PREVALENCE OF SKILLED BIRTH ATTENDANCE, UTILIZATION AND ITS CORRELATES AMONG WOMEN OF SOMALI ORIGIN IN KAMUKUNJI SUB-COUNTY, NAIROBI COUNTY, KENYA

BY

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DECLARATION

This Research Thesis is my original wok and has not been submitted for the award of any degree or any other award in any other institution.

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DEDICATION

I dedicate this research to my beloved mother. I am forever grateful for your encouragement, courage and spirit of endurance.

ABSTRACT

The provision of skilled care during delivery is an indicator to monitor progress in reducing maternal mortality and falls in Goal 3 of the Sustainable Development Goals (SDGs). However, the proportion of Skilled Birth Attendance is low in developing countries. In sub-Saharan Africa, approximately only half of all live births were delivered with the assistance of skilled birth attendance in 2016. The proportion of births assisted by skilled birth attendance in Kenya is 61%, which is one third lower than the international target of 90%.Kamukunji sub-County is considered a high maternal and neonatal burden area and has the lowest antenatal care utilization in Nairobi County. Poor antenatal care is a risk factor for adverse pregnancy outcomes for both the mother and the baby. Despite this, there exists limited information on the prevalence and factors affecting utilization of skilled birth attendance by Somali women in Kamukunji sub-County. The main objective of this study was to determine the prevalence of skilled birth attendance, utilization and its correlates by women of Somali origin residing in Kamukunji Sub-county. Specific objectives were to: determine prevalence of use skilled birth attendance, identify the socio-demographic, economic and cultural factors and examine the perceptions of health workers on factors affecting utilization of skilled birth attendance. The study was cross-sectional in design. Study participants were women of Somali origin of reproductive age who had delivered at least one child in the past, and had been living in the sub-County for at least 12 months. A sample size of 299 was calculated using Fishers' formula from a total population of 13,271 women of reproductive age in study area. The instrument that was used to collect data was a structured questionnaire. Variables of interest were: use of skilled birth attendance; socio-demographic and economic characteristics; cultural practices, and; perceptions of health workers in Kamukunji sub-County. Binary logistic regression was used to identify factors associated with skilled birth attendance. Odds ratio and 95% confidence interval were used to estimate magnitude of association. Results with p value < 0.05 were statistically significant. Altogether, a total of 281 women of Somali origin and eight nurses were interviewed. A total of 274 responded to the inquiry on use of unskilled birth attendance of which 134 (48.9%) reported that they had used unskilled birth attendance for delivery services at least once; while 140 (51.1%) indicated that they had never sought the services of unskilled birth attendance for delivery in their lifetime. The factors that were found to influence the use skilled birth attendance were: secondary level education (OR=5.86(1.32-26.10), p=0.020), divorce (OR=5.19, CI.62-16.66, p=0.006), both the respondent and the spouse employed (OR 9.59 CI 1.19-77.02, p=0.033); husband only employed (OR=8.99 CI3.62-22.33, p=0.0001) and ability to speak other languages besides Somali (OR, 4.83, CI 2.9-10.62, p= <0.001). The following factors were negatively associated with use of skilled birth attendance: inability to speak health worker language (OR-01.4, CI 0.03-071, p=0.017), older age (43-49 years) (OR=0.14, CI 0.03-0.71, p=0.017) and lack of privacy. Although majority of the respondents had reported using skilled birth attendance for their last delivery, the use of unskilled delivery was found to be high among this population as shown by the fact that half of the respondents reported having ever used unskilled birth attendance in their lifetime. There is the need for the Ministry of Health, Division of Reproductive Health and County Department of Health, to design holistic but context based intervention strategies that are specifically focused on addressing the reduction of use of unskilled birth attendance amongst this subpopulation.

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LIST OF ABBREVIATIONS

ANC	:	Antenatal Care
APRHC	:	African Population and Health Research Centre
DHIS2	:	District Health Information System
DHS	:	Demographic and Health Survey
IOM	:	International Organization for Migration
IRC	:	International Rescue Committee
KDHS	:	Kenya Demographic Health Survey
KNBS	:	Kenya National Bureau of Statistics
MDGs	:	Millennium Development Goals
MMR	:	Maternal Mortality rate
MoH	:	Ministry of Health
MUERC	:	Maseno University Ethical Review Committee
NCPD	:	The National Council for Population and Development
NPRC	:	National Patients' Rights Charter
PNC	:	Postnatal Care
SDGs	:	Sustainable Development Goals
STI	:	Sexually Transmitted Infections
TBA	:	Traditional Birth Attendant
UNFPA	:	The United Nations Population Fund
UNHCR	:	United Nations High Commission for Refugees
UNICEF	:	The United Nations Children's Fund
WHO	:	World Health Organization

OPERATIONAL TERMS

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

Live birth: Refers to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life- e.g. beating of the heart, pulsation of the umbilical cord.

Skilled Birth Attendant: Someone trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.

Skilled Care: The usage of skilled attendance during labour, delivery and in the early postpartum period

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter focuses on the background of the study, statement of the problem, and main research objectives, specific research objectives, and research questions, justification of the study and significance of the study.

1.2 Background of the Study

Globally, 287 000 mothers die from complications of pregnancy and childbirth (WHO, 2015). Of all the global maternal deaths reported in 2015, developing regions accounted for approximately 99% of the global maternal deaths, with sub-Saharan Africa alone accounting for roughly 66% (WHO, 2015). In developing countries, women face higher risk of prenatal deaths than those in developed countries (WHO, 2015).

An estimated two million deaths arising from maternal, stillbirths and newborn deaths each year is said to be due to lack of skilled attendance at birth (WHO, 2015). A woman's risk of dying from treatable or preventable complications of pregnancy and childbirth over the course of her lifetime is 1 in 22 in sub-Saharan Africa, compared to 1 in 7,300 in the developed regions (Alkema *et al.*, 2016).

Maternal mortality rate in Kenya is 510 per 100,000 live births, more than double the global rate of 216 maternal deaths per 100,000 live births (WHO, 2015). In Kenya, levels of maternal and neonatal mortality remain high; a Kenyan woman faces a 1 in 35 lifetime risk of maternal death (MOH, 2009), compared to 1 in 7,300 in the developed regions (Alkema *et al.*, 2016).Nairobi County is ranked third amongst the leading 15 counties in Kenya in maternal deaths and has a

higher maternal mortality ratio of 533 deaths per 100,000 live births than the national average of 510 maternal deaths per 100,000 live births (UNFPA, 2014).

Although Kenya is promoting skilled birth attendance during pregnancy and childbirth for both mothers and newborns (Kitui *et al.*, 2013), about 37% of births still take place at home, and not in health facilities (Kenya Demographic Health Survey, 2014).

Use of skilled birth attendance can reduce the risk of stillbirth or death due to intrapartumrelated complication by about 20 percent (UNICEF, 2018). Increasing the percentage of births delivered in health facilities is an important factor in reducing maternal deaths (WHO, 2015). The importance of skilled birth attendance in reducing maternal morbidity and mortality has been underlined by the inclusion of skilled birth attendance as an indicator of the Sustainable Development Goals (UN, 2016).

Latest data from the World Health Organization that covered the period between 2012 to 2017 indicated that 78 per cent of live births occurred with the assistance of skilled birth attendance globally (WHO, 2017). In sub-Saharan Africa, only half of the births were attended to by skilled birth attendants, although the region has the highest maternal mortality rate globally (WHO, 2017).

In Kenya, 61% of all deliveries nationally were reported to have been conducted by skilled birth attendants in 2014 (Kenya Demographic Health Survey, 2014). In Nairobi County, skilled birth attendance is 88.7%. This data, however, is not disaggregated by sub-County (Kenya Demographic Health Survey, 2014).

It has been shown that only 21.7% of urban women refugees of Somali origin use skilled birth attendance in public health facilities in Nairobi (Wanjiku, 2014). Majority of the Somalis in

Nairobi reside in Kamukunji Sub County (Widmann *et al.*, 2014). It has also been documented that in North Eastern region of Kenya, where ethnic Somalis constitute majority of the population, maternal mortality rate is more than double the national maternal mortality rate: between 1,000 and 1,200 per 100,000 live births against 510 deaths per 100,000 births nationally (NCPD, 2015).

likewise, skilled birth attendance has been reported to be on the average of 23% in North Eastern Region of Kenya(Kenya Demographic Health Survey, 2014). Understanding the prevalence and factors that influence the utilization of skilled birth attendance by Somali women in urban areas where services are available is crucial in this study.

1.3 Statement of the Problem

Kenya is among the top ten countries with the highest maternal mortality rates in the world (WHO, 2015). One fifth (21%) of deaths of Kenyan women of reproductive age are due to pregnancy related causes (MOH, 2009).Most obstetric complications could be prevented if women had access to a skilled birth attendance during childbirth (WHO, 2017). Improvements in the coverage of the proportion of births attended by skilled birth attendance may have contributed to declines in maternal mortality between 1990 and 2015 (WHO, 2015).

Kenya has a high maternal mortality rate of 510 per 100,000 live births, more than double the global rate of 216/100,000 (WHO, 2015). Some regions like North Eastern Kenya region, maternal mortality rate is between 1,000 and 1,200 per 100,000 births (UNFPA, 2014). Nairobi County, despite having the largest concentration of health facilities in Kenya, (Nairobi-County, 2014), has a higher maternal mortality ratio of 533 per 100,000 live births than the national rate of 510 per 100,000 live births (UNFPA, 2014).

Use of skilled birth attendance can reduce the risk of stillbirth or death due to intrapartumrelated complication by about 20 percent (UNICEF, 2018). Increasing the percentage of births delivered in health facilities is an important factor in reducing maternal deaths (WHO, 2015). The importance of skilled birth attendance in reducing maternal morbidity and mortality has been underlined by inclusion of skilled birth attendance as an indicator of the Sustainable Development Goals (UN, 2016).

In Nairobi County, although the proportion of births delivered in health facilities in the County is 27% higher than the proportion of births delivered in health facilities nationally (88% versus 61%) (Kenya Demographic Health Survey, 2014), a recent survey has shown an overall 8% decrease in the proportion of women who delivered their last child with the support of skilled birth attendance in Kamukunji sub-County between 2016 and 2017 (Bakibinga *et al.*, 2018).

It has been indicated that only about 21.7% of urban women refugees of Somali origin use skilled birth attendance in public health facilities in Nairobi (Wanjiku, 2014). Majority of the Somalis in Nairobi reside in Kamukunji Sub County (Widmann *et al.*, 2014). Migrant women, including asylum-seeking and refugee women, have a higher risk of experiencing obstetric complications than women in the host population (Kurth, Jaeger, Zemp, Tschudin, & Bischoff, 2010).

Kamukunji sub-County is considered a high maternal and neonatal burden area (Odhiambo, 2017) and the sub-County has some of the worst health indicators (Bakibinga *et al.*, 2018). The sub-County has the highest share of residents with no formal education at 24% and the lowest share of residents with a secondary level of education or above in Nairobi County(KNBS, 2013).

Similarly, it is 13 percentage points above the Nairobi County average with one ward, Eastleigh North, having the highest percentage of residents with no formal education at 46% (KNBS, 2013). Studies have shown that skilled birth attendance is highest among educated women (P. K. Nguhiu *et al.*, 2017).

Goal 3 of the Sustainable Development Goals has set the target of reducing the global maternal mortality ratio to less than 70 per 100 000 live births by 2030 (UN, 2016). Kenya is promoting skilled birth attendance and has introduced free maternity policy (MoH, 2013). However, Kenya has missed its Health Sector Strategic Plan target of reducing maternal deaths to 150 per 100,000 live births by 2017 (Kenya Health Sector Strategic Plan 2014-2018). Likewise, Kenya has missed the Millennium Development Goal of reducing by three quarters, between 1990 and 2015, the maternal mortality ratio (WHO, 2015).

