006/2012**

The above named is registered in the Master of Public Health Programme of the School of Public Health & Community Development, Maseno University. This is to confirm that his research proposal titled "*Factors Influencing Uptake of Skilled Deliveries in Women of Reproductive Age in Nyatike Division, Kenya*" has been approved for conduct of research subject to obtaining all other permissions/clearances that may be required beforehand.

Handwritten signature of Dr. Pauline Andang'o.

Dr. Pauline Andang'o  
**ASSOCIATE DEAN, SCHOOL OF GRADUATE STUDIES**



Maseno University

ISO 9001:2008 Certified



## APPENDIX VII: ETHICS REVIEW COMMITTEE APPROVAL LETTER



### MASENO UNIVERSITY ETHICS REVIEW COMMITTEE

Tel: +254 057 351 622 Ext: 3050  
Fax: +254 057 351 221

Private Bag – 40105, Maseno, Kenya  
Email: [muerc-secretariat@maseno.ac.ke](mailto:muerc-secretariat@maseno.ac.ke)

**FROM:** Secretary - MUERC

**DATE:** 11<sup>th</sup> May, 2015

**TO:** Gordon Odhiambo Okomo  
PG/MPH/06006/2012  
Department of Public Health  
School of Public Health and Community Development,  
Maseno University, P. O. Box, Private Bag, Maseno, Kenya

**REF:** MSU/DRPI/MUERC/00136/15

**RE: Factors Influencing Uptake of Skilled Deliveries by Women of Reproductive age in Nyatike Division, Kenya. Proposal Reference No.: MSU/DRPI/MUERC/00136/15**

This is to inform you that the Maseno University Ethics Review Committee (MUERC) determined that the ethics issues raised at the initial review were adequately addressed in the revised proposal. Consequently, the study is granted approval for implementation effective this 11<sup>th</sup> day of May, 2015 for a period of one (1) year.

Please note that authorization to conduct this study will automatically expire on 10<sup>th</sup> May, 2016. If you plan to continue with the study beyond this date, please submit an application for continuation approval to MUERC Secretariat by 8<sup>th</sup> April, 2016.

Approval for continuation of the study will be subject to successful submission of an annual progress report that is to reach MUERC Secretariat by 8<sup>th</sup> April, 2016.

Please note that any unanticipated problems resulting from the conduct of this study must be reported to MUERC. You are required to submit any proposed changes to this study to MUERC for review and approval prior to initiation. Please advise MUERC when the study is completed or discontinued.

Thank you.

Yours faithfully,

Dr. Bonuke Anyona,  
Secretary,  
Maseno University Ethics Review Committee.

