

**UTILIZATION OF FREE SKILLED BIRTH ATTENDANCE SERVICES
AMONG WOMEN OF REPRODUCTIVE AGE IN PUBLIC HEALTH
FACILITIES IN KITUI COUNTY, KENYA**

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DECLARATION

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


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DEDICATION

I dedicate this work to my lovely wife Penninah Mbinda for her support and encouragement throughout my training. Sincere appreciation to my children Agnes, Fiona, Ian and Esther for their encouragement.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndromes
ANC	Ante Natal Care
ANOVA	Analysis Of Variance
BEMONC	Basic Emergency Obstetric and Neonatal Care
CHVs	Community Health Volunteers
CHW	Community Health Worker
CIA	Central Intelligence Agency
CS	Caesarean Section
CSA	Central Statistical Agency
DHIS	District Health Information System
DSCPHN	Deputy Sub County Public Health Nurse
FGD	Focused Group Discussion
FP	Family Planning
GOK	Government of Kenya
HIV	Human Immunodeficiency Virus
IBP	Individual Birth Plan
ICPD	International Conference in Population and Development
KDHS	Kenya Demographic Health Survey
KHSSIP	Kenya Health Strategic and Investment plan
KMOH	Kenya Ministry of Health
KNBS	Kenya National Bureau of Statistics
MCH	Maternal and Child Health

MDGs	Millennium Development Goals
MMR	Maternal Mortality Ratio
MOH	Ministry of Health
MOMS	Ministry of Medical Services
MOPHs	Ministry of Public Health and Sanitation
NACOSTI	National Commission for Science, Technology and Innovation
NCAPD	National Coordinating Agency for Population and development
NHIF	National Hospital Insurance Fund
OBA	Output Based Approach
OPD	Out Patient Department
PMTCT	Prevention of Mother to Child Transmission
SBA	Skilled Birth Attendants
SBCC	Social Behaviour Change and Communication
SCHMT	Sub County Health Management Team
SDG	Sustainable Development Goals
SMI	Safe Motherhood Initiatives
SPSS	Statistical Package for Social Sciences
SVD	Spontaneous vaginal delivery
TBA	Traditions Birth Attendants
UN	United Nations
UNICEF	United Nations Children's fund
WHO	World Health Organization

DEFINITIONS OF 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 pregnancy from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.
Maternal Health	Is the health of the woman during pregnancy, childbirth and postpartum period. It encompasses family planning, preconception, pre natal and post natal care in order to reduce morbidity and mortality.
Maternal morbidity	Is medical complications which includes physical and psychological conditions that result from or are aggravated by pregnancy, labour and delivery and have an adverse effect on woman's health.
Maternal Mortality Ratio	Is the annual number of deaths of women from pregnancy related causes per 100,000 live births.
Neonatal Death.	The death of an infant within the first 28 days after birth.
Public Health Facilities	This are accredited government owned health facilities licensed to offer public health services such as medical, surgical, nursing, promotive, preventive, diagnostic and maternity services, they include Dispensaries, Health

centers, Sub County Hospitals, County Referral Hospitals, Level Five Hospitals and National referral hospitals.

Safe motherhood initiative

This is a worldwide effort that aims to reduce the number of deaths and illnesses associated with pregnancy and childbirth, These includes;-skilled attendance at births, access to quality emergency obstetrical care and access to quality reproductive health care including family planning and safe post abortion care.

Skilled attendant at delivery

Percentage of births attended by skilled health personnel (Doctor, Nurse, Midwife or Clinical officer).

Skilled Birth Attendant

An accredited health professional such as a midwife, doctor, nurse or a clinical officer who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancy, childbirth and immediate post natal period, and in the Identification, management and referral of complications in women and newborns.

Traditional birth attendant

Is a community based provider of care during pregnancy and child birth.

Utilization

The action of making practical and effective use of something.

‘Linda mama’initiative

Is a government of Kenya initiative which provides a package of basic health services to all pregnant mothers which includes free maternal services antenatal, intrapartum and postpartum for the mother and their neonates.

ABSTRACT

According to World Health Organization 358,000 maternal deaths occur annually worldwide with 99% of this deaths occurring in developing countries. Over the years Kenya has recorded poor maternal indicators among them high maternal mortality rate which stands at 362 per 100,000 live births with neonatal mortality rate at 22 per 1,000 births and declining trends in utilization of maternal services as evidenced by low utilization of skilled birth attendants. Reduction of maternal mortality is a global priority particularly in developing countries through increasing utilization of skilled birth attendants. Therefore the purpose of this study was to determine utilization of free skilled delivery services among women of reproductive age in public health facilities in Kitui South Sub County, Kenya. Maternal and neonatal deaths are still reported in the region despite the National and County government efforts in putting strategies to avoid preventable deaths and morbidity. The objective of the study was to explore utilization of free skilled delivery services among women of reproductive age in the public health facilities in Kitui South Sub County. The research employed three delay model of health care utilization as the conceptual framework. Cross sectional population based descriptive study was used. Data was collected using pretested and structured questionnaires targeting women who had previously delivered in the preceding last one year, focused group discussions were done and in-depth interview with key informants. Pre-testing of research instruments was done to ensure validity and reliability. Systematic, simple random and purposive sampling was used to select the desired sample. Quantitative data collected was coded and analyzed using statistical package for social sciences (SPSS) Version 24, and presented using tables, pie-charts and bar graphs. Qualitative data was transcribed and thematically organized and analyzed accordingly. In conclusion the study found out that ANC attendance was at 98.1%, SBA at 65.9%, mode of delivery SVD at 74.1% and Caesarean section at 25.9% in the study area. From the findings it was confirmed that social, cultural and economic factors significantly influenced utilization of SBA in the area of the study as follows: Religion ($\chi^2=8.11, d.f=3, p=0.004$), Employment status ($\chi^2=69.85, d.f=1, p<0.001$), Level of education ($\chi^2=21.55, d.f=3, p<0.001$). Health system factors had a strong positive relationship in influencing utilization of SBA in the area of the study as shown; Cost of transport ($\chi^2=18.99, d.f=4, p<0.001$), Facility operates 24 hours ($\chi^2=44.19, df=2, p<0.001$). Recommendation from the study to the national and county governments is to improve health facilities infrastructure, employ more staffs, increase capacity building of the staffs, create awareness to community members on utilization of maternal health services, increase supplies in hospitals, strengthening referral systems, male involvement, empowerment of women and work on staff motivation and retention. This will translate in improvement of the utilization of skilled birth attendance thus reducing the burden of maternal and neonatal mortality and morbidity in the County and whole Country.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Sustainable Development Goal (SDG) number 3 aims at ensuring healthy lives and to promote wellbeing for all at all ages with target 3.1 aiming at reducing the global maternal mortality ratio to less than 70 per 100,000 live births by 2030 (UN, 2015). A key indicator to measure this goal is the proportion of births attended by skilled birth attendants. Programmes aimed at reducing high maternal and neonatal mortalities and morbidities in Kenya have not yielded the desired results due to numerous challenges facing the health sector. Key interventions taken by Kenyan government includes safe motherhood initiatives, The international conference on population and development (ICPD) of 1994, United Nations meeting of 2000 on Millennium development goals and 2015 United Nations meeting on Sustainable Development Goals of which the main agenda was to reduce maternal and neonatal mortality and morbidity of which Kenya is a member state (UN, 2015).

.According to the World Health Organization (WHO, 2019) 810 women die every day due to preventable causes that are related to child birth and pregnancy in general. Developing countries are leading with approximately 99% of all maternal deaths occurring in these countries while only less than one percent occurs in developed countries (WHO, 2019).

Level of income and set up of a given region; that is, rural or urban, plays a role when it comes to these death rates. Most maternal and neonatal deaths can be avoided if women had access to appropriate skilled maternal services during pregnancy, labour and postnatal period (Sidze, 2017).

In sub-Saharan Africa, many countries have ensured that their maternal mortality rate levels have halved since 1990. Northern Africa has done even much better compared to other parts of Africa. Between 1990 and 2013, the maternal mortality rate could be rated to have declined by 2.6 % per annum in sub Saharan Africa. This is much less compared to the annual decline of 5.5% that was required to achieve MDG 5 (Ministry of Health, 2016).

In Kenya, strategies have been put in place to address the challenges of maternal health notably adoption of the constitution of Kenya 2010 whereby reproductive health is recognized as a basic right as enshrined in the Constitution in article 43(1a), Out Put Based Approach (OBA) programmes targeting low income earners and the poor, adoption of free maternity health services policy in June 2013 in all public health facilities as declared by the President of the Republic of Kenya His Excellent Uhuru Kenyatta and the recently launched ‘Linda Mama’ initiative in all public, private and faith based health facilities in the country. Universal health care (UHC) which is being rolled out in all the counties as one of the big four Agendas will ensure mothers and children health is given more priority (Matiang, 2018).

According to District Health Information System (DHIS) in 2012 Kitui south sub county had a total coverage of 31.7% women delivering under skilled birth attendants as compared to Kitui county coverage of 36.4% with Kenya at 45.1% respectively. The low level of women of reproductive age utilizing maternal services under care of skilled birth attendants in Kitui County and specifically Kitui South Sub County prompted the study.

1.2 Problem Statement

According to WHO (2019), Kenya's progress towards improving maternal and neonatal health is poor over the past decade. Globally a woman dies every minute from complications related to childbirth and about a half a million women die each year due to maternal complications of which most of these deaths can be prevented by simple interventions if these mothers were able access quality maternal health services under care of skilled birth attendants (WHO, 2019). Every year an estimated one million children are left motherless due to maternal mortality globally with 1 in 13 children in Sub Saharan Africa dying before their 5th birthday compared to 1 in 189 in developed countries of which most of these complications are preventable (WHO, 2019). National health reproductive health policy focus on safe motherhood, maternal and neonatal health which emphasizes on delivery under skilled birth attendants as it has demonstrated that it can reduce maternal morbidity and mortality through early detection and management of potential complications.