Previous studies on ANC uptake (Herrel *et al.*, 2004; Wanjiku, 2014; Wissink *et al.*, 2005), coverage of skilled birth attendance in Northern Kenya (Herrel *et al.*, 2004; Wanjiku, 2014; Wissink *et al.*, 2005) and integration of Somali refugees (Herrel *et al.*, 2004; Wanjiku, 2014; Wissink *et al.*, 2005) have been studied. However, there is inadequate information on the prevalence and the impact of interplaying social, cultural and economic factors and their influence on skilled birth attendance in an urban setting where services are available among Somali women.

Adequate information on the perspectives of health workers on factors affecting utilization of skilled birth attendance by women of Somali origin in Kamukunji sub-County where they are significant in numbers are not available. Therefore, the study sought to determine the prevalence and identify factors affecting utilization of skilled birth attendance by women of Somali origin in Kamukunji sub-County, Nairobi County, Kenya.

1.4 Justification

Skilled birth attendance is important in reducing maternal mortality. Skilled birth attendance is now a sub-indicator to monitor progress in reducing maternal mortality. Despite a global and national target of ensuring more than 90% of births are assisted through skilled birth attendance, more than 37% of births in Kenya take at home (Kenya Demographic Health Survey, 2014).Increasing the percentage of births delivered by skilled birth attendances important in reducing deaths arising from complications of pregnancy.

The expectation is that if complications arise during delivery in a health facility, a skilled birth attendant can manage them or refer the mother to the next level of care (WHO, 2015). The proportion of Somali women in an urban centre like Nairobi where skilled birth attendance services are available has not been documented. This study was important in the context of current efforts to address poor maternal and neonatal health in Kenya and accelerating the realization of Kenya Health Sector Strategic Plan and Vision 2030.

1.5 Significance

This study brought out some key information that will help in increasing the uptake of skilled birth attendance leading to reduction in maternal mortality. The findings are significant to Ministry of Health and Nairobi County Department of Health and other public health practitioners in appreciating the true burden of non-use of skilled birth attendance, despite an increase in the use of skilled birth attendance for the last delivery among the interviewed women.

The findings on social, economic and cultural factors are of important use to policy makers, planners and intervention strategists in identifying special focus areas that need to be addressed in reaching this sub-population in strategies and efforts aimed at improving skilled birth

attendance including supporting cultural preferences for female midwives and nurses, enhanced privacy and promoting girl child education among pastoral communities.

The findings on health workers perspectives identify important views of local health workers in touch with the community and their own needs including capacity building and routine training for them to provide the required skilled care and boost confidence among care seekers.

1.6 Main Objective:

To determine and assess the prevalence and factors associated with utilization of skilled birth attendance among women of Somali origin in Kamukunji sub-County, Nairobi County, Kenya

1.6.1 Specific Objectives:

I. To determine the prevalence of skilled birth attendance use by women of Somali origin in Kamukunji sub County, Nairobi County.

II. To identify the socio-demographic and economic factors that affects the use of skilled birth attendance by women of Somali origin in Kamukunji sub-County, Nairobi County.

III. To identify the cultural factors that affects the use of skilled birth attendance by women of Somali origin in Kamukunji sub-County, Nairobi County.

IV. To examine the perceptions of health workers on factors affecting utilization of skilled birth attendance by women of Somali origin in Kamukunji sub-County

1.7 Research Questions

I. What is the proportion of women of Somali origin living in Kamukunji sub County who use skilled birth attendance?

II. What are the socio-demographic and economic characteristics of the women of Somali origin using skilled birth attendance in Kamukunji sub-County, Nairobi County?

III. What are the cultural factors that have an impact on the usage of skilled birth attendance by women of Somali origin in Kamukunji sub-County, Nairobi County?

IV. What perceptions do health workers in Kamukunji sub-County hold on the factors affecting utilization of skilled birth attendance by women of Somali origin in Kamukunji sub-County?

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents an overview of the literature review. The first sub-section deals with objective one which is on prevalence of skilled birth attendance, global, regional, Kenya and Nairobi skilled birth attendance statistics. The next sub-section deals with factors affecting utilization of skilled birth attendance and is divided by per objective with objective two covering socio-demographic and economic factors, objective three covering cultural factors and objective four covering perception of health workers. The last part deals with the conceptual framework and knowledge gap.

2.2 Prevalence of Skilled Birth Attendance

Availability and use of skilled birth attendance is important in reducing maternal mortality. The World Health Organization advocates for "skilled care at every birth" (WHO, 2017). Ensuring quality maternity care services can save the lives of women and newborns because skilled birth attendants provide maternal care during pregnancy, childbirth, postpartum period and newborn care at health facilities.

It has been established that use of skilled birth attendance can reduce the risk of stillbirth or death due to intrapartum related complication by about 20 percent (UNICEF, 2018). Increasing the percentage of births delivered in health facilities is an important factor in reducing maternal deaths (WHO, 2015). The importance of skilled birth attendance in reducing maternal morbidity and mortality has been underlined by the inclusion of skilled birth attendance as an indicator of the Sustainable Development Goals (UN, 2016).

Latest data from the World Health Organization that covered the period between 2012 to 2017 indicated that 78 per cent of live births occurred with the assistance of skilled birth attendants globally (WHO, 2017). In sub-Saharan Africa, only half of the births were attended to by skilled birth attendants, although the region has the highest maternal mortality rate globally (WHO, 2017).

In Kenya, 61% of all deliveries nationally were reported to have been conducted by skilled birth attendants in 2014 (Kenya Demographic Health Survey, 2014). In Nairobi County, skilled birth attendance is 88.7%. This data, however, is not disaggregated by sub-County (Kenya Demographic Health Survey, 2014).

A report has shown that only 21.7% of urban women refugees of Somali origin use skilled birth attendance in public health facilities in Nairobi (Wanjiku, 2014). Majority of the Somalis in Nairobi reside in Kamukunji Sub County (Widmann *et al.*, 2014). It has also been documented that in North Eastern region of Kenya, where ethnic Somalis constitute majority of the population, maternal mortality rate is more than double the national maternal mortality rate: between 1,000 and 1,200 per 100,000 live births against 510 deaths per 100,000 births nationally (NCPD, 2015). Similarly, skilled birth attendance has been reported to be on the average of 23% in North Eastern Region of Kenya (Kenya Demographic Health Survey, 2014).

2.3 Factors Affecting Utilization of Skilled Birth Attendance

There is evidence that improvements in the coverage of the proportion of births attended by skilled health personnel and their provision of care have contributed to declines in maternal mortality between 1990 and 2015(WHO, 2015). To improve maternal health, skilled birth attendance was considered the most crucial factor in reducing maternal deaths(WHO, 2015). This is because most obstetric complications could be prevented if women had access to skilled birth attendance during childbirth (WHO, 2017).

The expectation is that if complications arise during delivery in a health facility, a skilled birth attendant can manage them or refer the mother to the next level of care (WHO, 2015). However, utilization of skilled birth attendance can be influenced by a number of factors which include socio-demographic and economic factors (such as age, marital status, level of education, income level and employment), cultural factors (such as language, beliefs, decision making power) and perception of health workers including their knowledge and attitude.

2.3.1 Socio-demographic and Economic Factors Affecting Utilization of Skilled Birth Attendance

The socio-demographic and economic factors that can affect utilization of skilled birth attendance include; age, marital status, level of education, income level and employment. The Kenya Demographic Health Survey 2014, found that according to age, delivery with the assistance of skilled birth attendance is least common among births to mothers age 35-49 (53 percent), and it decreases as birth order increases (Kenya Demographic Health Survey, 2014). Delivery with the support of skilled birth attendants increases with the number of antenatal care visits the mother made.

Age has long been recognized as a key factor in care-seeking behavior. However, patterns regarding age and the utilization of delivery care are somewhat inconsistent, with most studies finding a positive association, and few studies finding a negative or curvilinear association (Faber & Walter, 2017). Studies that have found a positive association hypothesize that maternal age acts as a proxy for women's accumulated knowledge of health care services (Elo, 1992).

For example, in one study that analyzed Demographic and Health Survey (DHS) data from Peru, Elo determined that age was positively associated with having medical assistance at delivery provided by a doctor or a trained nurse/midwife. In another example, a cross-sectional survey on the use of maternal care conducted in a sub-district in Karnataka state, India, found that women over 25 years were more likely to deliver at a health care facility compared to younger women, after controlling for a number of other variables (Mony *et al.*, 2016). Some studies have also found that lack of knowledge associated with older age is a factor as observed by (F. K. Mwangome *et al.*, 2012) on a study related to the barriers to hospital delivery in a rural setting in Coast Province, Kenya: community attitude and behaviors

Skilled birth attendance increases with increasing mother's education and wealth. For example, 25 percent of births to mothers with no education are delivered with unskilled care, as compared with 84 percent of births to mothers with a secondary or higher education who utilized skilled birth attendance (P. K. Nguhiu *et al.*, 2017).

The relationship between maternal education and the utilization of health care has been frequently studied in the literature. Most studies have found a positive association. (Kitui *et al.*, 2013) found that education played a significant role in determining whether a pregnant woman sought skilled delivery in a health facility or not. However, more research is needed on the

strength of the effect as well as on the underlying mechanisms by which education influences women's likelihood of using health care (Vissandjee *et al.*, 1997)

Support for the role of education in affecting the utilization of medical assistance at delivery comes from various studies in developing countries. Using DHS data from Nepal, (Gubhaju, 2009) found that after controlling for several factors (such as availability of services, occupation, economic status, family structure), having a primary school level of education was the most important variable in determining both the increased likelihood of a health institution delivery, and assistance at delivery provided by a health care professional. In a second example using DHS data, in this case from Peru, the role of women's education was examined in relation to the utilization of delivery care (Elo, 1992).

The findings demonstrated that maternal education significantly influenced whether delivery assistance was provided by a doctor or trained nurse/midwife (versus some other attendant), after controlling for service availability, mother's childhood place of residence, and the socio-economic status of the household.

Similarly, in a multivariate analysis of DHS data from Ghana, (Addai, 2000) investigated the factors that affect women's propensity to utilize delivery care. This research revealed that maternal education was the strongest factor in influencing hospital delivery. Women with no or limited education were significantly less likely to have a hospital delivery compared to their counterparts with secondary or higher education.

Raghupathy (1996) reported similar findings in her study from Thailand using DHS data to examine the influence of education on delivery care. The education - utilization relationship was examined after controlling for confounding factors such as maternal age, parity, birth- planning

status, religious affiliation, income, and residence. Findings showed that compared to uneducated women, women with secondary and higher education were significantly more likely to use delivery assistance provided by a trained doctor or nurse/midwife than some other source.

In another example, a study from Bangladesh on women's utilization of health facilities for treatment of obstetric problems (not just delivery care), found that women with a primary school education or above were significantly more likely to use medical care than women with no education, after controlling for socio-cultural and economic variables (Barkat *et al.*, 1997). This prospective study focused specifically on the utilization of medical care by women with obstetric complications and was part of a larger research project on emergency obstetric care in Bangladesh.

Researchers who have found a positive relationship between women's education and utilization offer a number of explanations for the association including the following: educated women are more likely to realize the benefits of using medical assistance at delivery and therefore are more likely to use such care; education may enhance female autonomy thereby enabling women to make decisions about their own health; and education increases knowledge about health care, subsequently increasing demand for delivery services (Gubhaju, 2009).

Closely related to the socio demographic factors are economic factors which have been investigated. Studies reveal that, 30 percent of births to mothers in the lowest wealth quintile are delivered with skilled birth attendance, compared with 93 percent of births to mothers in the highest quintile. Private-sector skilled birth attendance utilization is more common among births to women in the higher wealth quintiles and women at higher educational levels (Brugha & Zwi, 1998).

Studies have repeatedly demonstrated a positive association between economic factors and the utilization of health care (Thaddeus & Maine, 1994). Because income data is frequently unavailable or meaningless from studies in developing countries, other economic indicators (such as household wealth, family resources, and husband's occupation), are often used to reflect women's and their family's ability to bear the cost of health care.