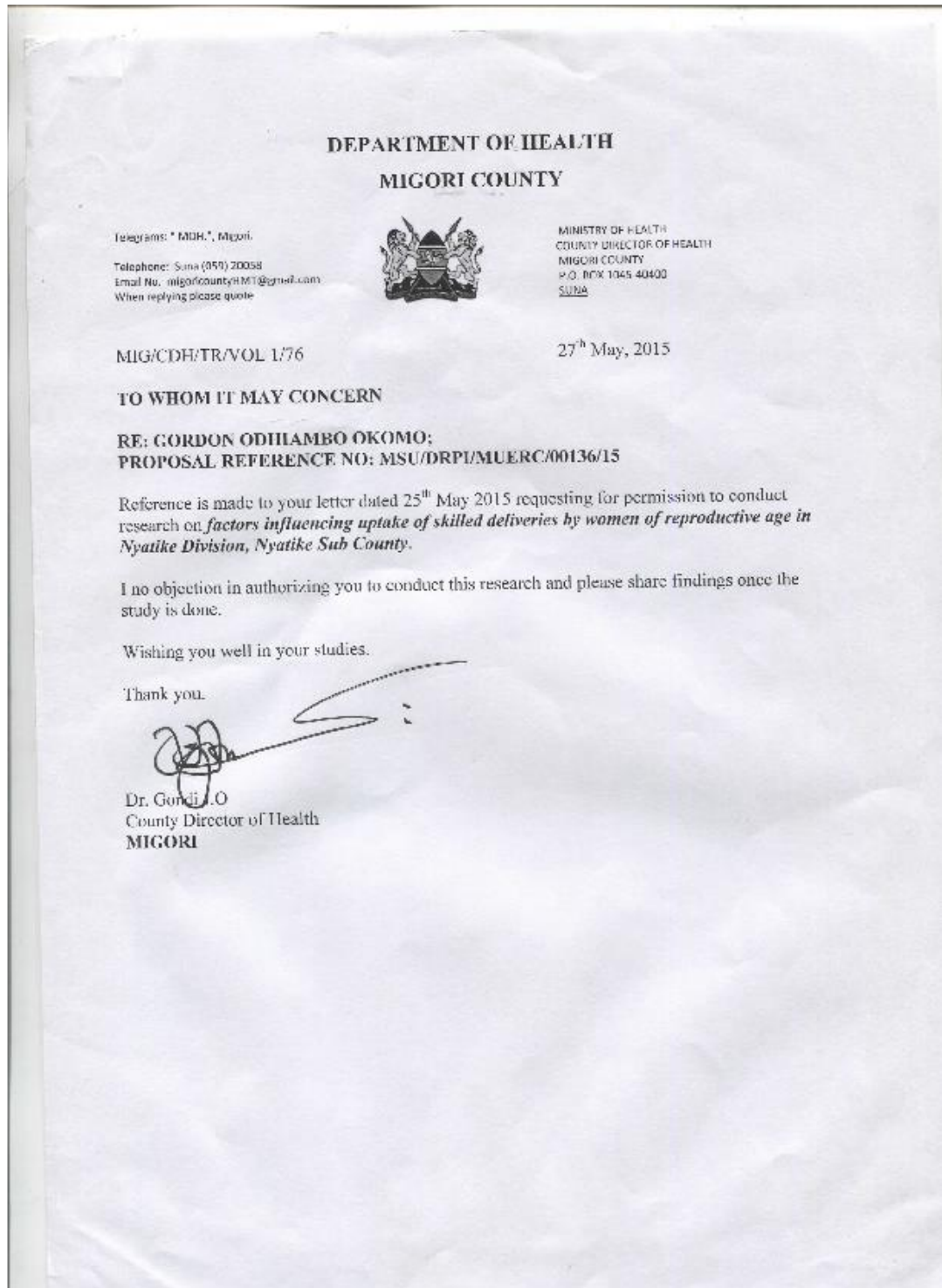


Cc: Chairman,  
Maseno University Ethics Review Committee.

MASENO UNIVERSITY IS ISO 9001:2008 CERTIFIED



**APPENDIX VIII: APPROVAL FROM THE COUNTY DIRECTOR OF HEALTH  
MIGORI.**



## APPENDIX IX: LUO QUESTIONNAIRE

**MASENO UNIVERSITY,  
ETHICS REVIEW COMMITTEE  
PRIVATE BAG,**

**MASENO.Tel.+254721543976,+254733 230878**

**SEKSON A:Kit ngima mar gweng e yor somo yuto kata dak mar jatim nonro**  
(Ket tik e dwoko duto mochiw)

Q1)Idak e gweng kanye(kama jaduong gewng a chiel rito)

- a. Kadem
- b. Karungu
- c. Muhuru
- d. Kakelo kakoth
- e. Kanyarwanda
- f. Ma moko(Yier).....

Q2E pachi iwuon,ere kaka di iler kama idake

- a. Kor gweng
- b. Boma

Q3.Ne in ja higni adi e kinde mane inyuolo nyatini ma ogik?

- a. Chien mar higni 15
- b. Kind 15-20
- c. Kind 21-30
- d. Kind 31-40
- e. Kind 41-49

Q4.Bende idak kaka nga ma okendi

- a. Adak kenda
- b. Okenda
- c. Ne wapogore
- d. Ne wawere chuth
- e. An chi liel

Q5 I lemo gi migawo mane?

- a. Jaokristo
- b. Islam
- c. Pentecosti
- d. Katholik
- e. Mamoko.....

Q6 Ne isomo igik e ranginy mane ma malo e kinde mane inyuolo nyath ni mogik.

- a. An ok asomo
- b. Primary
- c. Sekondari



- d. High school
- e. Kolej

Q7 Jaodi kata jahera ni maudak go ne ochopo ranginy mane mar sombe e kinde mane unyuolo nyathiu ma ogik ni?