According to Kenya Demographic Health Survey (KDHS, 2014) Kenya has maternal mortality rate of 362 per 100,000 live births which is far below the Sustainable Development Goals 3.1 target of less than 70 deaths per 100,000 live births. The Central Intelligence Agency places Kenya among countries with high infant mortality rates in the world. In Kenya 6,000 -8,000 women die every year due to pregnancy related causes (KDHS, 2014). Despite the introduction of free maternity health services in Kenya recent WHO trends (1990-2015) have placed Kenya among the top ten countries with highest maternal mortality rate (WHO, 2019).

In Kenya Proportion of mothers attending at least one Antenatal visit were 95.5% with skilled birth delivery at 62% (KDHS, 2014). According to Ministry of Health Kenya (MOH, 2016) Annual report, Kitui South Sub County accounted for 36%

women delivering under skilled birth attendants. Kitui county had 46% deliveries conducted under skilled birth attendants with 45.6% institutional deliveries compared to other counties like Nairobi which had 89.1% deliveries under skilled attendants (KDHS, 2014). This indicates low utilization of free maternity services in Kitui South Sub County. Therefore the study aimed at assessing factors contributing to utilization of free skilled birth attendants in public health facilities during delivery in Kitui south sub county and to formulate interventions from the findings to improve utilization of skilled birth attendants in the region.

1.3 Justification of the study

Despite various international, regional and national efforts and strategies maternal and neonatal mortality and morbidity ratio in Kenya and other parts of the region has continued to increase instead of declining as evidenced by the poor maternal and neonatal indicators (WHO, 2019). In Southern Asia and Sub Saharan Africa 50% of pregnant women don't have adequate care during childbirth (UN, 2015).

By understanding factors influencing utilization of skilled birth attendants during labour and delivery this will assist in designing and formulating appropriate strategies and policies which encourage women to utilize free maternity services in Kenya and Kitui County thus reduce the burden of maternal and neonatal mortality and morbidity in the community.

Skilled birth attendance at delivery is recognized as one of the most important factors in preventing avoidable maternal and neonatal deaths however in Kitui South Sub County like any other rural sub county in Kenya has recorded over 50% of births occurring in non-institutional settings under care of unskilled birth attendants compared to 82% deliveries in health facilities in urban centers in Kenya (KDHS,

2014). Delivery under unskilled birth attendants predisposes these mothers and their infants to risks associated with childbirth thus study on the factors contributing to utilization of free skilled birth attendants and choice of birth place necessitated this study to consider effective interventions in the area. This study will explore whether women of reproductive age (15-49 years) are utilizing skilled birth attendants and the reason behind underutilization of these services.

1.4 Research Questions

- i. What proportion of women of reproductive age is utilizing free skilled birth attendant's services in Kitui South Sub County?
- ii. Which social, cultural and economic factors influence the utilization of free skilled birth attendants among women of reproductive health in Kitui south sub- County?
- iii. What are the health system factors that influence utilization of free skilled birth attendants in Kitui South Sub County?
- iv. What are the strategies put in place to scale up utilization of free skilled birth attendants in Kitui South Sub County?

1.5 Null Hypotheses

Ho₁: Social, cultural and economic factors do not influence utilization of skilled birth attendants among women of reproductive health in Kitui South sub County.

Ho₂: Health systems factors do not influence utilization of skilled birth attendants among women of reproductive health in Kitui South sub County.

1.6 Objectives of the Study

1.6.1 Broad Objective of the study

To explore utilization of free skilled birth attendance among women of reproductive age in public health facilities in Kitui South sub- County.

1.6.2 Specific Objectives of the Study

- i. To establish the proportion of women of reproductive age utilizing free skilled birth attendants in the public health facilities in Kitui south sub county.
- ii. To determine social, cultural and economic factors that influence women of reproductive age in utilization of free skilled birth attendants in Kitui South sub county.
- iii. To determine the health system factors influencing utilization of free skilled birth attendants services in Kitui south sub county.
- iv. To establish strategies those are in place to enhance utilization of free skilled birth attendants among women of reproductive age in Kitui South Sub County.

1.7 Significance and Anticipated Output

This study aimed at reaching the population in Kitui South sub county which have not been reached before in a similar survey and this would give an in-depth insight on the determinants of low utilization of skilled birth attendants in the area. The study aimed to assist in identifying the bottlenecks of maternal health services and suggest strategies, which can be put in place for women of reproductive age to utilize the available health services during child birth thus reducing the burden of maternal and neonatal deaths in the region.

In terms of policy-making, this study was important in decision-making and prioritizing maternal health issues in resources allocation by the county government

of Kitui. This would avert unnecessary and avoidable deaths in the region and save money and time for other development agendas. The results and findings of this study could be used elsewhere in the county and country as a whole to put in place mechanisms of reducing maternal and neonatal mortality for a healthy and productive nation.

Developmental partners and other sectors can use the findings for funding of reproductive health programmes in the area and other parts of the country. Health workers can use information and findings from this study to improve on service delivery to women and young infants. The community would benefit from the study by adopting recommendations which would be generated thus reducing the burden of maternal and child mortality in the region.

1.8 Delimitation and Limitation of the study

1.8.1 Delimitation of the study

The study focused only on aspects related to factors influencing utilization of skilled birth attendance among women in reproductive age only who visit public health facilities. The free maternity services are offered throughout the country of Kenya including other public health facilities in Kitui county but the researcher opted for Kitui South Sub County Hospital. This was because it had a larger proportion of mothers of reproductive age lowly utilizing free maternity services. The study was conducted only on public health facilities as the researcher used public free maternity service policies which are not practicable in private and faith based facilities. In Private health facilities, maternity services are not offered for free; the free maternity service policy is practiced in public health facilities.

1.8.2 Limitation of the study

The study was carried out mainly in rural settings and partly urban settings of Kitui South, therefore the findings might not be feasible for urban setting thus more studies are recommended for urban settings. Recall bias was anticipated as some of the respondents might have been lacking essential records, as some information sought was for preceeding years.

1.9 Conceptual Framework

Due to many interlinking factors which prevent women of reproductive age from accessing quality maternal health services especially under care of skilled birth attendants during labour, delivery and postnatal, the researcher employed the Three Delay Model of maternal health care utilization (Thaddeus & Maine, 1994). Independent variables such as ethnicity, religion, age, maritalstatus, education level, socio-cultural beliefs, distance from health facilities, financial constraints, availability of health facilities, medical supplies and staffing levels are among factors which contribute adversely on choose of utilization of skilled birth attendants as the dependent variable.

Maternity services uses the three delay model which compromises factors which affect women as they seek maternity services as follows; delay in decision to seek care due to factors such as; poor economic status, ignorance and illiteracy and previous poor experience of health care. Delay in reaching health care due to distance from health facility, poor roads and infrastructure and cost of transport. Delay in receiving adequate health care due to poor health services and lack of medical supplies, inadequate health personnel, poorly motivated staffs and inadequate referral systems.

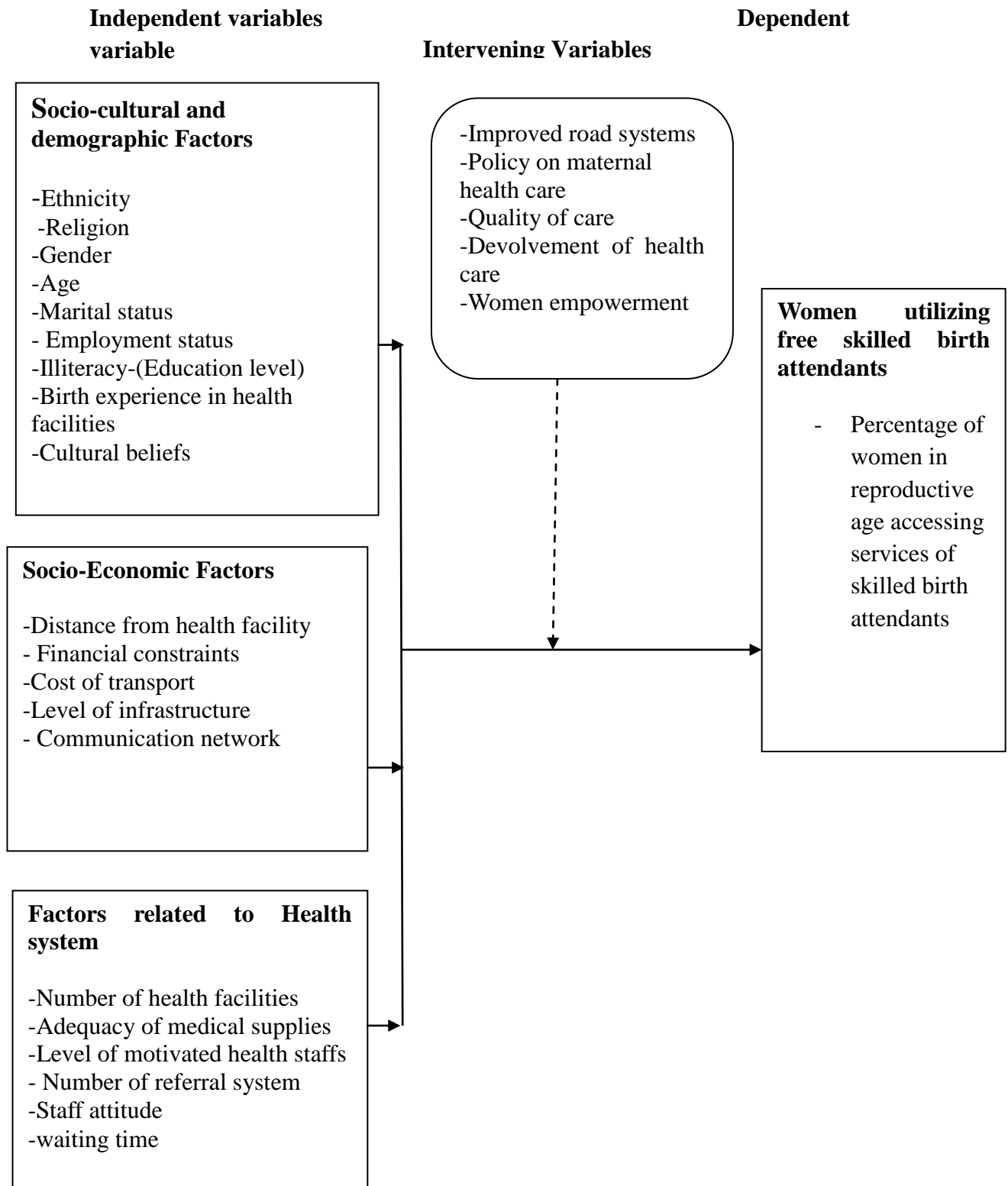


Figure 1.1: Conceptual Framework

(Adapted from: S.Thaddeus &D.Maine,1994)

CHAPTER TWO: LITERATURE REVIEW

2.0 INTRODUCTION

The chapter provides a comprehensive review of literature related to factors determining utilization of skilled birth attendants in public health facilities by women of reproductive age.