For instance, a multivariate analysis of DHS data from Turkey determined that household wealth (including car ownership, type of sanitation facilities in the household, and type of floor in the house) was positively associated with choosing both a health facility delivery and medical assistance for home deliveries (Celik & Hotchkiss, 2000).

A study from Karnataka, India, for example, showed that ownership of consumer durables (including radio, TV, fan, refrigerator, furniture, washing machine, bicycle, motor vehicles, and tractor) was a significant predictor of a health facility delivery (Bhatia, 1995).

Similarly, a multivariate analysis of DHS data from Nepal found that the economic status of the household had a positive and significant effect on delivery at a health facility (Gubhaju, 2009). Economic status was measured by a composite score of several indicators of household possessions (including piped water, toilet, non-dirt floor, electricity, radio. TV, telephone, and bicycle). (Barkat *et al.*, 1997) reported similar findings in their study from Bangladesh on the utilization of emergency obstetric care by women with complications.

Better economic status (as measured by land ownership and husband's occupation) exhibited a strong positive association on women's (and their family's) decision to seek treatment for obstetric problems. The studies cited above illustrate how household wealth or possessions can

be used as economic indicators of a woman's and her family's ability and willingness to pay for the out-of-pocket expenditures that are associated with the use of facility-based delivery care.

Moreover, the findings from such research demonstrate that the use of delivery care is clearly affected by economic factors. Qualitative research from India and Bangladesh further emphasizes the importance of economic factors in relation to the utilization of delivery care (Griffiths & Stephenson, 2001); (Rashid *et al.*, 2001).

For example, in a qualitative study from Maharashtra, India, women with young children were recruited using a “snowball' technique and were interviewed in-depth about their use of maternal health care during pregnancy.

The findings revealed that even though delivery at a government hospital was free, the costs that would be incurred in traveling to the hospital resulted in many women delivering at home (Griffiths & Stephenson, 2001). In a qualitative study on delivery care from Bangladesh, rural women aged 20 to 40 who had had at least one live birth, were purposively selected for in-depth interviews.

An important finding from the research was that economic constraints were one of the main factors that inhibited women from accessing facility-based delivery care, even if they had obstetric complications ((Rashid *et al.*, 2001). Indeed, women who have limited economic resources may be more likely to resort to home rather than institutional deliveries largely because of the costs associated with the latter.

2.3.2 Cultural Factors Affecting Utilization of Skilled Birth Attendance

Cultural factors that can affect utilization of skilled birth attendance include; beliefs on causes of illness, religion, language and the ability to communicate with others and family power

dynamics including who makes the final decision including the one related to health seeking behaviour. It is well accepted that illness factors influence health care-seeking behavior (Webair & Bin-Gouth, 2013). To begin with, individuals must first recognize that a problem exists. The decision to seek care is then shaped by the perceived severity and the perceived etiology of the problem.

In some cases, it is related to the ability to make the decision to seek healthcare. For example, a study on factors influencing deliveries at health facilities in a rural Maasai Community found that Maasai women were not the final decision makers was a barrier to health facility delivery (Karanja *et al.*, 2018).

Inability to express themselves in the language of the skilled birth attendants among many Somali women living in South Africa has been associated with underutilization of healthcare services (Hunter-Adams & Rother, 2017). Irregular opening hours, long waiting hours and language barrier to relay health information are factors that were identified by previous studies to be affecting women when seeking health services (Kongnyuy *et al.*, 2009).

In another qualitative study on barriers to uptake of skilled birth attendance conducted in Malindi County in Kenya, it was revealed that it was easier for women to report their issues to traditional birth attendants in their local dialect than they could in a health facility (Carter, 2010).

Religion has been shown to have significant impact on healthcare seeking behaviour. For example, an increasing number of contemporary research publications acknowledge the influence of religion and culture on sexual and reproductive behavior and health-care utilization. It is currently hypothesized that religious influences can partly explain disparities in sexual and reproductive health outcomes (Taheri, 2008)

According to (Taheri, 2008), contemporary Muslims' approach to health care is still strongly based on preventative measures. In many cases, although Muslim patients seek a curative process through surgical or medical means, they still look to their religious and cultural heritage to address their spiritual, social and cultural needs (Taheri, 2008)

Preventative healthcare strategies in Muslim experience include personal hygiene, dietary measures such as the restriction in eating specific ingredients (such as pork and its byproducts, and drinking alcohol), and the avoidance of addictive habits such as smoking tobacco or over-consumption of food.

Clinical and public health research across the world have continually reported on how patients, primarily women, with immigrant background face challenges in obtaining sufficient levels of health care in secular health-care settings (Taheri, 2008). Further, it is evident that women with migrant background face greater disparities in health (Wray *et al.*, 2014) and due to linguistic, cultural, and socioeconomic factors (Boerleider *et al.*, 2013).

Yet, other studies suggest that, for example, increased prenatal and maternal morbidity among foreign-born women cannot be explained by cultural or specific religious factors (Esscher *et al.*, 2014). Although still an under communicated aspect of health disparity research, an increasing number of research publications acknowledge the influence of religion on sexual and reproductive behavior and health-care utilization (Kleinman & Benson, 2006).

Within all major religious traditions, Judaism, Christianity, Islam, Hinduism, Sikhism, and Buddhism, scholars have in one way or another reflected upon the meaning of sexuality, providing frameworks for good and bad sexuality, characteristics of male and female sexuality, and family planning strategies. Thus, religion cannot be easily separated from sexuality and

reproductive health. In common for all major religions is that they offer a distinct belief system, which aims to guide devout followers in sexual and reproductive health matters (Arousell & Carlbom, 2016). Yet, it is also acknowledged that religion may have a more or less profound influence on the real-life practice of devout people, a fact also illustrated in several research contributions showing that personal interpretations of any faith tend to vary from very liberal to conservative and traditional (Khorfan & Padela, 2010).

2.3.3 Perception of Health Workers

The relationship between patients and service provider is said to have an impact on future utilization of maternal services (Mannava *et al.,* 2015) and (Converso *et al.,* 2015). Issues like privacy, confidentiality as well as sensitivity of the staff change patient satisfaction on quality of the services.

It is said to be reflected on the willingness to return for the same services in the forthcoming pregnancy. In Tanzania, a study associated poor communication by the health providers during antenatal attendance to prevailing low hospital delivery (Magoma *et al.*, 2011).

A negative birth experience has been shown to have a significant impact on the well-being and future choices of mothers. (Smarandache *et al.,* 2016). Similarly, others associated maternal delays in using maternal services with previous negative experiences with the health staff interaction. Likewise, discourtesy by health workers and disrespect for local cultural values causes resentment among clients (Mannava *et al.*, 2015).

Inability to express themselves in the language of the skilled birth attendants among many Somali women living in South Africa has been associated with underutilization of healthcare services (Hunter-Adams & Rother, 2017).

Irregular opening hours, long waiting hours and language barrier to relay health information are factors that were identified by previous studies to be affecting women when seeking health services (Kongnyuy *et al.*, 2009). The study also mentioned feeling of mistrust, lack of respect and cultural insensibility among the health workers as some of the problems the clients face in reference to staff interaction during service delivery.

2.3.4 Conceptual Framework

This study explored several factors that may influence utilization of skilled birth attendance. The election of dependent variables was based on their theoretical and empirical importance as reported in literature and they include socio-demographic factors, economic factors, cultural factors, and perception of health workers. See conceptual framework below (Figure 1).

The dependent variable is skilled birth attendance. This will indicate whether women had utilized skilled birth attendance through someone trained to proficiency in the skills needed to manage normal pregnancies, childbirth and the immediate postnatal period, and has delivered at a health facility.

However, this is affected by the independent variables. These include socio-demographic and economic factors, such as maternal age, where research has established that delivery with the assistance of skilled birth attendance is least common among older women(Kenya Demographic Health Survey, 2014), and that it decreases as birth order increases.

Similarly, level of income and education and employment where research shows that skilled birth attendance increases with increasing mother's education and wealth (P. K. Nguhiu *et al.*, 2017), and cultural factors such as religion/belief that can determine preference for female practitioners for example, causes illnesses and how one should react to possible danger, and

language which can determine the ability to communicate with others including health staff(Carter, 2010); and family power dynamics including who makes the final decision on seeking healthcare and where(Karanja *et al.*, 2018). These independent factors determine whether a pregnant woman will end up using skilled birth attendance or not.

FACTORS AFFECTING UTILIZATION OF SKILLED BIRTH ATTENDANCE

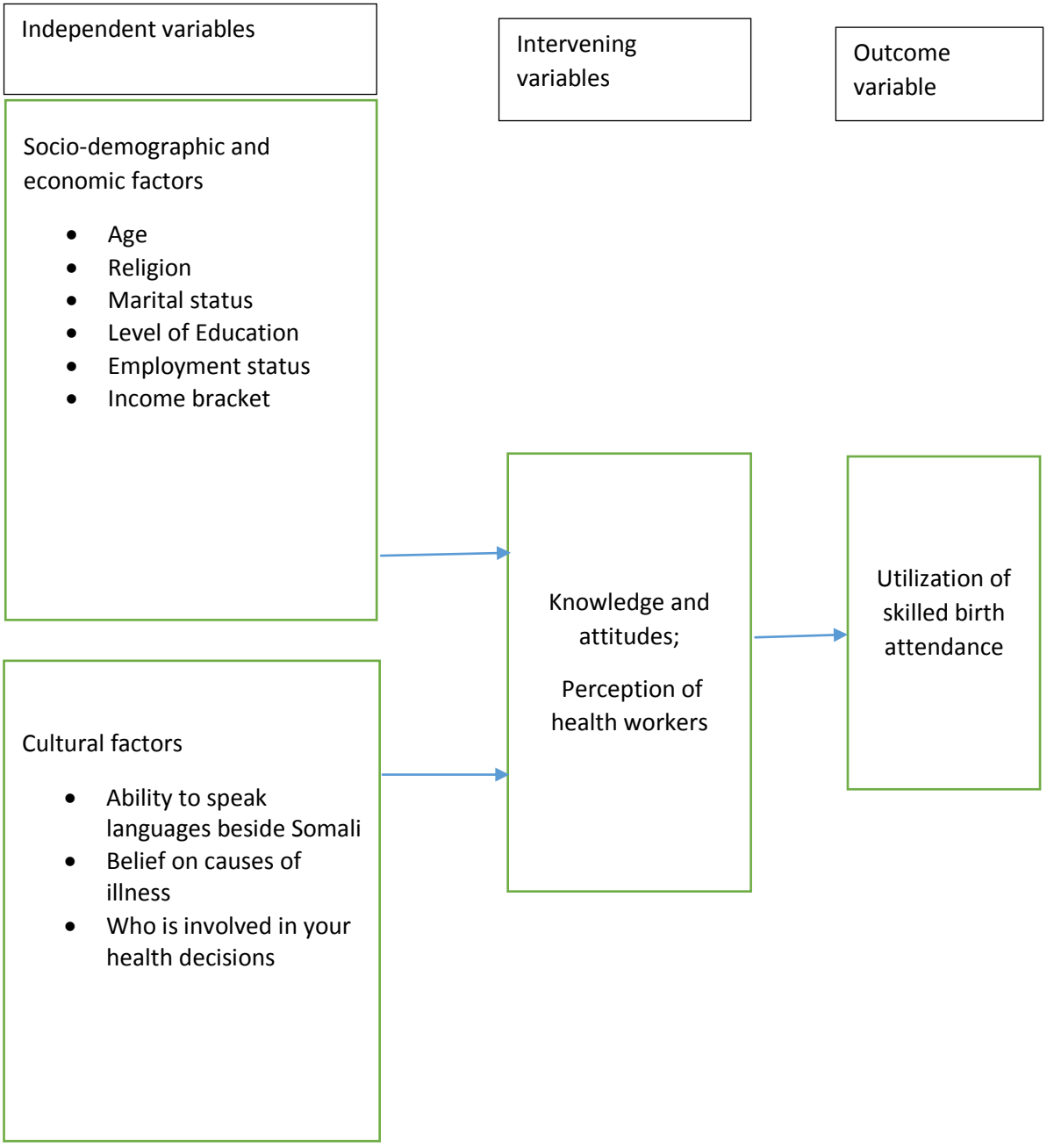

Figure 1: Conceptual framework on factors affecting utilization of skilled birth attendance.