- a. Ne oksomo
- b. Primari
- c. Sekondari
- d. High school
- e. Kolej

Q8 Ango ma in kata jal ma udak go timo(jahera ni ) mindo uhud go chiemo kata dak?

- a. Adak kak miyo man e iot
- b. Tich andika
- c. Japuonjre
- d. Japur
- e. Jamagang
- f. Jalupo
- g. Ma moko.....

Q9 Yuto mari e dwe di rom nade?.....

Q10 Bende ne in gi okumba mar thieth e kinde mane inyuolo nyathini mogik?

- a. EE
- b. Ohoyo

Q11 Nyithindo adi mane inyuolo ka ngima?

- a. Achiel
- b. Ariyo
- c. Adek
- d. Angwen
- e. Abich
- f. Mamoko(ler a nena)

Q12 Ngano ma jachung ‘ mar odu?

- a. Wuon parwa(dichwo)
- b. An awuon(miyo)
- c. Joodwa
- d. Kwarwa
- e. Mamoko(ler tiende)

Q13 En ngano ma nyaka ngad wach e odu ka kama miyo dhi nyule ka sane mar nyuol ogik?

- a. Miyo ma yach
- b. Dichwo (ja hera ne)
- c. Joodwa
- d. Kwarwa
- e. Mamoko(ler)

**SEKSON B: LONY KATA NGEYO MAR MIYO KUOM TIMO YIERO MA KARE E  
WECHÉ NYODO KA OTUDORE GI KAMA ONEGO ONYUOLIE.**

Q14 Bende ne ingeyo kar thieth man machiegni kodi mane inyalo nyuolie e buo lony ma nyasanai e subcounty ka kinde mane inyolie nyathini matin ni?

- a. EE
- b. Ohoyo

Q15 E pachi in iwuon be ipar ni nyuol e buo lony ma nyasani in gima ni gi nengo?

- a. EE
- b. Ohoyo

Q16 ka iyie ni ober ,ango ma omiyo iparo ni nyuol e buo lony ma nyasanai en gima owinjore. Yier anena achiel ma otudore gi ngeyo mari

- a. Yudrok mar jo lony
- b. Gengruok mar deko ka nyuol obiro marach
- c. Thieth ma itimo kanyo gi kanyo ne miyo kata nyathi
- d. Ok en gima ochuno
- e. Ok angeyo
- f. Mamoko (ler tiende)

Q17 Bende di bedie ni ne in kod luoro kata parruok kuom okenge thieth e bwo lony ma nyasani e kinde mane idhi nyuolo e nyathini matin ni

- a. kuonde mag nyuol
- b. yore mag tero jotuo kar thieth
- c. kak ichuoyo sindan
- d. tiomo yengo ne jatuo
- e. Muonyo yath
- f. Kaka iketo joma mine ka ginyuol
- g. Ne aonge gi luor
- h. Mamoko (ler)

Q18 Gin yore mage gini makelo luoro kendo himo ngima miyo ka onyuol dala kat ka nyamrerwa

- a. Dekruok e timo thieth
- b. Onge gimoramora ma himo
- c. Ok angeyo
- d. Mamoko

Q19 kuom joma ondik piny kagi ere kama geno ni netire sama ne idhi nyuol nyathini

- a. Jalemo mane lemo ni dala
- b. Jathieth ma Jalony
- c. Nyamrerwa
- d. Wedeni/anyuola ni
- e. In iwuon
- f. Mamoko

Q20 Nyathini mogik ne inyuolo kanye

- a. Kar thieth(osiptaal)
- b. Dala nymrerwa
- c. Kar lemo
- d. Mamoko

Q21 Bende nitie gima omiyo diher nyuol e osiptal e bwo lony ma nyasani?ket tik ka iyie ni ober kata ohoyo ka ok iyie.