The component present in this section includes the empirical literature review on proportion of women of reproductive age utilizing skilled birth attendants, factors influencing utilization of skilled birth attendants and strategies to improve utilization of skilled birth attendants. The chapter also includes the theoretical and conceptual frame work as done previously by other researchers.

2.1 Proportion of Women Using Skilled Birth Attendant

Quality maternal services are essential in achievement of the Sustainable Development Goal 3. SDG 3.1 which seeks to: reduce the maternal mortality ratio to less than 70 per 100,000 live births by 2030 (UN, 2015). For most of the developing countries it was impossible to achieve the set Millennium Development Goals (MDG) number 5 which was aimed at reducing maternal mortality rate by three quarters between 1990 and 2015 (UN, 2015). Maternal Mortality Ratio (MMR) in the developing countries is still 15 times higher compared to that of developed nations (United Nations, 2015). According to WHO in 2012 MMR globally was at 210 deaths per 100,000 live births, African region was at 500 deaths per 100,000 live births while in Kenya was at 362 deaths per 100,000 live births (WHO, 2019).

A study by WHO (2019) shows that the proportion of unskilled deliveries went down from 42 percent in 1990 to 32 percent in 2008 all over the world but in Africa, the rate remained at 50 percent. This can be used to explain the higher maternal deaths in

Africa compared to other regions of the world. Currently an estimated 6,300 women die annually during pregnancy and childbirth in Kenya, a tragic number that reflects inadequate progress toward providing essential health services to all women (National Council for Population and Development [NCPD], 2015).

Life risk of dying during pregnancy and childbirth is 1 in 3300 in developed countries like Europe compared to 1 in 40 in Africa thus portraying Sub Saharan Africa the most dangerous place for a woman to have a baby in the world (WHO, 2014). Sub Saharan Africa bears the lowest reduction rate of maternal mortality rate of 0.1%, of 20 countries with highest maternal mortality ratio in world 19 are from Sub Saharan Africa with only Afghanistan outside Africa (NCPD, 2015).

In Kenya, 95.5% of pregnant mothers attend Antenatal clinic with only 62% delivering under care of skilled birth attendants with Kitui county accounting for 46% of mothers delivering under skilled birth attendants (KDHS, 2014). In developed countries, skilled birth attendance is rated at 99.5 % while in developing world is at 46.5%. This shows how the developing counties are doing poorly and therefore need to identify factors that lead to these poor figures (Banke-thomas et al., 2020).

2.2. Factors that Influence Utilization of Skilled Birth Attendants for Women of Reproductive Age

According to Babalola (2014), some of the factors which contributed to utilization of skilled birth attendants in Haiti included community media saturation, household poverty and child's birth rank. The study shows that antenatal care decreased by 53% with high birth rank.

Research in Ethiopia shows that home deliveries remain high leaving skilled birth attendants to attend very few births in the health institutions. The study showed that

women who live in urban areas, with high education levels above primary school and with high income were most likely to utilize skilled delivery care services. The study also found that women who had visited four or more antenatal visits were significant factors in utilization of skilled birth attendants (Mehari, 2013). The situation of Kenya and Kitui south may not be different from the fact that Kenya just like Ethiopia is a developing country and all lie in the Eastern region of Africa.

Availability and accessibility of skilled care is also an important factor to consider according to Safe Motherhood Initiative. Institutional delivery depends on the availability and accessibility of skilled care to the pregnant women and their infants. These would help address the preventable obstetric and neonatal complications to both the women and the baby which can be fatal (WHO, 2019).

Socio-economic status and demographic background influences women's use of skilled delivery services. Higher maternal age, first birth, shorter distance from health facility from households, availability of transport, household wealth, religion, occupation, number of Antenatal clinic visits and education level are some of the factors that influence women to access skilled birth attendance in Kenya (Sidze, 2019).

2.3 Health system factors in influencing utilization of skilled birth attendants

Timely intervention by skilled birth attendant is imperative if adverse maternal and neonatal outcome are to be averted. Most maternal and neonatal deaths and injuries can be prevented and have been eradicated in developed countries such as post-partum hemorrhage as skilled birth attendant should be able to identify problems and complications early and make essential basic interventions and refer appropriately to the next level of care when necessary. Four in ten of all births worldwide are not

assisted by a skilled birth attendant (UN, 2015). Evidence globally shows that lack of access to and use of essential obstetric care services to be crucial factor in that it contributes to high maternal morbidity and mortality as skilled delivery attendant during labor, delivery and early post-partum period could reduce deaths due to complications such as obstructed labour, hemorrhage, sepsis and eclampsia (WHO, 2014).

In sub Saharan Africa some of the identified gaps for poor utilization of health facilities included poor access, availability, acceptability of the services, lack of clear directions, lack of privacy and poor referral systems (UN, 2015). A study conducted in South Africa, Botswana and Zimbabwe showed some of barriers for utilizations of skilled attendants included unfriendly staff, staff attitude, lack of privacy and inadequate staffing.

Similar studies conducted in Kenya corroborated with studies done elsewhere in Africa which showed personnel shortage, poorly trained health care workers, staff with punitive attitude, poor funding and poor organization (Orare, 2018). In Kenya, good quality maternal health services are not universally available and accessible as over 35 percent do not receive antenatal services with approximately 50% of deliveries unattended by skilled birth providers and over 70% receiving no postnatal care during first six weeks of following delivery (MOH, 2016).

2.4 Strategies to Improve Utilization of Skilled Birth Attendants

According to WHO World health report (2019), poor maternal conditions accounted for the fourth leading cause of death in women worldwide after HIV/AIDS, Malaria and tuberculosis. In 1980 about 526,300 women died from pregnant related conditions while in 2008 around 342,900 died, a significant drop, this improvement

was due to lower pregnancy rates in some countries due to high contraceptive utilization rate, improved maternal nutrition, access to health care, more education to women and increased availability of skilled birth attendants.

Multiple global efforts included accelerated progress towards reducing maternal and child mortality and improving child survival such as the launching of the global strategy for women's and children's health aimed at saving the lives of more than 16 million women and children by UN Secretary Ban Ki-Moon in September 2010 (WHO, 2019).

Research work by Lang & Mwanri (2015) on utilization of skilled birth attendants recommended health education program to women on utilization of maternal health care services that are offered in the health facilities or other places with skilled delivery services. In line with capacity building and awareness creation, he suggested targeting of specific groups including uneducated and rural women through the appropriate media. The program should also target to improve use of antenatal care during pregnancy and also focus on women with birth disorders that may be rated as high. Improvement in the women socioeconomic status is important so as to see women seek skilled care during pregnancy, delivery and post natally.

In Kenya, Studies shows that the increase of accessibility and improvement of socio-economic situation may improve the utilization of skilled birth among women (Langat, 2019). Even though there is improvement in Kenya's infrastructure many people still live relatively far from the health facilities (Kilonzo et al., 2017). A great number still cannot afford the maternal health charges and face other barriers in accessing these skilled services. This has led to those living in urban areas to utilize these services more compared to those living in rural areas (Brals, 2019).

Study by Lang and Mwanri (2015) suggests that strategies that will increase the availability and accessibility of health facilities should be given priority. Poor road network should be addressed by the local, national politicians and other leaders. The health facilities should be fully staffed with qualified and motivated personnel and monitoring through supportive supervision by the supervisors. There should be a closer interaction between the health facility staff and the community members especially the household heads. This will ensure correct decisions when it comes to health issues especially on maternal health services. The study also emphasis on promotion of domiciliary midwifery by capacity building of more Community Health Volunteers (CHVs) and providing them with means of transport like motor bikes and delivery kits in areas that are hard to reach. Women advocacy groups should be involved in awareness creation and trainings.

Studies done by Owiti et al (2018) in Nairobi shows that factors associated with maternal health services operate in multiple levels thus the need to be tackled holistically. It shows that there is need to pay more attention to the multiparous and women who are not well educated in the society. There is also need to address the phenomenon of distance from health facilities, delay in seeking emergency services and improve access of the poor to maternal health services. Community members should be mobilized with the aim of ensuring that the efforts are designed to come up with changes in relation to norms that hinder the use of the maternal health services. The National reproductive health policy action in Kenya for maternal and newborn health echoes the ministry of health goals and objectives in increasing the proportion of deliveries conducted by skilled birth attendants (Matiang, 2018).

2.5 Summary of research gaps

From literature review a lot has been explored on the factors affecting utilization of free skilled delivery services in health facilities. The studies have indicated women in reproductive age who are from high social - economic status have better access to free skilled delivery services in public health facilities as compared to those from low social-economic status that are noted to be attached to some deep rooted traditional cultural practices. It is also noted socio-cultural, economic, and political and health system factors had influence on the level of access to free skilled delivery services among women in reproductive age. However, most studies did not clarify which factors influence the access to skilled SBAs most and the believe that most people with low social economic status have poor access to SBAs in public facilities as most people in high social economic status even seek services of SBAs mostly in private institutions. There is no known study which has gone further to clarify such noted discrepancy which creates a gap for this study to explore. Most empirical studies have been done in urban areas and no known study which has tried to explore the aspect under this study in different setting that is in urban, peri- urban and rural areas in a single study leaving a lacuna which this study tried to investigate.

2.6 Theoretical framework of the study

2.6.1 The theory of reasoned action

The theory was advanced by Fishbein and Ajzen 1975 as model of behavioural prediction. The postulate of the theory was that behaviour is a product of people intention of behaving in particular manner which emanates from people's attitude on the action and subjective custom regarding the behaviour. The people's attitude

encompasses how people perceive an action and its consequences and people are seen to be rational and use the information they have regarding action to take.