2.4 Gaps in Knowledge

A recent survey conducted in Kamukunji sub-County has shown an overall 8% decrease in the proportion of women who delivered their last child with the support of skilled birth attendance in Kamukunji sub-County between 2016 and 2017 (Bakibinga *et al.,* 2018). However, reasons of decrease and breakdown of communities was not indicated. This is an area that merits research.

A study conducted in Nairobi County indicated that only about 21.7% of urban women refugees of Somali origin use skilled birth attendance services in public health facilities in Nairobi (Wanjiku, 2014). However, this research did not address the prevalence of skilled birth attendance and was confined to coping mechanism of only refugee women in Nairobi and not specifically among Somali women.

The research has not addressed factors influencing the uptake of skilled birth attendance and associated factors. It is not known whether all women refugees share the same characteristics. This is an area that merits research.

According to a baseline survey conducted between November 2016 and January 2017 by African Population and Health Research Center(APHRC, 2017), only 51.8 percent attend ANC the recommended four times. It is the same for post-natal care where only 16.7 percent attended while those who sought the care for their babies at least twice were 52.1 percent. This has been attributed to a weak linkage between the community and health facilities and a poor follow-up on pregnant mothers and newborns to ensure that they receive the services they have been referred for.

In some cases, even if the patients follow through with referrals, they do not receive the services they require (APHRC, 2017). However, the study did not have the perspective and the perception of health workers in Kamukunji. Furthermore, the survey was not limited to Somali women and

the focus has been on antenatal uptake rather than on skilled birth attendance and associated factors. This is an area that merits research.

A study on the determinants of utilization of maternal and neonatal healthcare services by mothers in Embakasi sub-County, Nairobi, Kenya, (Bakibinga *et al.*, 2018), has also indicated that Kamukunji sub-County is considered a high burden area for maternal and neonatal mortality. However, the study did not address current evidence and practice in the area and this merits research.

In a study related to determining the effective coverage of maternal and child health services in Kenya, using demographic and health survey data sets and tracking progress towards universal health coverage, socio-demographic factors that influence the utilization of facility deliveries were discussed. For example, the research found that according to age, delivery in a health facility is least common among births to mothers age 35-49 (53 percent), and it decreases as birth order increases (Kenya Demographic Health Survey, 2014).

Utilization of skilled birth attendance increases with the number of ANC visits the mother made. It also increases with increasing mother's education and wealth. For example, 25 percent of births to mothers with no education are delivered in a health facility, as compared with 84 percent of births to mothers with a secondary or higher education (P. K. Nguhiu *et al.*, 2017).

However, cultural factors and the perspective of health workers were not studied. This is an area that merits research because many women often decide where to deliver late into their pregnancies. Such delays, due to interplay of social, cultural, economic and coupled with a high fertility rate reduce delivery safety.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodology that was used in the research study. It describes the study site, research design, instruments for data collection, the study participants, calculation of sample size, inclusion and exclusion criteria, sampling method, training of research assistants, pilot study, reliability and validity, data collection procedures, minimization of biases and errors, data analysis, binary logistic regression and ethical considerations.

3.2 Study Site

The study was conducted Kamukunji sub-County. Kamukunji sub-County is one the 17 sub Counties that comprise Nairobi County. The sub County borders Starehe sub-County on the North and West, Makadara on the East and Southern part, Embakasi on a corridor stretch to the East and a narrow section of Kasarani sub-County.

It has an area of 11.7sq km, with an estimated population of 201,783 (Kenya Demographic Health Survey, 2014). The population offemales in the sub County is 90,899 while 106,884 are males. The sub County has a population density of 30,259 Km2 (Nairobi-County, 2014).

Kamukunji is divided into three administrative divisions, namely: Pumwani, Bahati and Eastleigh divisions which are further subdivided into nine administrative locations and 18 Sub-locations (NG-CDF, 2017). Kamukunji Sub County is amongst the four most densely populated Sub Counties in Nairobi County, namely: Mathare, Embakasi North, Ruaraka and Kamukunji. These sub Counties have population densities estimated at over 20,000 people per square kilometer (Nairobi-County, 2014).

Kamukunji Sub County has six public health facilities namely: Pumwani Hospital, Eastleigh Health Centre, Bahati Health Centre, Muthurwa Health Centre, Shauri Moyo Health Centre, and Biafra Clinic. According to Kenya Health Sector Strategic Plan III (2012–2017), levels of service delivery in the Kenya Healthcare System are grouped into four tiers namely Tier 1: Community, Tier 2: Primary Care level; Tier 3: County level and Tier 4: National level (Kenya Health Sector Strategic Plan 2014-2018). Based on this, Pumwani Hospital falls within Tier 3 while Eastleigh, Muthurwa and Bahati Health Centre's fall under Tier 2. Shauri Moyo and Biafra Clinic fall under Tier 1.

Kamukunji sub-County is reported to be among the top two sub-Counties in Nairobi County with the worst health indicators (Bakibinga *et al.*, 2018). The reported proportion of persons with no formal education in Kamukunji sub-County is 24% (KNBS, 2013). This is the highest proportion of people with no formal education in Nairobi County, and more than the double the proportion of people with no formal education in Nairobi County which is 11% (KNBS, 2013) . A total of 40 % of Kamukunji sub- County residents is reported to have secondary level of education and above. This is 20% lower than the average of the Nairobi County, which is 51% (KNBS, 2013).

Eastleigh North, which has the largest population with the wards of Kamukunji sub-County has the highest percentage of residents with no formal education at 46% (KNBS, 2013). A recent survey revealed that there was an overall 8% decrease, from 93% in 2016 to 85% in 2017, of the proportion of women who delivered their last child using skilled birth attendance in Kamukunji sub-County (Bakibinga *et al.*, 2018).

The profile of health personnel in the County shows that the number of nurses per 100,00 people in Nairobi County is 53 nurses 100, 000 people, about the same as the national figure which is 55 per 100,000 people. The number of doctors is 14 per 100,000 people which is 29% higher than

the national rate which is 10 per 100,000 people (Nairobi-County, 2014). In 2012, the three leading causes of ill health, based on out-patient attendance records amongst those aged five years and below, were respiratory diseases, diarrheal diseases and skin diseases. The three leading causes of deaths among the under-fives in Nairobi County are pneumonia, prematurity and diseases of respiratory system, while the three leading causes of death among those over 5 years of age are general respiratory diseases, tuberculosis as a specific cause of death and other accidents (Nairobi-County, 2014).

3.3 Study Design

This was analytical cross-sectional study design in which prevalence and factors affecting utilization of skilled birth attendance was assessed among women of Somali origin who were aged between 18 and 49 years, had had at least one delivery in the past, and had resided in Kamukunji sub-County for not less than one year prior to the study. Cross sections study design was chosen because the study aimed at estimating prevalence of uptake of skilled birth attendance and its correlates at the same time. Cross-sectional studies are observational studies whereby outcome and risk factors are measured at the same time and give information on prevalence of an outcome and risk factors(Mugenda & Mugenda, 1999). Additionally, cross sectional studies take a shorter time to conduct, are is inexpensive and recommended when measuring the burden of health related issues at a time in a specific population for the purpose of allocation of resources, health planning, monitoring and evaluation, before planning for a cohort study or as a baseline in a cohort study(Setia, 2016).

3.4 Study Population

The study population comprised women of Somali origin in the age bracket of 18-49 years, who have had at least one delivery in the past and had been residing in Kamukunji sub-County for at least 12 months at the time of data collection. Kamukunji sub-County has a population of

201,783, of which approximately 13,277 women of Somali origin are the in reproductive age category(UNHCR, 2015). The study also interviewed eight nurses working in Kamukunji public health facilities.

3.5 Sample Size Calculation

Using a formula from Fishers the desired sample size was calculated as follows:

$n = \frac{Z^2\ P(1-P)}{d^2} = \frac{1.96^2\ (0.23)(1-023)}{0.05^2} = 272$

Where,

n= desired sample size

Z = score for 95% confidence level which is equal to 1.96

p = proportion of the target population of the whole population in the sub County which is 0.23

q is the estimated population not being measured, which is = 1-p=1-0.23= 0.77

d is the margin of error allowed, which for this study is 5% (0.05)

Substituting, $n = \frac{1.96^2\ (0.23)(1-023)}{0.05^2} = 272$

Adding 10% of 272 which is 27 to original sample size of 272 to cater for non response rate, the final proposed sample size will be 272+27=299

n= 299.

3.6 Inclusion Criteria

For the purpose of this study, the participants had to meet the following criteria: Be women of Somali origin, aged between of 18-49 years; had had at least one delivery in the past, and had been residing in Kamukunji sub-County for at least 12 months at the time of data collection.

3.7 Exclusion Criteria

The study excluded the following from participation in the research: those who were below 18 years and above 49 years in age; those in the stated age bracket of 18 to 49 years but had not had any child delivery, and those who had not resided in Kamukunji sub-County for the past 12 months.

3.8 Sampling Procedure

All the five wards of Kamukunji sub-County were included in the study. Stratified sampling methods were used to select the participants of the study from the wards. Kamukunji sub-County is divided into five wards namely Eastleigh North, Eastleigh South, Pumwani, California and Eastleigh Airbase. Participants from each ward were chosen based on probability proportionate to size (PPS). See Table 1 below.

Systematic sampling method was used to approach households at an interval of 50 metres. One eligible woman per household was interviewed. The women were approached in their homes and after introduction; they were given information about the study and asked if they were willing to participate. Those who gave verbal consent on willingness to participate also gave a written consent by signing on the 'consent form'.

In each of the six public health facilities in Kamukunji Sub County listed within the study site, a senior nursing officer who was highly knowledgeable on matters concerning delivery especially by women of Somali origin, was purposively selected. For Pumwani Hospital and Eastleigh Health Centre, two senior nurses were interviewed. Permission to interview the nurses was sought from the facility management who then directed the researchers to the nurses to interview. The nurses were informed about the study, and then both verbal and written consent was sought from them. Once consent was granted, the researcher conducted the interview.

Table 1 Proportionate Allocation of sample size

No.	Ward	Somali women of reproductive age in Kamukunji	Sample Size
1.	Eastleigh North	2,752	62
2.	Eastleigh South	4,217	95
3.	Pumwani	2,352	53
4.	California	1,243	28
5.	Eastleigh Airbase	2,707	61
Total		**13,271**	**299**

3.9 Data Collection Instruments

Data was collected using semi structured questionnaires for women participants were both open and close ended (Appendix V). Questionnaire for health workers was close ended (Appendix VI).

The questionnaire was designed to get information on the following variables: Socio-demographic and economic factors (ethnicity, age, religion, residence, education level, marital status, income level and employment status); cultural factors (language, health decision influencers, view on pregnancy and causes of illness); and on perceptions of nurses.

Education level was based on the current levels of education in Kenya where primary education is designed to provide eight years of primary education, secondary education to provide four years of education and post-secondary education including tertiary and University Education.

3.10 Training of Research Assistants

Two research assistants were trained to collect data for this study. The two were chosen on the basis that they had completed at least three years of training as nursing students, could approach all women in study area, spoke the local language and were familiar with health research. and could guide the participants. The two were given one-day training on the proposed research and important ethical and objective data collection procedures.

3.11 Pilot Study

The researcher carried out a pilot study in Eastleigh North to pre-test and validate the questionnaire. Eastleigh North has the highest population in Kamukunji sub-County. A total of 10 women were interviewed.