- a. Bor mar kuma ji odate ka ipimo gi kuende thieth
- b. Chike mar rito jotuo kata welo mathi kar thieth
- c. Rito maling ling mar jotuo
- d. Kaka jocholo keto jonyuol e seche mag muoch
- e. Gik maochuno ni nyaka nyew kaka sabunde,yethe mag rito ler kachiel gi gik mairwako e lwedo e seche mag cholo.
- f. Gik ma itiyo go e ut nyuol kaka pi teyni,gi kuonde dhi oko
- g. Kodo kata chuny jolony matiyo kuonde thieth
- h. Liet kata ngich mar kuonde mag nyuol
- i. Nyuol ma otelie gi jolony kaka daktari gi nurse ka onge nyamrerwa
- j. Arita e yor thieth ma itimo ne miyo kod nyathi kanyo kanyo
- k. Yot mar yudo konyruok ka nyuol obiro marach
- l. Seche mag chako tich e kuonde thieth okinyi
- m. Seche mag chako thieth e kuonde thieth go tieno
- n. Jolony manitie e kuonde thieth

Q22bende nitiere kueche kata chike moko mag anyuola e oganda u madi tami biro nyuol e osiptal

(Yier mar otudore go duoko mari)

- a. Biero ikunyo kata iiko
- b. Miyo gi kata nyathi luokore gi pii maliet
- c. Miyo gi kata nyathi luokore gi pii ma mor mor
- d. Miyo kata nyathi luokore gi pii ma ngich
- e. Da gi nyathi nyakabedie sama inyuolo nyathi
- f. Joma chow ok bedie sama inyuolo nyathi
- g. Mamoko (ler)

Q23 gin yore mage mag wuoth ma de itigo ka itdhi eosiptal seche mag muoch/idhi nyuol

- a. Apiko
- b. Olwenda
- c. Ndiga
- d. Ambulens
- e. Mamaoko( ler)

Q24 E kinde mane idhi nyuolo nyathini mogik ni paro mane mane ingo kuom nengo mar wouth ka idhi e kar thieth ka much kayi( kata kuom kao taksi)

- a. Onge chudo kabisa
- b. Yot kendo romre gi nonoi
- c. Nengo mayot
- d. Bei man malo
- e. Nengo matek molooyo

Q25 E kinde mane inyuolo nyathini mogik,paro mane mae ingo kuom nengo mar nyuol e kuond thieth

- a. Onge chudo kabisa
- b. Yot kendo romre gi nonoi
- c. Nengo mayot
- d. Bei man malo
- e. Nengo matek molooyo

Q26 Bende ne idhi ka nyamrerwa moara mora e kinde kat bang nyuol

- a. EE
- b. Ohoyo

Q27 en nengo marom nade ma ichulo nyamrerwa e gwengu ka Ler duoko mari

**SEKSON C PARO MAR JOMA MINE/JONYOUL KUOM KIT JOLONY KATA JO  
THIETH MAE OSIPTAL**

Q28 E kinde mane inyuolo nyathini mogikni ere kaka di ler kit kat tim jolony matiyo e kuonde thieth magwa?\

- a. Gin johera ahinya
- b. Gin johera
- c. Ok gin johera
- d. Ok gin johera ahinya
- e. Aonge go paro mochung tir

**APPENDIX X: KEY INFORMANT INTERVIEW GUIDE**

Q1 Yie mondo igolie pachi e okenge ma piny kae gi

- Nyoul e bwo lony ma sanai to gi ber ma otudorekode
- Lokroge mokel e chenro mag nyuol to gi kaka gi mulo ngima joma mine mapod nyuol 15-49
- E pachi iwuon be ineno ka chik mar golo oko chudo mar nyuol osudo/medo nyuol e osiptal malo

**APPENDIX XI: LUO FOCUSED GROUP DISCISSION GUIDE(CHENRO MAG PENJ  
MAG GOYO MBAKA)**

- Ere kama di her mar nyuol e to gi angomo miyo?
- Ka dip o ni in kod nyithindo to nei nyuologi kanye?
- Gin yore mage ma dichwo di sir kat konyo go min ode ka ochiegni nyuol
- Bede en gima ber ka dichwo konyo ngama miyo e seche mag nyuol
- Ango miparo tamo joma mine e gwengu ka dhi kwonde thieth mondo gi nyuole
- Bende di ingeye chow moko ma wuoyo kuom pogrwook manitiero bang nyuol ka nymrerwa kata bang nyuol e osiptal
- E pachi iwuon be ineno ka chik mar golo oko chudo mar nyuol osudo/medo nyuol e osiptal malo