According to Ajzen and Fishbein (1980) individuals make decision in connection to action to take after considering the implication of the action. If they perceive the outcome of certain behaviour to be positive, their attitude will be positive thus engaging in that task. Despite social, economic, political and health system challenges manifesting themselves; if a woman in reproductive age thinks it is safe delivering in hospital and it will lessen chances of dying they will seek for such services and if attitude is negative they won't seek for such services. What women in reproductive age feel about delivering in health facility also influences whether they will approve or disapprove using such free skilled delivery services in health facilities.

Ajzen and Fishbein (1980) noted that the theory addresses attitudinal and normative component where attitudinal component deal with perception about effects of various actions that is how people feel about free delivery services. If attitude is positive, more people will access free SBAs services for instance if they perceive service to be good, safe, good treatment they will access the services more and vice versa. The theory will address both independent variable (factors leading to utilization of free skilled delivery services) and dependent variable utilization of SBAs.

2.6.2 Behavioral Model on Health care service utilization

This model was proposed by Anderson, (1968) and operationalized by Pokhrel and Sauerborn (2004). The theory anchors itself on non-cognitive factors which encourage health-seeking behaviours (Lacaille, et al., 2013). Seeking of health services is clustered on the context of socio-cultural and economic perspectives. The factors are demarcated into predisposing factors like age, sex, occupation, education; enabling

factors such as income, household materials and lastly need factors like perception of illness and service indicators.

Advancement of the model done by Pokhrel and Sauerborn, (2004) accentuated that decision to access health services consider economic situation, distances to travel, level of education, individual satisfaction based on the previous services that were given and perception on the quality of services. Recent work by Tama (2018) identifies cultural, social, organizational, environmental, geographic and economic domains to influence access to delivery services in health facilities. Calhoun et al (2018) concurred that social, cultural, political and economic; health system factors will affect access to skilled birth attendants by pregnant women. This theory is relevant since it address both independent and dependent variables of the study.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Research Design

The study design adopted a facility based descriptive cross sectional study. This included a survey. The survey entailed structured questionnaires to collect the data. This allowed for the analysis and comparison of the data. There were also in-depth interviews with key informants and focused group discussions.

3.2 Variables

3.2.1 Dependent variable

The dependent variable was the utilization of skilled birth attendant by women of reproductive age.

3.2.2 Independent Variable

Independent variables included; socio-demographic factors like; level of education, maternal health knowledge, parity, Ante-natal visits, religion, sex, ethnicity, age, marital status, employment, household sanitation and practices. Economic factors such as; distance from health facilities, infrastructure and transport cost. Quality of care, medical supplies, staff attitude, referral systems and waiting time are also some of the health care system factors included in the independent variables.

3.3 Location of the Study

The study took place in Kitui South sub- County, which is one of the eight administrative sub counties of Kitui County. Mutomo town is the Sub County headquarters situated 75 kilometers south of Kitui town along Kitui-Kibwezi road. According to the current national household survey Kitui South Sub County has a population of 196, 320 (KNBS, 2019). Kitui South Sub County comprises of six

assembly wards namely; Kanziko, Ikutha, Mutha, Ikanga, Mutomo and Athi. Kitui south is mainly inhabited by mainly Kambas with few other ethnic groups. The inhabitants are mainly small-scale farmers, businessmen/women and a few civil servants.

3.4 Study Population

The study population entailed women of reproductive age (15-49 years) and the health care workers in sampled health facilities and villages in Kitui South sub- County. The proportion of women of reproductive health in Kitui south was 21% of total population which is 38,500 women (KDHS, 2014). The study also involved the sub county health management team members in Kitui South sub- County, Traditional birth attendants, Community health workers, assistant chiefs, chiefs, ward administrators and religious leaders as the key informants.

3.4.1 Inclusion criteria

This included women who had given birth 1 year preceding the survey.

Key informants were health workers in the sampled health facilities who had been actively involved in delivery services in the maternity units and selected SCHMT members, TBAs, Chiefs and CHWS.

3.4.2 Exclusion criteria

All Women of reproductive age with unsound mind since they were not mentally stable to give an informed consent.

Those women who were critically ill at the time of the study.

3.5 Sample Size Determination

The sample size for women in reproductive age was determined using Fishers et al (1998) Formulae since the population was above 10,000. Women of reproductive age in Kitui South were 21% of 183,333 = 38,500 (GOK, 2010).

That is;
$$N = \frac{Z^2 pq}{d^2}$$

Where

N = Desired Sample Size (N> 10,000)

Z = The standard normal deviation of 1.96 which corresponds to 95 % confidence level

P = Proportion of women accessing skilled delivery in Kitui south sub county is - 36% (0.36) (MOH, 2012).

$$q = 1 - p (1 - 0.36 = 0.64)$$

d = Permitted error (5% since the confidence level is 95%)

Therefore,

$$N = \frac{1.96^2 \times 0.36 \times 0.64}{0.05^2}$$

$$N = 354.16 = 354$$

Add 10% of 354 was added to allow for Non-responses and attrition=35. Therefore the sample size of women in reproductive age who were to be sampled in various health facilities with structured questionnaires was 389. Thirty women were sampled randomly for focused group discussion. Fourteen health care workers, 6 chiefs, 6 assistant chiefs, 4 wards administrators and 2 sub county health management team officials were also purposively sampled for the study.

3.6 Sampling Techniques

Kitui County was purposive sampled while Kitui South Sub County was also purposively selected. Stratified and random samplings were used to select the health

facilities that were taken into consideration. This ensured all levels of the health facilities were considered in the final study. These levels included level 2, 3 and 4. From those health facility levels, 14 health workers were purposively sampled. Random sampling ensured that all respondents had equal chances of being chosen and there was no biasness in the choice of the respondents in the chosen facilities. Systematic sampling method was used in identification of the women of reproductive age attending for services in the sampled health facilities at a sampling interval of every 3rd number while purposive sampling technique was used to select key informants like chiefs, assistant chiefs, ward administrators and sub county health management officers.

Table 3.1: Sampling Frame for study participants

Category of respondents	Study population	Sample size	Sampling methods
Women in reproductive age	38,500	389	Systematic random sampling
Health workers	89	14	Stratified and purposive sampling
Chiefs	14	6	Purposive sampling
Assistant chiefs	36	6	Purposive sampling
Ward administrators	6	4	Purposive sampling
Sub County Health management Team	10	2	Purposive sampling
TOTAL	38655	421	

Table 3.2 Sampling Matrix for health facilities

Health facility level	Total number available	Number of facilities to be sampled	Facility name	Total women participating in the study	Health care workers participating in the study
Level 2 (Dispensary)	20	5	Ilengi	32	5
			Yongela	32	
			Mwengea	32	
			Ndatani	32	
			Yaathi	32	
Level 3 (Health centre)	10	3	Mutha	50	6
			Ikutha	50	
			Mutomo	50	
Level 4 (Sub-district hospital)	1	1	Ikanga	79	3
TOTAL	31	9		389	14

3.7 Data collection tools

The study employed designed instruments, which were pretested and revised before final data collection which included structured questionnaires, interview guide and focused group discussions (FGD). Structured questionnaires were administered to selected women of reproductive age and health workers with assistance from research assistants who mostly were nurses or officer in charge of a health facility. Questionnaires were used for above respondents because it could yield a lot of information from many respondents over short period of time. Questionnaires had merit of respondents being anonymous which helps to produce more candid answers.

To avoid loss, questionnaires were filled and immediately collected after respondents filled them.

Interview guides for key informants was formulated for chiefs, Assistant chiefs, ward administrators and health management team. The researcher personally conducted the interviews and information was recorded through notes taking as the interview went on.

The researcher used focused group discussion checklist to obtain information from women of reproductive age in group of tens. Women used in FGD did not fill the questionnaires. This method helped to collect firsthand information from women of reproductive age in groups and information was recorded through audio recording.

3.8 Pre- Testing of the instruments

Two health facilities namely: Inyuu Health Centre and Kaliku Dispensary in Kitui East Sub County which has similar characteristics with the study area were used for pre testing targeting 39 women of reproductive age who were selected through simple random sampling and were not to participate in actual study. This was used to review the questionnaires and corrections done before the data collection in the main study.

3.9 Validity of the instruments

The data collected was primary data. Construct validity was measured by reviewing the items in the questionnaire if they gave the answers to the research questions. This was done by eliminating or adjusting ambiguous questions. The research supervisors gave their input on content validity, this ensured all the aspects of the construct were measured. During the pretesting, face validity was measured to ensure the tool can be administered and gather the required content. The data was then counter-checked with other sources like the health records (maternal child health cards) to verify authenticity, this gave the criterion validity. Research assistants were trained on data

collection. Data collection tools were reviewed by research experts and peers before the study was carried out.

3.10 Reliability of the instruments

The instruments used in data collection were pre tested to ensure that they were reliable and that the data collected made sense in meeting the research objective. Test-retest method was used to test reliability of instrument where Cronbach's alpha was used. The study got overall reliability of 0.78 which was high above acceptable level of 0.7 (70%).

3.11 Data Collection Techniques

Researcher prepared questionnaire for women in reproductive age. The researcher administered the questionnaires personally through dropping and picking the questionnaire immediately they were filled to avoid risk of the questionnaire getting lost. Researcher also involved trained research assistants in dropping the questionnaires and collecting them after respondents filled them.

For interview, researcher booked the key informants in advance in their respective offices where formal appointment was made. Interviews were done in respondent's office. Interviews were done in working days between 8:00 a.m to 5:00 p.m. The information was recorded through note taking. For focused group discussions, researcher used FGD checklist to interrogate women in group of 10s who did not fill questionnaires. The FGD was done during working days where responses were recorded through tape recording.

3.12 Data Management and analysis

Data collection in the field was continually supervised and quality controlled by the principal researcher. Quantitative raw data from questionnaires was grouped

according to objectives, coded and entered to Statistical Package for Social Sciences (SPSS) version 24. The SPSS generated both descriptive statistics and inferential statistics. Descriptive statistics included cross tabulation of mean, frequency tables giving percentage to understand attributes of variables under investigation. Pearson's chi-square test of independence was used to determine significant categorical variables at alpha p value of 0.05. Other inferential statistics involved regression analysis and correlation analysis to test the hypothesis of the study whether the independent variables were significantly associated and related with the dependent variable which is utilization of skilled birth attendant at 0.05 level of significance. Quantitative data was presented using tables, pie charts and bar graphs for effective communication to the users. Qualitative data was transcribed and analyzed thematically and described in a narrative form.