3.12 Reliability and Validity

Reliability of the data collection tools was established during the pre-test sessions. Pre-testing was done in order to check if the questionnaire was accurate and if once administered, they give consistent responses.

Validity of the questionnaire was tested by checking whether the data collected with the questionnaire was relevant and answered the questions as intended to satisfy the objectives of the study.

3.13 Data Collection Procedures

The principal researcher and two research assistants collected data during a period of two weeks from 15 to 29 July 2018.This process involved collection of data using structured questionnaires. The following variables were collected: whether the participants had ever utilized skilled birth attendance for child delivery; socio-demographic and economic characteristics of the participants (ethnicity, age, religion, education level, marital status, income level and employment status);

cultural practices of the participants (which comprised: language, health decision influencers, what participants thought were causes of illness), and perceptions of nurses in Kamukunji sub-County regarding the use of skilled birth attendance by women of Somali origin residing in Kamukunji sub County.

3.14 Minimization of Biases and Errors

To reduce bias related to the sampling procedure, the study only focused on women of Somali origin who were of reproductive age, have had at least one child in the past and who have lived in Kamukunji sub-County in the past 12 months. To reduce biases during the data collection, the research assistants were trained. They were chosen based on the fact that they could approach all women in study area, spoke the local language and were familiar with health research and could guide the participants. Both were qualified nurses from the study area. The data collection tools were pre-tested in one of the wards and the principal investigator supervised the research assistants and verified the data collected on daily basis.

3.15 Data Analysis

Collected data from the study was thoroughly checked and validated for accuracy and completeness. Data captured in questionnaires were double entered into an Ms Excel database. The data was validated to check for discrepancies and then imported into STATA V.14 for analysis. The data was stored in flash disks for backup before and after analysis. Descriptive analysis was done using frequencies, which were represented using graphs and tables. Inferential statistics was done using binary logistic regression. Frequencies were used to indicate prevalence of skilled birth attendance while the regression model was used to identify significant factors influencing utilization of skilled birth attendance.

3.16 Binary Logistic Regression

Binary logistic regression model was used to identify the predictors of utilization of skilled birth attendance in health facilities. From the binary logistic regression model, variables which were statistically significant ($p<0.05$) were picked as the ultimate predictors.

The general logistic model is given by;

$$Log\left[\frac{p(y=1)}{p(y=0)}\right] = b0 + b1xI + b2x2 + b3x3 + b4x4 + b5x5 + b6x6 + b7x7 \ldots + bnxn$$

Where

- y is the dependent variable which is utilization of skilled or unskilled birth attendance(0=utilization of unskilled birth attendance, 1=utilization of skilled birth attendance).
- b0 is the intercept.
- x1, x2, x3 indicate the independent variables (age, religion, marital status, level of education, employment status, income bracket).
- b1, b2, b3, b4 … indicate the logistic regression coefficients for the predictor variables, then exp(b1), exp(b2), exp(b3), exp(b4) is the odds ratio corresponding to a unit change in a predictor variable. The parameter, b1, associated with x1 represents the change in the log odds from x= 0 to x= 1. So, the odds ratio is obtained by simply exponentiating the value of the parameter associated with the independent factor

The dependent variable y is binary whereby;

y= 1 if y is utilization of skilled birth attendance.
0 if y is utilization of unskilled birth attendance.

3.17 Ethical Permissions

Permission to conduct the study was sought and obtained from Maseno University School of Graduate Studies (Appendix I). Ethical Clearance was sought and obtained from Maseno University Ethical Review Board (Appendix II). Permission and authorization to conduct the research was sought obtained from the National Commission for Science, Technology and Innovation (Appendix III).

Before obtaining consent from the participants, the main purpose of the study and all the processes in collecting data, analysis and presentation were explained to participants and that they would be interviewed as individuals; there would be no personal identifier that could link the findings to any individual participants.

They were also informed that data would be analysed and presented as aggregate and not as individual (Appendix IV). Only those who gave informed consent were interviewed. Participants were free to move out of the study any time or decline to answer some sections of the questionnaire if they wished so.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the results of the study based on objectives.

4.2 Socio-Demographic Characteristics of Respondents

A total of 281 participants, who were women of reproductive age of Somali origin and residing in Kamukunji sub County during the study period were interviewed. Table 2 below presents the demographic characteristics of the women of Somali origin residing in Kamukunji sub County in Nairobi County. Those in the age bracket of 25 to 29 years were the majority and comprised 93/280 (33.2%), followed by those aged between 30-35 years who comprised 62/280 (21.1%). The age brackets of 43-49 were 33/280 (11.8%).

The overwhelming majority of these participants, 272/279 (97.5%), were Muslims. About three quarters, 214/281(76.2%) were in the income bracket that is categorized as low-income, while slightly less than a quarter, 63/281 (22.4%), were categorized in the Middle-income group. Those in Upper-Middle and High-income brackets were low and comprised only 3/281 (1.1%) and 1/281 (0.4%) respectively.

Slightly less than three quarters, 202/280 (71.9%), of those interviewed were married, while 37/280(13.2%) reported that they were divorced. Those who reported that they were single at the time the data was being collected were 22/280 (7.8%), while 19/280 (6.8%) were widows.

Table 2 Socio-demographic characteristics, Women of Somali origin, Kamukunji Sub-County, July 2018

Characteristics	Frequency (n)	Percent (%)
Age bracket (n=280)		
18 - 24	47	16.79
25 - 29	93	33.21
30 - 35	62	22.14
36 - 42	45	16.07
43 - 49	33	11.79
Total	*280*	*100*
Religion (n=279)		
Christian	0	0
Muslim	272	97.49
Traditional	2	1.79
None	5	0.72
Total	*279*	*100*
Income Bracket (n=281)		
Lower	214	76.16
Lower middle	63	22.42
Upper middle	3	1.07
High income	1	0.36
Total	*281*	*100*
Education level (n=281)		
Eight years of Primary	79	28.11
Twelve years of Secondary	60	21.35
Post-secondary education	29	10.32
No education	113	40.21
Total	*281*	*100*
Marital status (n=280)		
Single	22	7.86
Married	202	72.14
Divorced	37	13.21
Widowed	19	6.79
Total	*280*	*100*
Country of birth (n=281)		
Kenya	172	61.21
Somali	89	31.67
Other	20	7.12
Total	*281*	*100*

4. 3 Prevalence of Skilled Birth Attendance among Women of Somali Origin in Kamukunji sub-County

4.3.1 Use of Skilled Birth Attendance for Last Child Delivery

Information was sought from the participants regarding whether they had used skilled birth attendance or unskilled birth attendance for their last child delivery. Of the 281 respondents, 250 (88.96%) reported that they utilized skilled birth attendance for their last child delivery, while 31 (11.04%) indicated that they utilized unskilled birth attendance. Therefore, the point prevalence of skilled birth attendance in Kamukunji sub-County is 88.96%. (See Figure 2).

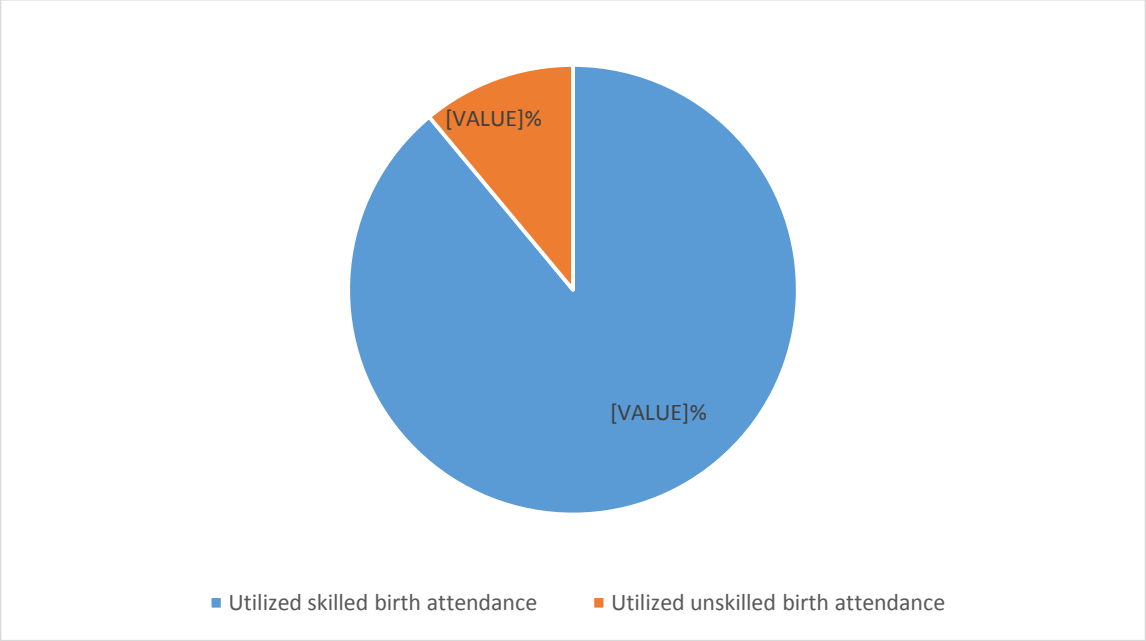

Figure 2: Use of skilled birth attendance for last child delivery

4.3.2 Lifetime Use of Skilled Birth Attendance

The prevalence of use of skilled birth attendance for period prevalence was obtained by response to the question whether the respondent had "ever used" unskilled birth attendance for any of their children's delivery. A total of 274 responded to this inquiry. Of the 274, a total of 134 (48.9%) reported that they had used unskilled birth attendance for delivery services at least once; while 140 (51.1%) indicated that they had never utilized unskilled birth attendance for delivery in their lifetime. (See Figure 3).

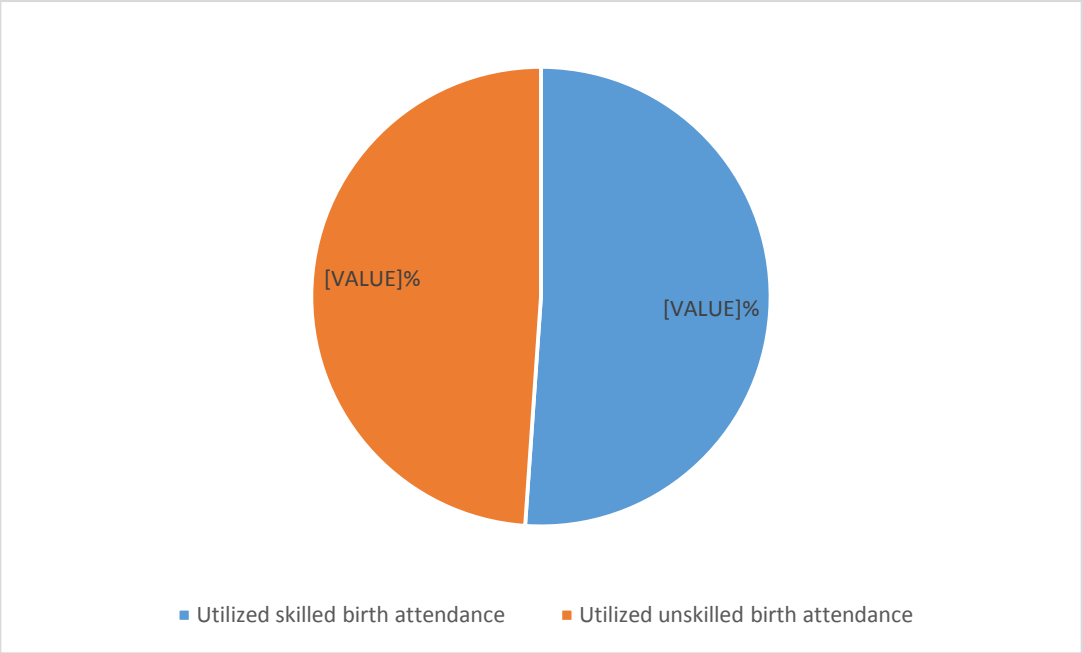

Figure 3:Lifetime use of skilled birth attendance

4.4 Socio-Demographic and Economic Factors and the Use of Skilled Birth Attendance

A logistic regression was performed to assess the socio-demographic and economic factors that could affect the use of skilled birth attendance among the respondents. The factors that were assessed were age bracket, level of education attained, marital status, income bracket and employment status of self or spouse. The factors that were found to influence the use of skilled care delivery were age bracket, level of education attained, marital and employment status of self or spouse (Table 3).

Those who attained secondary level education level were more likely to use skilled birth attendance than those in the category of no education (OR=5.86(1.32-26.10), p=0.020). Among the marital status, those who reported that they were divorced at the time of the interview were found to be significantly associated with the use of skilled care delivery with analysis indicating that they were 5.19 times more likely to use skilled care than those in the comparative group who were in single category (OR=5.19, CI.62-16.66, p=0.006).

Employment status of self or spouse was also significantly associated with use of skilled birth attendance. Those who reported that both the respondent and the spouse were employed and those who reported that only husband was employed were significantly associated with use of skilled birth attendance when compared to where none was employed. OR 9.59 CI 1.19-77.02, p=0.033 and OR8.99 CI3.62-22.33, p=0.0001 respectively. Age bracket was significant with our analysis with those in the age bracket 43-49 indicating that they were less likely to use skilled care delivery services OR 0.14, CI 0.03-0.71, p=0.017. Income bracket was found to have no significant association with the use of skilled care delivery services.

Table 3 Socio-economic factors and use of skilled birth attendance, women of Somali origin, Kamukunji Sub County, July 2018

Variable	n	Utilized skilled birth attendance	Did not utilize skilled birth attendance	COR (95% CI)	p value
Age bracket (n=280)					
18 - 24	47	14(29.79)	33(70.21)	1	
25 – 29	93	23(24.73)	70(75.81)	0.55(0.11 – 2.74)	0.462
30 – 35	62	15(24.19)	47(75.81)	0.41(0.08 – 2.15)	0.295
36 – 42	45	15(33.33)	30(66.67)	0.21(0.04 – 1.03)	0.054
43 – 49	33	14(42.42)	19(57.58)	0.14(0.03 – 0.71)	0.017*
Highest level of education (n=281)					
No education	113	25(22.12)	88(77.88)	1	
Eight years of Primary	29	28(96.55)	1(3.45)	1.79(0.74 – 4.33)	0.194
Twelve years of Secondary	60	22(36.67)	38(63.33)	5.86(1.32 – 26.10)	0.020*
Post-Secondary education	79	6(7.59)	73(92.41)	2.73(0.60 – 12.46)	0.195
Marital status (=280)					
Single	22	7(31.82)	15(68.18)	1	
Married	202	53(26.24)	149(73.76)	0.63(0.16 – 2.39)	0.492
Divorced	37	15(40.54)	22(59.46)	5.19(1.62 – 16.66)	0.006*
Widowed	19	6(31.58)	13(68.42)	2.29(0.57 – 9.17)	0.244
Income Bracket (n=281)					
Lower	214	54(25.23)	160(74.77)	1	
Lower middle	63	27(42.86)	36(57.14)	1.60(0.59 – 4.37)	0.355
Upper middle	3	0	3(100.00)	1	
High income	1	0	1(100.00)	1	
Are you or your spouse employed (n=280)					
None of us is employed	56	16(28.57)	40(71.43)	1	
Respondent is employed	28	11(39.29)	17(60.71)	2.01(0.65 – 6.16)	0.224
Husband is employed	173	47(27.17)	126(72.83)	8.99(3.62 – 22.33)	<0.0001*
Both of us are employed	23	7(30.43)	16(69.57)	9.59(1.19 – 77.02)	0.033*

4.5 Cultural Factors and the Use of Skilled Birth Attendance

The following elements were assessed on cultural factors: ability to speak other languages besides Somali, the persons involved in decision making on health actions, dominant belief held on the causes of illness, and the respondents' view on pregnancy.A majority of the respondents,189 (68.5%) indicated that they were able to speak other languages beside Somali, while 87 (31.5%) indicated that they could only speak in Somali.

Regarding the inquiry on those who were involved in decision making on health actions besides self, it was found that the majority of the respondents 104 (37.4%) have indicated their husbands, followed by extended family, 62 (22.3%) and mother of the respondents at 60 (21.6%). The overwhelming majority of the respondents, 232 (83%) indicated that that God is the cause of illness, while 39 (14%) indicated pathogens as the cause of illness. Those who showed that they do not know what causes illness were 8 (3%).

Information on the respondents view on pregnancy was provided by a total of 270 respondents. Slight majority of these respondents, 143 (53%), indicated that they regarded pregnancy as a normal experience, a lower proportion, 84 (31%), regarded pregnancy as a fearful experience. Lower proportions of the respondents, 32 (12%), shared that they regarded pregnancy as an experience that needed close clinical monitoring. A total of 11 (4%) reported that they didn't have any particular feeling or view on pregnancy.

A logistic regression analysis was made on whether the following factors had an influence on use of skilled birth attendance: ability to speak other language besides Somali, the persons involved in decision making on health actions, dominant belief held on the causes of illness, and the respondents view on pregnancy.

All the factors were not found to be statistically significant in use of skilled birth attendance except for ability to speak other languages besides Somali where those who speak other languages besides Somali language were 4.8 times likely to use skilled birth attendance than those who Spoke only Somali (OR, 4.83, CI 2.9-10.62, p value= <0.001)

Table 4Cultural factors and use of skilled birth attendance, women of Somali origin, Kamukunji Sub County, July 2018

Variables	Overall (n)	Utilized skilled birth attendance n (%)	Did not utilize skilled birth attendance	Crude OR (95% CI)	p-value
Whether able to speak other language besides Somali n=276					
Yes	189	178(94.18)	11(5.82)	4.83(2.19-10.62)	<0.0001*
No	87	67(77.01)	20(22.99)	1	
Other persons involved in decision making on health actions n=278					
None	41	37(90.24)	4(9.62)	1	
Husband	104	94(.90.38)	10(9.62)	1.01(3.00-3.44)	0.979
Mother	60	49(81.67)	11(18.33)	0.48(1.42-1.63)	0.241
Mother in law	11	10(90.91)	1(9.09)	1.08(0.11-10.78)	0.947
Extended family	62	57(91.94)	5(8.06)	1.23(0.31-4.89)	0.766
Dominant belief held on causes illness n=279					
God	232	211(90.95)	21(9.05)	3.34(0.64-17.65)	0.154
Pathogens	39	31(79.49)	8(20.51)	1.29(0.22-7.68)	0.778
don't know	8	6(75.00)	2(25.00)	1	
The respondents view on pregnancy n=270					
Normal	143	126(88.11)	17(11.89)	1.37(0.47-4.04)	0.566
Fearful	84	75(89.29)	9(10.71)	1.54(0.47-5.01)	0.471
close observation needed	32	27(84.38)	5(15.62)	NA	
Don't know/1st pregnancy	11	11(100)	0(0.00)	1	

4.6 Perceptions of Health Workers on Use of Skilled Birth Attendance

Results in Table 5below shows that out of the eight health workers who were all nurses and had who participated in the survey, all of them,8 (100%) indicated that they were familiar with the process of handling complaints as per the National Patient's Rights Charter (NPRC). Similarly, all of them reported that health workers with direct contact with patients are trained to manage maternal and neonatal complications boosting the confidence of care seekers.

Majority of nurses 6/8(75%) think that their hospital doesn't have in place an affirmative action approach to hiring culturally appropriate female practitioners. Similarly, majority of them, 6 (75%) suggested improving the level of privacy as a priority so that more culturally sensitive women could come and deliver at health facilities.

Half of the nurses 4 (50%) think that a previous experience of lack of privacy may have affected the subsequent decision of a Somali woman not to deliver in a public facility, while majority of the nurses, 5 (62.5%) estimated that about 25% of the Somali women in Kamukunji come to utilize skilled birth attendance at public health facilities. Majority of the health workers interviewed 5(62.5) estimated that only 25% of Somali women in Kamukunji seek delivery services in public health facility.

Table 5: Perception of Health Workers, Kamukunji sub-County, July 2018

Variables	Frequency (n)	Percentage (%)
Knowledge on how to handle complaints as per NPRC		
Yes	*8*	100.00
No	0	0.00
Hospital practice of affirmative action approach to hiringfemale practitioners		
No	6	75.00
Yes	1	12.5
Don't know	1	12.5
Health workers trained to properly manage maternal and neonatal complications		
Yes	8	100.00
No	0	0.00
Which areas need improvement for more women to come and deliver in health facilities?		
The help and support that's available to women during delivery	1	12.5
Cleanliness of the health facility	1	12.5
Privacy	6	75.00
Estimated Prevalence of Somali women in Kamukunji seek delivery services in public health facility		
25%	5	62.5
50%	1	12.5
75%	0	0.00
100%	0	0.00
Don't know	2	25.00
Previous experience that may have affected subsequent decision Not to deliver in public facility		
Poor services	3	37.5
Language barrier	1	12.5
lack of privacy	4	50.00

CHAPTER FIVE

DISCUSSION

5.1Introduction

This section presents discussion of the main findings of this study. The first section of this chapter discusses findings on prevalence of use of skilled birth attendance. The next sub-section discusses socio demographic, economic and cultural factors that affect utilization of skilled birth attendance services, followed by perception of health workers such as nurses. The last part of this chapter highlights the limitations of this study.

5.2Prevalence of Skilled Birth Attendance

The findings of this study revealed that about 250 (89.96%) of the participants had their last child delivery conducted with the support of skilled birth attendance, with 31(11.04%) reporting that they had used unskilled birth attendance. This finding is consistent with reported health facility births which were shown to be 90% of births in Kirinyaga and Kiambu Counties, and 88.7% in Nairobi County (Kenya Demographic Health Survey, 2014).

This proportion, however, was higher than the documented overall Kenya prevalence of use of skilled birth attendance which was 61% of all deliveries nationally in 2014 (Kenya Demographic Health Survey, 2014). This observed lower prevalence in Kenya could be probably due to the fact that, the national prevalence is an aggregation of different subpopulations and counties some of which could be limiting the prevalence.

The study findings also indicate that about 49% of the respondents reported that they had used the services of unskilled birth attendance for child delivery in their lifetime at least once, with 51% indicating that they had never used the services of unskilled birth attendance. The reported use of skilled birth attendance in this subpopulation is still lower than the global coverage of

skilled attendance during childbirth which was shown to be 78% in 2016 (WHO, 2017). It, however, does agree with the prevalence of use of skilled birth attendance in sub-Saharan Africa where approximately a half of all live births were delivered with the assistance of skilled birth attendants in 2016 (WHO, 2017).

From the public health perspective this finding is significant and should draw the attention of those engaged in maternal health programmes in designing and implementing intervention strategies amongst this population. The finding that about one half of the women interviewed indicated that they had used unskilled birth attendance should point to the need for strong and focused efforts to educate the population on sustainable ways of using skilled birth attendance.

The significance of skilled birth attendance has been the focus of two global efforts. For example, the Millennium Development Goals (MDGs) targets were aimed at reducing maternal mortality by three- quarters by 2015 using 1990 as a baseline. The MDG target had set provision of skilled birth attendance at birth for all women as one of its two indicators under Goal 5 on Health(UN, 2005).

Similarly, Goal 3 of the Sustainable Development Goals (SDGs) is aimed at ensuring healthy lives and promoting the well-being for all at all ages (UN, 2016). Recognizing the importance of skilled birth attendance in reducing maternal morbidity and mortality, skilled birth attendance was included as indicator 3.1.2 under goal 3 and target 3.1 of the Sustainable Development Goals with the target of reducing global maternal mortality ratio to less than 70 per 100,000 live births by 2030 (UN, 2016).