3.13 Logistical and Ethical Considerations

Two research assistants were recruited and trained on data collection techniques and technical terms were clarified for uniformity. In ethical considerations, approval to conduct the study was sought from Kenyatta University Graduate School, Ethical clearance was obtained from Kenyatta University Ethics Review Committee, Research permit sought from National Council for Science and Technology and Innovations (NACOSTI) and permission from County Government of Kitui-Ministry of Health and Sanitation, ministry of education science and technology and Ministry of interior and coordination of National Government. Informed consent was sought from the study participants above 18 years and those below 18 years of age assent forms were filled; consent forms were signed by their guardian who were above 18 years. Confidentiality was maintained throughout the study.

The study did not pose any threat or danger to any respondents used during the study. The researcher also assured the respondents about the degree of confidentiality on the information and that data gathered from them voluntarily and no one was forced to give information for the study.

CHAPTER FOUR: RESULTS

4.1.Introduction

This chapter dealt with presentation of findings on utilization of free skilled delivery services among women of reproductive age in public health facilities in Kitui South sub-County. It entailed data presentation, analysis and interpretation which were generated by the study. The findings were specifically on proportion of women of reproductive age utilizing free skilled birth attendants, social, cultural, economic factors and health system factors influencing utilization of free skilled birth attendants and strategies that are being put in place to enhance utilization of free skilled birth attendants among women of reproductive age in Kitui South Sub County.

4.2. Response Rate

The study targeted 389 respondents to give data on utilization of free skilled delivery services among women of reproductive age in public health facilities in Kitui South sub- County. A total of 375 respondents participated in the study making a response rate 96.4%. According to Mugenda and Mugenda (2003) a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent; therefore, this response rate is adequate for analysis and reporting.

4.3. Demographic Characteristics of the Respondents

The study sought to determine the demographic characteristics of the respondents as they are considered as categorical variables which give some basic insight about the respondents. The 375 women of reproductive age who were exposed to questionnaires gave their demographic characteristics. Main demographic characteristics considered in the study were range of ages, level of education, marital status, religion,

employment status, income per month and number of children woman in reproductive age had. The findings on these are summarized in Table 4.1

Table 4.1: Demographic Characteristics of the Respondents

Independent Variables	Frequency N=375	Percentage (%)
Age: (years)		
Below 19	57	15.2
Between 20-29	171	45.6
Between 30-39	118	31.5
Above 40	29	7.7
Level of Education		
Primary	212	56.5
Secondary	111	29.6
Tertiary	48	12.8
None	4	1.1
Marital status		
Married	237	63.2
Single	94	25.1
Separated	28	7.5
Divorced	16	4.3
Religion		
Protestant	229	61.0
Catholic	127	33.9
Muslim	4	1.1
Others	15	4
Status of employment		
• Unemployed	308	82.1
• Employed	67	17.9
Level of income per month		
<5000	274	73.1
5,001-10,000	45	12.0
10,001-20	38	10.1
<20,000	18	4.8
Number of children per respondent		
	109	29.1
One	176	46.9
Between 2-3	68	18.1
Between 4-5	22	5.9
6 and above		

The findings indicated that 171(45.6%) of the women of reproductive age were young persons aged between 20 - 29 years. This was followed by 118 (31.5%) of the women who were noted to be aged between 30-39 years.

In terms of level of education, over half of women in reproductive age had primary level of education that is 212(56.5%) followed by 111(29.6%) of respondents who were noted to be having secondary level of education which is the basic level of education. Very few respondents had tertiary level of education which was represented by 48 (12.8%) of the respondents which is the professional education although it was noted only 4(1.1%) of respondents had not attended any formal education.

Most women of reproductive age 237(63.2%) in the area of the study were married while 94(25.1%) of the respondents were single parents. This implies that marriage is valued in the area of study as there are also few cases of separation at 28(7.5%) and the divorce at 16 (4.3 %).

The finding indicated the biggest score of the respondents 356(94.9%) were Christians by faith where 229 (61%) were inclined to protestant churches and 127(33.9%) were Catholics. Other religions who mostly are traditionalist covered 15(4%) with Muslims covering 4(1.1%) of the respondents. The religion gave bearing in this study in that some practices done in certain religious groups influence whether people will access skilled birth attendant or not. In traditional African culture and practice there are cultural practices attached on use of traditional birth attendants compared to use of skilled birth attendants in health facilities.

The findings also indicated that 308(82.1%) had no formal employment with only 67(17.9%) having formal employment. This can be attributed to high illiteracy in the

area with most women in reproductive age having reached only primary level of education. Most women in reproductive age 274(73.1%) actually had average monthly income of less than 5000 shillings. This implies that bulk of the women in reproductive age in Kitui south sub county earn less than a dollar a day. This is followed by those who earn between 5000 and 10,000 shilling a month especially those who are in small scale business in the area of study. It is noted that it is only 18(4.8%) of all respondents who earn more than 20,000 shillings and who are mostly likely employed on white collar jobs and informal employments.

Almost half of the respondents 176(47%) who are women of reproductive ages had 2-3 children compared with 109(29%) of the respondents who had only one child. Very few respondents precisely 22(6%) had more than six children.

4.4. Level of Utilizations of Maternal and child Health Services

The study sought to investigate the level of utilizations of health services in Kitui South Sub County by Women of reproductive age. They responded to the questionnaire's which enquired whether the respondents were the one receiving services at health facility. Majority 356 (94.9%) responses indicated that they had accessed health services while 19(5.1%) indicated they had not come for any services.

The study further probed the respondents on the kind of the services women of reproductive age were receiving in the health facilities. The responses were summarized as shown in table 4.2.

Table 4.2: Services Received by Women of Reproductive age in the Health Facility

The type of Service Received	Frequency	Percentage
ANC	94	25.1
FP	38	10.1
OPD	79	21.1
MCH	134	35.7
Others	30	8.0
TOTAL	375	100

Findings in Table 4.2 indicated that the service which is frequently offered to women of reproductive age is maternal child care (MCH) which was supported by 134(35.7%) of the respondents followed by antenatal care which was rate at 94(25.1%) of all responses made by the respondents. This implies that most of services offered to women of reproductive age in the area of study are related maternal neonatal child health. It was also noted other services offered was outpatient services which help to mitigate other ailments related to health of children and mothers which are not serious as they were managed and both mother and child goes home the same day. Family planning services accounted for 38 (10.1%) while other services recorded 30 (8%) of all responses.

The study noted from interview with health workers that almost all public health facilities offered all maternal health services ranging from antenatal care, maternity services maternal child care and prevention of mother to child transmission which from the responses of women in reproductive age it was noted they had received such service in those health facilities.

The study also investigated whether respondents had heard of free skilled delivery services, whether free delivery services in public health facilities have been of any help in ensuring utilization of skilled birth attendants, what respondents have heard from the community on maternity services, whether the nearby public health facility operate 24 hours a day for maternity services and whether they missed delivery services in their nearest public health facility. The same information was summarized in table 4.3.

Table 4.3: Level of Utilization of Free Skilled Birth Attendance

Independent Variables	Frequency N=375	Percentage (%)
Whether respondents had heard of free skilled delivery services		
Yes	346	92.3
No	29	7.7
Whether free delivery services have been of any help in ensuring utilization of SBA		
Yes	254	70.4
No	87	23.2
Don't know	24	6.4
What respondents have heard from the community on maternity services		
Good	64	17.1
Average	193	51.5
Bad	82	21.9
Don't know	36	9.6
Whether the nearby public health facility operate 24 hours a day for maternity services		
Yes	43	11.5
No	231	85.6
Don't know	11	2.9
Whether they missed delivery services in your nearest public health facility		
Yes	289	77.1
No	86	22.9

Findings from the study indicated that 92.5% of the respondents noted had heard of free skilled delivery services unlike 7.7% of the other respondent who reported that they had not heard of the free skilled delivery services. This means that there is

enough awareness on free skilled delivery services in Kitui south sub county. The responses by key informants also indicated that most of them had heard of the free skilled delivery services and most of them even indicated that women in reproductive age in their area had heard about free skilled birth attendants. Finding from FGD also indicated that most women in reproductive age had heard and even accessed skilled delivery services in hospitals.

Most of respondents (70.4%) supported that free delivery services in public health facilities have been of help in ensuring utilization of skilled birth attendants with 23.2% of the respondents negating the same statement. 6.4% were not aware whether free delivery services in public health facilities have been of help in ensuring utilization of skilled birth attendants. This implies that most women in reproductive age had noted importance of free delivery services in public health facilities to have influence on utilization of free skilled birth attendants. From the interview of both the key informants and health it was noted that they all had supported the idea that free skilled delivery services had great impact and almost all of them gave increased number of women seeking maternal and antenatal services indicating that the services had an impact.

It was realized from the study that 51.5% of the respondents had heard from the community members claiming that maternity services are average. It was however noted that those who claimed services were bad were 21.9% who are more than 17.1% who claimed that the services were good. It also noted almost 10% were aware on the condition of maternity services in the public health centers. Information collected from the key informants and health workers indicated that the services which were slightly different from the findings from the women in reproductive age who said the services were average. The results from FGD by most women claimed

that services in public health facilities were good although some were others who claimed the services were poor.

Findings from the study further indicated that most nearby public health facility does not operate 24 hours a day for maternity services as evidenced by 85.6% of respondents who supported that with only 11.5% claiming that facilities operate 24 hours for maternity services. Another negligible percentage of 2.9% claimed they didn't know whether the nearby health facility operated 24 hours. It should be noted that most of facilities in Kituisouth sub county are dispensaries and most of them don't have fully fledged maternity units and are manned by only one nurse who are usually not housed in the facility. Results from the health workers and key informants also indicated that most health facilities were not operating on 24 hours basis. Through FGD it was noted that most respondents claimed that most public health facilities were not operating 24 hours.