5.3 Socio-Demographic and Economic Factors Affecting Utilization of Skilled Birth Attendance

The findings from this study on factors that affect utilization of skilled birth attendance amongst this subpopulation indicate age bracket, level of education attained, marital status and employment status of self or spouse were found to significantly influence the use of skilled birth attendance. Those in age bracket 43-49 were shown to be less likely to use skilled birth attendance. This finding is in line with the report of the Kenya demographic Health Survey which shows that delivery in a health facility is least common among births to mothers aged 35-49 years (Kenya Demographic Health Survey, 2014).

It has been suggested in some studies that the less likelihood of older women utilizing skilled birth attendance could be attributed to lack of knowledge in older women (F. Mwangome *et al.*, 2012). Health programmes that are specially tailored to meet the needs of this age bracket would be important in addressing this subpopulation in an effort to address the maternal health problems amongst this group.

The Kenya Government has an elaborate policy on Reproductive Health that is tailored to the needs of the youth (Population Council, 2015). In the light of the revelation of this study that the age bracket of 43-49 were less likely to access skilled birth attendance, it would be appropriate to point to the need for a policy that is tailored to this age group as well.

The study also indicated that education level attained is one of the factors that affect use of skilled birth attendance with those who attained secondary level education level shown to be more likely to use skilled birth attendance than those in the category of no education. Previous, but a recent study which sought to determine the effective coverage of maternal and child health services in Kenya found that a mother's level of education had an influence on the use of skilled

birth attendance(Peter K Nguhiu *et al.*, 2017). This is reinforced by a finding of a study that addressed implications of economic status which pointed out that women's educational attainment was associated with skilled birth attendance (Ahmed *et al.*, 2010). Education increases utilization of maternal health services by increasing the level of health awareness and knowledge of available maternal services, improved ability to afford the cost of medical health-care and enhanced level of autonomy (Emelumadu *et al.*, 2014).

The findings in this study revealed that those who reported that they were divorced at the time of the interview were 5.19 times more likely to use skilled care than those in the comparative group who were in single category. This finding, however, is rather intriguing because lower rates of morbidity and mortality among married individuals than those who are single, divorced or widowed have been consistently demonstrated (Friis & Sellers, 1996).

It has also been documented that, divorced persons, especially divorced men, experience the highest death rates among the unmarried groups (Hu & Goldman, 1990). A plausible explanation for this observation could be based on an assertion that women who are not married are assumed to have higher autonomy and do not depend on decisions of others, unlike their married counterparts who depend on decisions of their husbands and mothers-in-law (Ochako *et al.*, 2011).

A study on factors influencing deliveries at health facilities in a rural Maasai Community found that the fact that Maasai women were not the final decision makers was a barrier to health facility delivery (Karanja *et al.*, 2018).

The study demonstrated that those who reported that both the respondent and the spouse were employed, and where husbands only were employed were significantly associated with use of

skilled birth attendance delivery when compared to where both the respondents and the spouse were not employed. Although in this study, our findings indicate that income bracket was not significantly associated with use of skilled birth attendance, the revelation that spouses who were both employed were more likely to use skilled birth attendance would suggest that increased income that usually arise from the two incomes could influence positively the use of skilled delivery.

This could be partly explained by the findings in other studies which have shown that women in higher wealth quintiles are likely to utilize skilled delivery services (Ahmed *et al.*, 2010; Guliani *et al.*, 2012).

5.4 Cultural Factors Affecting Utilization of Skilled Birth Attendance

It was found that women who were able to speak other languages besides Somali were 4.8 times likely to use skilled birth attendance than those who spoke only Somali. Inability of women to express themselves in a language of the skilled birth attendance has been shown to be a barrier to utilization of skilled delivery (Ndonga, 2014).

For example, in a qualitative study on barriers to uptake of skilled birth attendance conducted in Malindi County in Kenya, it was revealed that it was easier to report their issues to traditional birth attendance in their local dialect than they could in a health facility (Carter, 2010).

Our findings on cultural factors that were considered in this study persons involved in decision making in health actions, dominant belief held by the respondents on the causes of illnesses and the respondents' view on pregnancy were found not to significantly influence the use of skilled birth attendance amongst Somali women in Kamukunji sub County.

5.5 Perception of Health Workers on Utilization of Skilled Birth Attendance

The findings of this study where all the health workers have indicated that they know how to effectively handle complaints as per the National Patient's Rights Charter (NPRC), and that they were trained to manage maternal and neonatal complications boosting the confidence of care seekers is not consistent with the findings of Kenya's First Confidential Enquiry into Maternal Deaths Survey.

The survey identified one or more health worker-related factors in three-quarters of the maternal deaths (MoH, 2016).The most frequent issues identified included: Delaying starting treatment (a third), inadequate clinical skills (28 per cent), insufficient monitoring (27 per cent), prolonged abnormal observation without action (24 per cent) and incomplete initial assessment (23 per cent).

Others included wrong diagnosis, wrong treatment and no treatment (MoH, 2016)This is consistent with the findings of another assessment on the training needs of health workers in Kenya, where building and training was identified as key gap in health facilities to promote effective health care provision (MoH, 2017). Effective implementation of the Kenya Health Workforce Project (Rogers, 2008), which is intended to support better health in Kenya through

The findings in this study revealed that three quarters of the health workers think their hospital does not have in place an affirmative action approach to hiring culturally appropriate female practitioners, with fifty per cent of them indicating that this may have affected the subsequent decision of a Somali woman not to deliver in a public facility. This finding agrees with a study on conceptions of prenatal care among Somali women in San Diego, USA, which have shown that culturally sensitive prenatal care improves access to and utilization of that care and subsequent delivery in health facilities (Beine *et al*., 2005).

This also agrees with another study in South Africa where it was established that Somali women prefer female health workers to assist them during deliver. The study revealed that Somali women objected to male midwives and preferred female midwives(Meyer, 2012)

The study findings where majority of the health workers estimated only 25% of Somali women in Kamukunji seek delivery services in public health facilities agrees with another study in Nairobi which has shown that only 21.7% of urban women refugees of Somali origin use skilled birth attendance in public health facilities in Nairobi (Wanjiku, 2014).

However, the findings of this study, however, should be interpreted with caution. The findings of this study were based on responses that were provided by the respondents and are reported as presented without any means of further verification. There could be some kinds of social desirability biases (Friis & Sellers, 1996), the extent of which remains unknown in this study.

Secondly, the responses were designed to address prevalence and factors affecting skilled delivery by women of Somali origin residing in Kamukunji sub County. Although useful findings have been generated through this study that would be important for similar populations in similar localities, the findings subpopulation.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This section presents the summary, conclusions and the recommendations of the study findings.

6.2 Summary of the Findings

Altogether, a total of 281 participants were interviewed. The majority of the respondents, 158(56.7%) first contacted health care providers when the pregnancy was 6 weeks or less. Of the 274 who responded to the inquiry on use of unskilled birth attendance, slightly less than one half, 134 (48.9%), reported that they had used unskilled birth attendance for delivery services at least once; while 140 (51.1%) indicated that they had never sought the services of unskilled birth attendance.

The factors that were found to influence the use of skilled care delivery were secondary level education level, divorce, both the respondent and the spouse employed and ability to speak other languages besides Somali. Age bracket 43-49 was negatively associated with use of skilled birth attendance.

6.3 Conclusions

- Slightly less than half of women of Somali origin reported that they had ever used unskilled birth attendance, while the overwhelming majority of the respondents indicated that they used skilled birth attendance for their last delivery.
- Secondary level education level, divorce, both the respondent and the spouse employed were the factors that were found to influence the use of skilled birth attendance. Age bracket 43-49 was negatively associated with use of skilled birth attendance.

- Ability to speak other languages besides Somalilanguage was found to be a factor that was positively associated with use of skilled birth attendance amongst women of Somali origin.
- Lack of privacy was the main reason identified by the majority of the nurses as a factor that discouraged women of Somali origin from seeking skilled birth attendance in some health facilities.

6.4 Recommendations

- In the light of our finding that even though the overwhelming majority (89%) reported that they used skilled birth attendance for their last delivery, the revelation that about one half of the respondents reported that they had ever used unskilled birth attendance in their lifetime, suggests the need for the Ministry of Health, Division Reproductive Health, to design intervention strategies that are specifically focused on addressing the reduction of use of unskilled birth attendance amongst this subpopulation.
- The Ministry of Health, Division of Health Promotion should design public health strategies, health promotion messages and intervention services that take into consideration those who are limited by language barriers based on the finding that those who speak other languages besides Somali language were more likely to use skilled birth attendance.
- The Ministries of Health, Public Service, Youth and Gender Affairs, Education, Non-Governmental Organizations and other relevant stakeholders should work together to empower women economically and improve education of women in this community since employed and educated women have been shown to utilize skilled birth attendance more than non-educated and unemployed women.

6.5 Recommendations for Further Research

- Further research is needed to delineate the reasons for the findings that those who reported that they were divorced at the time of the survey were more likely to use skilled birth attendance than other groups since this finding is inconsistent with quite a number of studies, which have consistently demonstrated that divorced persons experience poor health outcomes.
- There is need further studies to bring out the reasons why older respondents in the age bracket of 43-49 were less likely to utilize facilities providing skilled care for delivery and what public health intervention strategies would be ideal for this age category with regards to utilization of skilled birth facilities.
- Further research that employs qualitative strategies should be carried out amongst health workers on their perceptions regarding factors affecting utilization of skilled birth attendance in this subpopulation.

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APPENDICES

APPENDIX I: SCHOOL OF GRADUATE STUDIES APPROVAL

MASENO UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Office of the Dean

Our Ref: EL/ESM/00454/13

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

Date: 15th May, 2018

TO WHOM IT MAY CONCERN

RE: PROPOSAL APPROVAL FOR ABDULLAHI RASHID IBRAHIM — EL/ESM/00454/13

The above named is registered in the Master of Public Health programme in the School of Public Health and Community Development, Maseno University. This is to confirm that her research proposal titled "Factors Affecting Utilization of Delivery Services in Public Health Facilities by Women of Somali Origin in Kamukunji Sub County,Nairobi County,Kenya" has been approved for conduct of research subject to obtaining all other permissions/clearances that may be required beforehand.

Prof. J.O. Agure
DEAN, SCHOOL OF GRADUATE STUDIES

APPENDIX II: ETHICS REVIEW COMMITTEE APPROVAL

MASENO UNIVERSITY ETHICS REVIEW COMMITTEE

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

Private Bag – 40105, Maseno, Kenya
Email: muerc-secretariate@maseno.ac.ke

FROM: Secretary - MUERC

DATE: 11th July, 2018

TO: Abdulahi Rashid Ibrahim
EL/ESM/00454/2013
Department of Public Health
School of Public Health and Community Development
Maseno University
P.O. Box Private Bag, Maseno

REF: MSU/DRPI/MUERC/00558/18

RE: Factors Affecting Utilization of Skilled Delivery Services In Public Health Facilities by Women of Somali Origin in Kamkunji Sub-County, Nairobi County Kenya. Proposal Reference Number MSU/DRPI/MUERC/00569/18.

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 11th day of July, 2018 for a period of one (1) year.

Please note that authorization to conduct this study will automatically expire on 10th July, 2019. If you plan to continue with the study beyond this date, please submit an application for continuation approval to the MUERC Secretariat by 15th June, 2019.

Approval for continuation of the study will be subject to successful submission of an annual progress report that is to reach the MUERC Secretariat by 15th June, 2019.

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 advice MUERC when the study is completed or discontinued.

Thank you.