The study also indicated that a bigger percentage of the respondents (77.1%) had claimed that they missed delivery services in their nearest public health facility when you needed them with 22.9% claiming that they did not miss the services when they needed them. This implies that services in most public health facilities are not always available for women of reproductive age in Kitui south sub county especially for maternity services.

The study sought from the respondents the reason why the respondents missed delivery services in the nearest public health facility when they needed them. Responses given were summarized in table 4.33.

4.4 Reason for Missing Delivery Services in the Nearest Public Health Facility

Reason for Missing Delivery Services in the Nearest Public Health Facility	Frequency	Percentage
Facility was closed	189	29.6
No Skilled birth attendant was available	13	2.0
Staff was busy with other patients	76	11.9
Had no money	64	10.0
Staff harsh/rude	134	21.0
Supplies were missing	101	15.8
I was referred	62	9.7
TOTAL	639	100

Findings in table 4.4 indicated that the reason why most of the respondents missed the services in public health facilities where; the facility was closed recorded 189 (29.6%) of the responses followed by rude and harsh staff which recorded 134(21%) of all responses. This implies women in reproductive age evade public facilities because they are closed because most of them have one skilled birth attendant as most of health facilities in Kitui south are dispensaries. Staff are also noted to be harsh and rude making them to also avoid the health facility. It is noted that missing supplies in health facilities, staff being busy with other patient and being referred which recorded 101(15.8%), 76(11.9%) and 64(10%) respectively was also main factors which may make women in reproductive age miss some services in the health facilities. Least reason noted was lack of money and no skilled birth attendants which recorded 64(10%) and 13(2%) respectively were noted to be the least reason noted which made women in reproductive age to miss some services in health facilities. From the FGD it was noted that some women miss services in the nearby facilities because they lacked

money, the facilities were closed, the health workers were not available and lack of medical supplies.

4.4.1. Level of Utilization of ANC Services by Women of Reproductive Age

The study sought to find antenatal clinic services characteristics of women in reproductive age in terms of whether respondents attended clinic in recent pregnancy, number of times they attended ANC clinics and stage of gestation at which they attended ANC clinic, The findings were summarized in table 4.5.

Table 4.5: ANC Attendance Characteristics of the Respondents

ANC Characteristics of the Respondents	Frequency N=375	Percentage (%)
Whether respondents attended clinic in their last pregnancy		
Attended	368	98.1
Did not attend	7	1.9
Number of times they attended ANC clinics		
None	6	1.6
Once	48	12.8
2-3 times	182	48.5
Above 4 times	139	37.1
Stage of gestation at which they attended ANC clinic		
1-3 months	237	63.2
4-6 months	94	25.1
7-8 months	28	7.5
Don't know	16	4.3

Findings indicated that almost all respondents 368(98.1%) had made at least one antenatal clinic care visit compared to 139(37.1%) who had attended the recommended four ANC visits. It was noted that 6(1.9%) did not attend any ANC

clinic during pregnancy. This means that most women of reproductive age were aware on the importance of antenatal clinic care and thus why the attendance was almost 100%. It was noted from the interview with health workers that in a month in average all facilities attended 20-30 cases of women of reproductive age attending ANC in those facilities. The study showed that on monthly basis in average each health facility had about five cases of institutional deliveries. This indicates that women of reproductive age are accessing skilled delivery services in Kitui south sub county but in low numbers.

Findings from women who participated in focused group discussion indicated that most women only attended clinic mostly once or twice during their pregnancy. The study probed the reason behind that and most women in the FGD claimed women were not well informed, poor support from their husband, distance and most women were noted to have started attending clinic at late pregnancy like from seven month making them to attend clinic only once. On the other side, higher maternal age, first birth, shorter distance from health facility, availability of transport, household wealth, religion, occupation, number of Antenatal clinic visits and education level are some of the factors that influence women to access skilled birth attendance in Kenya (Wausi, 2018).

A few of the respondents 28(7.5%) started attending ANC clinic when they were at gestation of 7-9 months of their gestation. Of all the respondents 94(25.1%) started attending the clinic at gestation of 4-6 months. 237(63.2%) who started attending the clinic as early as from 1-3 month and also with notable 9.3% of the women who don't even know when they started attending antenatal clinic.

The study prompted the respondents whether they discussed any danger signs or complication during ANC visits, labour and immediately after delivery with their service providers. The respondents responded by Yes or No whether they discussed the danger signs or complication. The study found that 371 respondents (98.9%) discussed with the health workers on the danger signs or complication during ANC visits, labour and immediately after delivery while 4(1.1%) did not. This implies when the pregnant mothers visit the ANC clinic, during labour and even after delivery they had opportunity to discuss challenges and dangers they can experience to prepare them psychologically for any challenge they may experience and how they can manage them.

The study also sought to find whether Individual Birth Plan (IBP) was discussed between the women of reproductive age and the service provider during ANC. Areas identified to see whether they were discussed were: identification of decision maker during emergency, transport plan, birth partner during delivery, how to get money in case of emergency, Identification of birth place and Mother–baby package. The responses were summarized in pie chart as shown in figure 4.1.

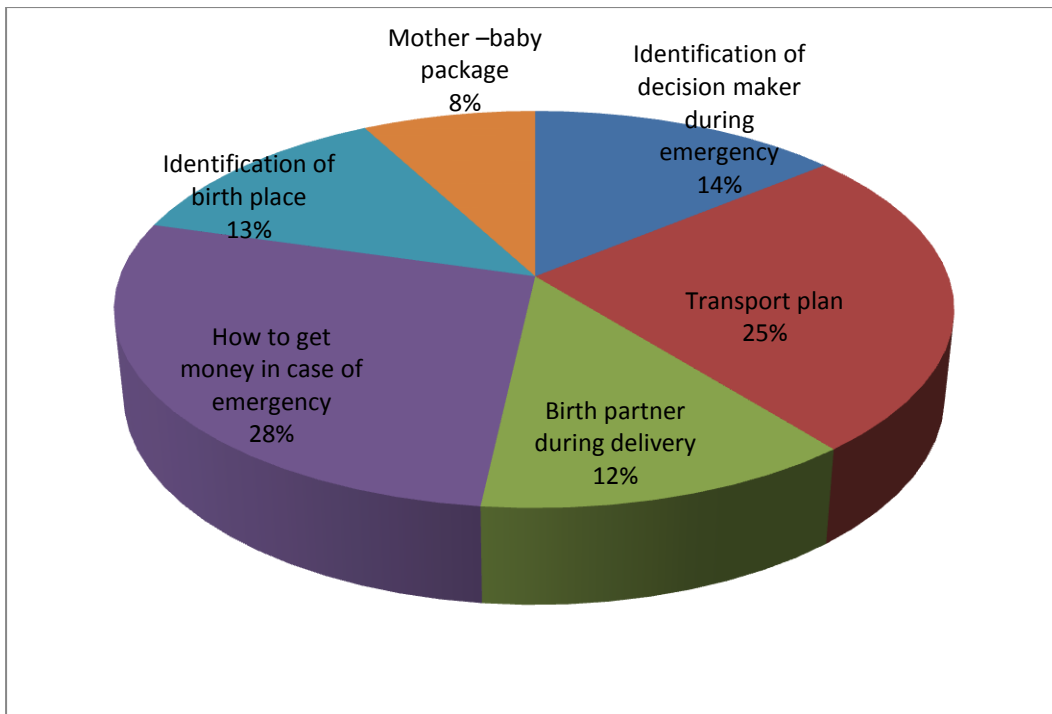


Figure 4.1: Individual Birth Plan (IBP) discussed by women of reproductive age and service provider

It was discovered from the study as summarized in figure 4.2 that women of reproductive age discussed with the service providers on various aspects during pregnancy. The item on how to get money in case of emergency was most discussed with 279(27.7%) followed by transport plans 254(25.2%) which registered of all responses on areas discussed. Identification of decision maker during emergency followed at far third with 14% while identification of birth place, birth partner during delivery and mother-baby package were noted to have been discussed with 126(12.2%), 128(12.5%) and 8% of all respondents respectively.

4.4.2. Level of utilization of delivery services

The study sought to find characteristics of delivery services offered to women of reproductive age in Kitui South Sub County. The elements which respondents responded to were as follows: place where the last baby was born, mode of delivery,

those who assisted the respondents during last delivery, who made decision on place of delivery, cost incurred on the delivery services and who paid for the delivery services. Each item was discussed separately and presented in tables as shown below.

First sought to find place where the respondent's last baby was born. The responses was summarized in table 4.6.

Table 4.6: Place Where the Last Baby Was Born

Place where the last baby was born	Frequency N=375	Percentage (%)
Hospital (health facility)	247	65.9
Home	87	23.2
On the way to hospital	26	6.9
Any other place	15	4.0
TOTAL	375	100

It was noted from the findings in table 4.6 that most of the respondents 247(65.9%) delivered in health facilities. Only 87(23.2%) of the respondents gave birth at home with 26(6.9%) of respondents claiming they gave birth on their way to hospital implying that their intention was to deliver in the hospital or health facilities. It was only 15(4%) of the respondents indicated that they gave birth in any other place which may mean they sought services of traditional birth attendants. It was deduced that for those who gave birth at home were assisted by traditional birth attendants or relatives. The study sought to find the mode of delivery used during birth. The summary of responses were presented in table 4.7.

Table 4.7: Mode of Delivery

Mode of delivery	Frequency N=375	Percentage (%)
SVD (Spontaneous Vaginal Delivery)	278	74.1
CS (Caesarean section)	97	25.9
TOTAL	375	100

It was found from the study that most respondents 278 (74.1%) had delivered through spontaneous vaginal delivery which is commonly referred as normal delivery. It was noted that out the entire respondents it is only 97 (25.9%) of the respondents who delivered through caesarean section.