MASENO UNIVERSITY SECRETARY 11 JUL 2018 ETHICS REVIEW COMMITTEE

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

Cc: Chairman,
Maseno University Ethics Review Committee

MASENO UNIVERSITY IS ISO 9001:2008 CERTIFIED

APPENDIX III: NACOSTI PERMIT

NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471
2241349,3310571 ,2219420

NACOSTI, Upper Kabete
Off Waiyaki way
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Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NAIROBI-KENYA

Ref: No. NACOST1/P/18/30324/24326

Date: 23rd July, 2018

Abdullahi Rashid Ibrahim
Maseno University
Private Bag
MASENO.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "Factors affecting utilization of skilled delivery services in public health facilities by women of Somali Origin in Kamukunji Sub-County, Nairobi County, Kenya" I am pleased to inform you that you have been authorized to undertake research in Nairobi County for the period ending 13th September, 2019.

You are advised to report to the County Commissioner and the County Director of Education, Nairobi County before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a copy of the final research report to the Commission within one year of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

APPENDIX IV: CONSENT FORM

Dear Participant

My name is Abdullahi Rashid Ibrahim. I am a student of Maseno University undertaking a Master of Public Health Degree in the Department of Public Health. Currently I am conducting a research work for my thesis entitled *"Prevalence of skilled birth attendance, utilization and its correlates among women of Somali origin in Kamukunji sub-County, Nairobi County, Kenya".*The main objective of this study is to assess the prevalence and factors affecting utilization of skilled birth services for delivery by women of Somali origin in the age bracket of 18-49 years in Kamukunji Sub County, Nairobi County. The findings of this study would be significant in appreciating the true burden of unskilled facility delivery services in this community and in developing strategies that would be critical in improving health of the population by increasing skilled birth attendance. The information required will be obtained from participants who agree to participate in the study by asking those questions. Although the information will be collected from individual participants, there will be no personal identifiers and the information will be kept in confidence. The study procedures will have no harm to you as participants. We encourage your full participation; however, you have a right to withdraw from participating in this study at any time you wish, and you are not obliged to respond to all the questions asked,

Participant statement

I, ----------has read the information concerning this study and fully understand what is required of me,

I agree to participate

Name of respondent: _____ Signature: _____ Date: _____

Interviewer, Name: _____ Signature: _____ Date: _____

APPENDIX V: RESEARCH QUESTIONNAIRE FOR SOMALI WOMEN IN KAMUKUNJI SUB-COUNTY, NAIROBI COUNTY, KENYA.

Q1. What is your ethnicity?

Q2. Please indicate your Age bracket

a) 18-23 ☐
b) 24-29 ☐
c) 30-35 ☐
d) 36-42 ☐
e) 43-49 ☐

Q2. What religion do you practice?

a) Islam ☐
b) Christian ☐
c) Traditional ☐
d) None ☐

Q3. Which ward of Kamukunji Sub-County do you live in?

a) Eastleigh North ☐
b) Eastleigh South ☐
c) Moi Airbase ☐
d) California ☐
e) Pumwani ☐

Q4. How many weeks pregnant were you when you first thought you might be pregnant? Please tick one box.

6 weeks or less..... ☐
7-12 weeks..... ☐
13-28 weeks..... ☐
More than 28 weeks..... ☐
Do not know/cannot remember ..... ☐

Q5. Which one of the following health care providers did you first contact when you first thought you might be pregnant? Please tick one box.

Public Hospital ..... ⌊⌋
Private Hospital ..... ⌊⌋
Family Doctor (GP) or Doctor's nurse..... ⌊⌋
Traditional Birth Attendant ..... ⌊⌋
None ..... ⌊⌋

Q6. How many weeks pregnant were you when you first saw this health care provider? Please tick one box.

6 weeks or less..... ⌊⌋
7-12 weeks..... ⌊⌋
13-28 weeks..... ⌊⌋
More than 28 weeks..... ⌊⌋
Do not know/cannot remember ..... ⌊⌋

Q7.Where did you get 'antenatal care' from for most of your pregnancy? Please tick one box.

Public Hospital ..... ⌊⌋
Private Hospital ..... ⌊⌋
Midwife..... ⌊⌋
I did not have any antenatal care..... ⌊⌋
Do not know..... ⌊⌋

Q8. In Your last delivery, did you use skilled birth attendance?

Yes..... ⌊⌋
No ..... ⌊⌋

Q9. Have you ever used unskilled birth attendance for any of your children's delivery?

Yes ☐
No ☐

Q10. Have you ever used Kamukunji sub-County public hospitals and health facilities for delivery? a) If yes, how many? ☐

b) If no, what were the reasons? Please tick applicable boxes.

Expensive ..... ⌊_⌋
Poor quality ..... ⌊_⌋
Language and cultural barrier with facility staff ..... ⌊_⌋
I am fine with home delivery and TBA..... ⌊_⌋
I do not know about their existence ..... ⌊_⌋

Section 2: Socio-demographic and economic factors that affect the use of skilled delivery services in health facilities by women of Somali origin in Kamukunji sub-County, Nairobi County.

Q1.What country were you born in?

a) Kenya ☐
b) Somalia ☐
c) Another ☐

Q2.Please tick one of the following that best describes your social class or income?

Low Income Middle Income Upper Middle Income High Income

Q3. What is the highest level of education you have completed?

a) 8 years of primary ☐
b) 12 years of secondary ☐
c) Post-secondary ☐
d) No education ☐

Q4. What is your marital status?

a) Single ☐
b) Married ☐
c) Divorced ☐
d) Widowed ☐

Q5. Are you or your spouse employed?

a) I'm employed ☐

b) Husband employed ☐

c) Both of us ☐

d) None is employed ☐

Section 3: Cultural factors that affect the use of skilled delivery services in health facilities by women of Somali origin in Kamukunji sub-County, Nairobi County

Q1.Do you speak any language apart from Somali? If yes, which one?

☐

Q2.Will anyone other than yourself be participating in health decisions affecting you? If yes, who?

a) Husband ☐

b) My mother ☐

c) Mother-in-Law ☐

d) Extended family ☐

e) None ☐

Q3.Are there any barriers related to you choosing the hospital of your choice to deliver or for treatment? Please tick one.

a) Economic factors ☐

b) Cultural considerations ☐

c) Language flexibility ☐

d) Distance ☐

e) Family wishes ☐

Q4. What is the dominant belief on the cause of illness according to you?

a) God ☐ b) Lifestyle ☐

b) Pathogens ☐ d) Don't know ☐

Q5. What view do you hold on pregnancy and the care you need?

a) Normal ☐

b) Fearful ☐

c) Close observation needed ☐

d) Don't know/ my 1st pregnancy ☐

APPENDIX VI: QUESTIONNAIRE FOR HEALTH WORKERS

Q1. Are there any particular reasons Somali women may not come for antenatal care?

Many can't speak apart from Somali, therefore language barrier ..... ⌊_⌋
They don't consider ANC important prior to delivery ..... ⌊_⌋
Many are not aware that the services including ANC are free ..... ⌊_⌋
Some believe their background; culture & beliefs may not be respected .... ⌊_⌋
I don't know. ..... ⌊_⌋

Q2. Do you know how to handle complaints as per the National Patients' Rights Charter?

a) Yes ☐
b) No ☐
c) Don't know ☐

Q3. Does this hospital practice affirmative action approach to hiring culturally appropriate, female practitioners?

a) Yes ☐
b) No ☐
c) Don't know ☐

Q4. Do you think all health workers are trained to manage maternal and neonatal complications boosting the confidence of care seekers?

a) Yes ☐
b) No ☐
c) Don't know ☐

Q5. In your estimation, which areas should be improved on so that more women come and deliver at public health facilities?

a) The help and support that's available to women during delivery ☐

b) How clean the facilities are ☐

c) The amount of privacy they get ☐

d) The amount of rest that they are able to get ☐

e) Allowing visitors or support people to be with them whenever as desired ☐

Q6. In your estimation, what is the prevalence of Somali women in Kamukunji sub-County who seek delivery services in your hospital or health centre?

a) 100% ☐

b) 75% ☐

c) 50% ☐

d) 25% ☐

e) I don't know ☐

Q7. Has a previous experience affected the subsequent decision of a Somali woman not to deliver at this public facility? If yes, what type of experience?

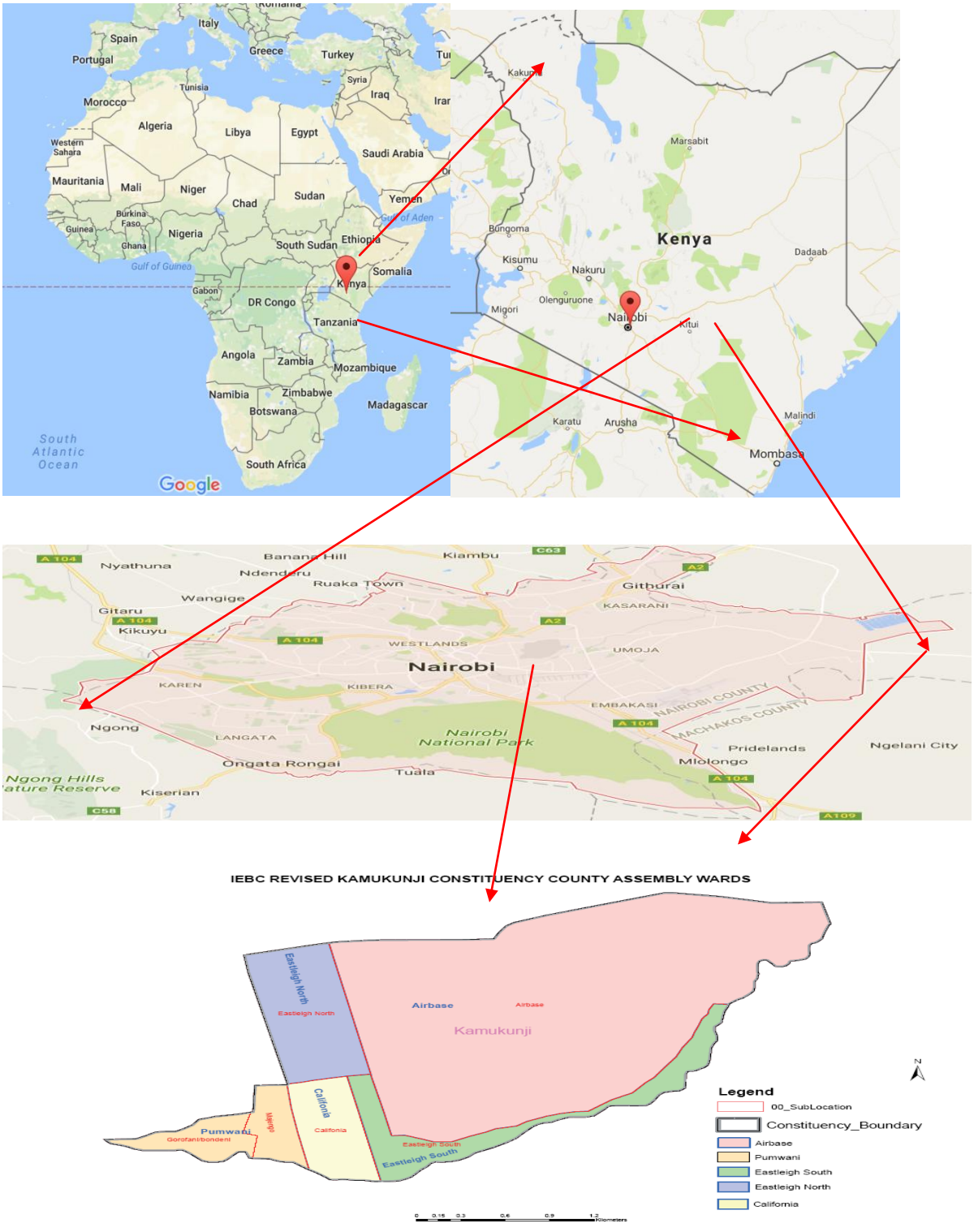
a) Poor services ☐

b) Language barrier ☐

c) Lack of privacy ☐

d) I don't know ☐

APPENDIX VII: STUDY SITE MAP



Study site indicating the Kamukunji Sub-County Wards