The study sought to find the persons who assisted women of reproductive age during their last delivery. The responses were summarized in table 4.8

Table 4.8: People who assisted the Respondents during Last Delivery

People who assisted the respondents during last delivery	Frequency N=375	Percentage (%)
Nurse/ midwives	232	62.4
Doctors / Clinical Officer	92	24.6
TBA (traditional Birth Assistant)	36	9.6
Relative/ neighbour	11	2.9
Self /Un assisted	4	1.1
TOTAL	375	100

The findings from the study in table 4.8 indicated that almost two thirds of the respondents that is 232(62.4%) were assisted by nurse or midwives which was followed by 92(24.5%) of the respondents who were assisted by clinical officer or doctors especially those who underwent the caesarean section during their birth. The other 9.6% of the respondents agreed they were assisted by traditional birth attendants with those assisted by relatives and self being approximately 11 (2.9%) and those who

were not assisted by anybody being 4(1.1%). Responses given by health workers from interview on rating of utilization of free skilled delivery services indicated that most respondents had confirmed that the level is fair. It was also realized from the interview that all public facilities had free delivery services policy and that free skilled delivery services had made some impact to the catchment area in Kitui south sub county as many deliveries were conducted in health facilities unlike before introduction of free delivery services in public hospitals in 2013 in the Country. The study sought to find the person who made decision on the place of delivery. The data was summarized in table 4.9.

Table 4.9: Person Who Made Decision on Place of Delivery

Person who made decision on place of delivery	Frequency N=375	Percentage (%)
Self	216	57.6
Husband/ partner	132	35.2
In-laws	12	3.2
Other person	15	4
TOTAL	375	100

The findings in table 4.9 indicated that most of the women of reproductive age that is 216(57.6%) had made decision on place of delivery. Respondents reported that husband or partners accounted for 132(35.2%) of the decision on place of delivery. This means mostly in the area of the study decision on place of birth is mostly done by pregnant mothers or their husbands. Findings from the women exposed to FGD who indicated that major decision concerning delivery were made by their husbands or the pregnant mothers.

The study sought to find out reason why respondent chose the health facility they delivered their last delivery. The responses were summarized in table 4.10

Table 4.10: Reason for the Choice of the Health Facility in the Last Delivery

Reason for the choice of the Health Facility in the last delivery	Frequency	Percentage
Near my residence	268	27.0
Cheapest	124	12.5
Good services	179	18.0
Was referred	34	3.4
Health provider was good	131	13.2
Equipment and other supplies are available	257	25.8
TOTAL	993	100

Findings from table 4.10 indicated that most respondents chose the health facility they delivered because they were near their residence and had equipment and other supplies available which recorded 268(27%) and 257(25.8%) respectively. This implies the proximity and accessibility is key on choice of health facility and equipment in the area of the study. Having good services, having good health providers and cheap and affordable services which recorded 179(18%), 131(13.2%) and 124(12.5%) respectively were also other reasons which made the respondents to choose the facility for delivery. It was also noted that referral was least reason which made respondents to choose a certain facility as it was beyond the respondents choice. The study prompted whether there were any systems in place to assist pregnant women in case of obstetric emergencies. The responses expected were either Yes or No. It was observed that it was only very few respondents (7.7%) who agreed that there were systems in place to assist pregnant women in case of obstetric emergencies although they did not even expound the kind of the system in place. This implied that they were not even sure of their responses. The biggest percentage (92.3%)

respondent that there were no systems put in place in the area of the study to assist pregnant mothers who might get cases of obstetric emergencies. Data collected from both key informants and health workers who were interviewed indicated that there were some measures put in place to assist pregnant mothers in case of emergency in the sub county such as stand by ambulances to assist mothers with referral cases to higher levels of care.

The study probed respondents on where they wished to delivery their babies in subsequent pregnancies. Most respondents (96%) preferred that their next delivery should be in hospital with very few respondents (4%) saying the next delivery will be done at home.

The study also sought to find whether there was importance of hospital delivery. The responses expected were either Yes and No. Almost all respondents precisely 98.1% claimed hospital delivery was important with only 1.9% giving contradicting information. This implies that almost all respondents were supporting the idea of hospital delivery. Findings from FGD also indicated that all women supported delivery in hospitals.

Researcher sought to know from the respondents why they were aware of reasons for hospital delivery which was summarized in table 4.11.

Table 4.11: Reason for Hospital Delivery

Reason for hospital delivery	Frequency	Percentage
Skilled and knowledgeable staff	242	26.4
Quality and safe equipment	263	28.7
Good care	122	13.3
Specialized attending of emergency	76	8.3
Availability of medical supplies	212	23.2
TOTAL	915	100

Findings in Table 4.11 indicates that the main reason respondents supported hospital delivery was quality and safe equipment which registered 29% of all responses followed by skilled and knowledgeable staff and availability of medical supplies which registered 27% and 23% respectively. This implies that having skilled staff, quality equipment and supplies in hospital are factor that has made respondents to choose to have their delivery in hospitals unlike at home or at hands of traditional birth attendance where such factors are not available. Other factors that make women in reproductive age to deliver in hospital include good care and specialized attention to emergencies which recorded 13% and 8% respectively. The findings from the FGD indicated that most women also preferred giving birth in hospitals and reason given by most women were hospitals able to manage complications like excessive bleeding after delivery, there are more qualified personnel, enough supplies and equipment, prevention of mother to child HIV/AIDS infections and one can be easily referred in case of complications.

4.5 Socio-Cultural and Economic Factors Influencing Utilization of Skilled Birth Attendants

The study sought to find the cost incurred during the delivery services. The findings were summarized in table 4.12

Table 4.12: Cost Incurred On the Delivery Services

Cost was incurred on the delivery services	Frequency N=375	Percentage (%)
less than 500	113	30.1
1000	74	19.7
1001-2000	59	15.7
Over 2001	36	9.6
Did not pay anything	93	24.8
TOTAL	375	100

It was noted from the study as indicated in table 4.12 that most of the respondents 113(30.1%) paid less than 500 shillings for delivery services. This has been due to the fact that government has been in its verge for having free maternal care where by having the government delivery vouchers they deliver for free with only small amount paying less than 500 shilling especially who visit private facilities. This was followed by 93 (24.8%) of respondents who said they had paid nothing for delivery services. Those who claimed to have spends 1000 or 1001-2000 were 74 (19.7%) and 59 (15.7%) respectively of all respondents with those who paid above 2000 being only 36(9.6%) of the total respondents. This implies most of maternity and delivery services were free or little fee is charged on them.

The study sought to find who paid for the delivery services. The responses were summarized in table 4.13.

Table 4.13: Institution or Individual Who Paid For the Delivery Services

Institution or person who paid for the delivery services	Frequency N=375	Percentage (%)
Self	49	13.1
Partner/husband	79	21.1
Insurance (NHIF)	24	6.4
Government (OBA vouchers)	196	52.3
Others (Specify)	27	7.2
TOTAL	375	100

It was discovered from the findings in figure 4.13 that most expenses for delivery services were paid by the government through the OBA voucher system which was supported by 196(52.3%) of all respondents. Husbands/partners were noted to be the other individuals who paid for the delivery services costs at 79(21.1%) and mothers who paid the bill by themselves were 49(13.1%). NHIF and others means were the

least in payment of the delivery services which scored 6.4% and 7.2% respectively. This implies that most people in the area of the study have not subscribed themselves in medical insurance schemes to cover themselves from health related risks.

4.5.1. Utilization of NHIF card for Maternity Services

The study sought to find level of access to NHIF service by women of reproductive age. The findings were summarized and presented in table 4.14

Table 4.14: Level of Access to NHIF Card by Women of Reproductive Age

Level of Access to NHIF Card by Women of reproductive age	Frequency	Percentage
Had access to NHIF card	90	24
No access to NHIF card	285	76
TOTAL	375	100

The findings in table 4.14 indicated that the bigger percentage of the respondents 285 out of 375(76%) had no access NHIF card while 90 (24%) had access to NHIF card.

The study sought to find the reason why most respondents had no or poor access to NHIF card. The reason why respondents said they had no NHIF cards. The findings were summarized in table 4.15

Table 4.15: Reason for Lacking NHIF Card by Women of Reproductive Age

Reason Why Respondents Had no NHIF Card	Frequency	Percentage
Lack of information	102	12.9
Lack of enough money	174	22.0
Ignorance	115	14.6
Poor access to issuing institutions	123	15.6
Unemployment	276	34.9
TOTAL	790	100

It was noted from the study in table 4.15 that most respondents claimed that they lacked NHIF card because they were unemployed and they lacked money to subscribe monthly which recorded the 276(34.9%) and 174(22%) respectively. This matches with KNBS (2009), which indicated that most of the respondents were unemployed in the area of the study especially females and survived with less than a dollar a day in Kitui south constituency. Poor access to issuing institution recorded 123(15.6%) while lack of knowledge and ignorance recorded 115(14.6%) and 102(12.9%) respectively. This implies that there are few offices issuing NHIF card limiting issuance of NHIF card. These findings concurs with those report published by MOH (2015) which indicated that most mothers lack information, enough money, are ignorant and there are poor access to issuing institutions which limit access to NHIF services.

The study sought to find whether there are cultural factors which prevent respondents from accessing services of skilled birth attendant services in the community. The responses were either Yes or No. Over three quarters of the respondents indicated that there were no cultural factors barring them from accessing skilled birth attendants with only around 20 percent indicating there were cultural factors affecting access to skilled birth attendants. The 20% of the respondents who indicated there were cultural factors which prevented access to skilled birth attendants services in the community note on the following as the factor. The responses on the cultural factors influencing access to skilled birth attendant were summarized in table 4.16

Table 4.16: Cultural Factors Influencing Access to Skilled Birth Attendant

Cultural Factors Influencing Access to Skilled Birth Attendant	Frequency	Percentage
Practices associated with the witchcraft	49	21.2
Food taboos	24	10.4
Attachment to traditional birth attendance	61	26.4
Patriarchy	41	17.7
Attachment associated with dead relatives	56	24.2
TOTAL	231	100

It was realized from the findings in table 4.16 that main cultural practices hindering access to skilled birth attendants to be attachment to traditional birth attendance which registered 26.4% of all responses followed by attachment associated with dead relatives. In the area of study some people especially tend to have attachment to traditional birth attendants where some of them believed if they help someone when giving birth; the child will have good fortunes. They also attach giving birth under traditional birth attendants as some rituals may be done which appease the dead relative and bless the child to be successful unlike giving birth in hospitals where those rituals cannot be performed. Believe in witchcraft is another factor noted 49(21.2%) of the respondents where they feel it's wise to give birth under TBA attendants after which they can get protected with charms to avoid witchcraft. Male Chauvinism is also another factor which recorded 41(17.7%) and food taboos which recorded 24(10.4%) of all responses are noted to be also cultural factors that led to scaled down use of skilled birth attendants. Some respondents felt that males dictate where their wives will give birth at as the head of the family and also as they are the custodian of the money for use during delivery. Some women of reproductive age

may find themselves limited to use TBA and who will guide them on the some feeds to eat so as to give birth without complications. Findings of this study corroborated with those of (Kamau, 2012) that the cultural factors influencing access to skilled birth attendant to be attachment to traditional birth attendance, attachment associated with dead relatives and male chauvinism. Study by Chimanker and Sahoo (2011) noted that traditional attitudes and cultural beliefs surrounding childbirth were identified as key influencer to the use of skilled care at birth.

The study sought from the respondents to describe their birthing experience with health facility staffs during their last delivery. The responses were; *very good, good, fair, poor and very poor*. The responses were summarized in table 4.17

Table 4.17: Birthing Experience with Health Facility Staffs during Your Last Delivery

Birthing Experience with Health Facility Staffs During Last Delivery	Frequency	Percentage
Very good	23	6.1
Good	69	18.4
Fair	132	35.2
Poor	113	30.1
Very poor	38	10.1
TOTAL	375	100

It was realized from the findings in table 4.17 above that most respondents 132(35.2%) claimed that most of the services in health centers are fair or average. It was noted that more responses were also skewed towards services being poor as more respondents 113(30.1%) claimed services were poor compared 69 (18.4%) who claimed that services were good. This finding implies women in reproductive age

were more uncomfortable with services offered by the health facility workers during their last delivery than being comfortable. From the interview with key informants most of them supported the idea that the maternal services provided in the health facilities were good. The results from health workers indicated that the services were good and this was indicated by increased deliveries in the health facilities since inception of free skill delivery services in government health facilities.

The study sought to find whether respondents would recommend other women who wish to give birth to the health facility they were attended. The response probed was either Yes or No. It was noted that most of the respondents (70.4%) agreed that they would recommend other women in reproductive age to the facility they gave birth in their last delivery. Only 29.6% who claimed they will not recommend the health centers they attended in their last delivery.

The study further sought to find whether women in reproductive age are still using services of traditional birth attendants in this community. Most women in reproductive age agreed that women still use the services of traditional birth attendants in the community. Only few respondents (21.9%) claimed women in reproductive age do not seek assistance of traditional birth attendants. The findings derived from interview of both health workers indicated also that women in reproductive age are seeking services of traditional birth attendants in the area of the study. The results from the FGD also clearly indicated that women in reproductive age are seeking services of TBA. The study sought to find the reason why women were using the services of traditional birth attendants in the community. The responses were summarized in table 4.18.

Table 4.18: Reasons for Women of ReproductiveAge of using the Services of TBA

Reason for Women Using the Services of TBA	Frequency	Percentage
Readily available	201	26.6
No transport expenses	154	20.4
Some myths associated with using some TBA	131	17.4
In case of emergency birth (precipitate labour)	198	26.2
Cheap	71	9.4
TOTAL	755	100

Findings in Table 4.18 indicated that the main reason for women using the services of traditional birth attendants were because they were readily available which recorded 201(26.6%) of all responses followed by in case of emergency birth which recorded 26% of all responses. This means many women in reproductive age engage TBA in cases where they go emergency labour pains simply because they can easily be reached with minimal or no cost of transport. It is noted other main reason for using services of TBA is simply because there is no transport cost which recorded 154(20.4%) of all responses. Another factor noted by 131(17.4%) of all respondents was some myths associated with using some TBA where they claim some TBA have good omen or fortune when they help women deliver such children always become successful people in lives. The aspect of the TBA being cheap unlike the skilled birth attendants was noted by 9.4% of the respondents as a factor that influence some women in reproductive age to follow suit in seeking services of TBA during delivery. Findings from the interview of both key informants and health workers indicated that distance to health facilities, cultural beliefs, lack of awareness are prompting many respondents in the area of the study not to seek service of the health workers during delivery. The data collected from FGD also indicated women in reproductive age

were seeking services of TBA because they are readily available, cheap, they are kind and there is no challenge of distance or transport.

The study also aimed to identify the dangers/complications likely to be encountered by women when they deliver at home or without assistance of skilled birth attendants. The respondents said; *“the child may die, the mother may die, the mother may develop excessive bleeding.”*KII. From the discussion between the respondents and researcher, it emerged that complications due to delivery at home or without assistance of skilled birth attendants be avoided by; *“good planning when the expectant mothers are pregnant, seeking delivery services from hospitals with trained personnel.”* KII. What are the effects of these complications to the mother, baby or family and community? The respondents pointed out that that the mother may get miscarriages, convulsion/fits, severe vaginal bleeding and foul vaginal discharge as some of danger signs respondents are aware of during pregnancy, Child mortality, risks associated with childbirth such as hemorrhagic conditions such as post-partum hemorrhage, family and community may lose their loved ones that is both the mother and the newborn child.

The study sought to get information that male is involvement in maternal health services where they are involved in planning such planning, making arrangement on time, registering for NHIF insurance cover among others. The respondents indicated women who more empowered to make their own decisions when seeking maternal health services in this community and those not necessary need men to make decisions. The discussion also reviewed that there are cultural/religious beliefs which hinder women from accessing skilled delivery services in this community. These included; Practices associated with the witchcraft, Food taboos, Attachment to traditional birth attendants, Male chauvinism and Attachment associated with dead

relatives. The respondents 'rated the services offered in public health facilities in this area as moderate. Finally, the respondents suggested that the government to do a lot of health education, seminars, build more hospitals, construct better roads, provide more equipment for maternity, improve referral systems and employ more health care personnel in order to improve uptake of skilled delivery in this area.

4.5.2. Distribution of Socio-Cultural and Economic Factors against Utilization of Skilled Birth Attendants (SBAs).

The study sought to find how characteristics of Socio-Cultural and Economic Factors influenced utilization of SBAs which was summarized in table 4.19

Table 4.19: Distribution of Socio-Cultural and Economic Factors against Utilisation of SBA

Distribution of Independent Variables against Delivery by SBAs (n=375)	Delivery by SBAs n (%)	Delivery by Unskilled Birth Attendants n(%)	χ^2 (df) P value
Age category			
Below 19	26 (45.6)	31 (56.4)	$\chi^2 = 0.79307(3)$ p=0.08511
20-29	84 (49.1)	87 (50.9)	
30-39	54 (45.8)	64 (54.2)	
Above 40	12 (41.4)	17 (58.6)	
Level of Education			
Primary	73(34.4)	139(65.6)	$\chi^2 = 21.554(3)$ p=0.0005
Secondary	58(52.3)	53(47.7)	
Tertiary	32(66.7)	16(33.3)	
None	1(25.0)	3(75.0)	
Marital status			
Married	136 (57.4)	101(42.6)	$\chi^2 = 6.475(3)$ p=0.0091
Single	43(45.7)	51(54.3)	
Separated	12(42.9)	16(57.1)	
Divorced	6(37.5)	10(62.5)	
Religion			
Protestant	108(47.2)	121(52.8)	$\chi^2 = 8.112(3)$ p=0.00437
catholic	55(43.3)	72(56.7)	
Muslim	3(75)	1(25)	
Others	2(13.4)	13(86.6)	
Status of employment			
Unemployed	76(24.6)	232(75.4)	$\chi^2 = 69.851(1)$ p=0.0001
Employed	53(79.1)	14(20.9)	
Income per month			
<5000	71(25.9)	203(74.1)	$\chi^2 = 21.472(3)$ p=0.0001
5,001-10,000	16(35.6)	29(64.4)	
10,001-20,000	21(55.3)	17(44.7)	
<20,000	11(61.1)	7(38.9)	
Number of children			
One	67(61.5)	42(38.5)	$\chi^2 = 1940.7(3)$ p= 0.0001
Between 2-3	106(60.2)	70(39.8)	
Between 4-5	68 33(48.5)	35(51.5)	
6 and above	22 7(31.8)	15(68.2)	

*p values are statistically significant (P<0.05)

From the study, it was noted that there was no significant relationship between age and delivery by skilled birth attendants ($\chi^2 = 0.79307$, d.f = 3, p=0.00851, $\alpha = 0.005$) since at 0.05% level of significance is more than $\chi^2 = 0.79307$. This implies that age doesn't matter in the access of SBA. There is significant relationship between level of education and access to SBA ($\chi^2 = 21.554$, d.f = 3, p=0.0005, $\alpha = 0.005$) at 0.05% level of significance. This means that the level of education of women in reproductive age matters a lot in making informed decision of seeking medical care such as services of skilled birth attendants.

Utilization of SBA was noted not to be significantly depend on marital status of the women in reproductive age as depicted by chi square test ($\chi^2 = 6.475$, d.f = 3, p=0.0091, $\alpha = 0.005$). This implies that the marital status of women in reproductive age doesn't influence whether the woman in reproductive age will use skilled birth attendants during delivery. This is because table chi-square is greater than $\chi^2 = 6.475$ meaning there is no dependence between either utilizing or not utilizing SBA and the independent variable which is marital status. On issues of religion was noted to be significant to utilization of SBA ($\chi^2 = 8.112$, d.f = 3, p= 0.00437, $\alpha = 0.005$). This meant that depending on religion beliefs which one holds will dictate whether a person will utilize SBA during delivery.

Test of whether status of employment influenced utilization of SBA attendants indicated that there was a strong relationship ($\chi^2 = 69.851$, d.f = 1, p<0.0001, $\alpha = 0.005$). This implied whether employed or not will influence the level of utilization of skilled birth attendants. The study also noted strong relationship between level of income and utilization of SBA ($\chi^2 = 21.472$, d.f = 3, p= 0.0001, $\alpha = 0.005$). This meant the level of

income which women in reproductive age which determine the level at which they will utilize SBA. To test whether the number of children per respondent had any influence on utilisation of SBA, the study noted a strong relationship where number of children will depend on whether women in reproductive age will access SBA ($\chi^2=1940.7$, d.f=3, $p<0.0001$, $\alpha=0.005$).

In summary most chi-square test noted there was association between demographic factors (socio-economic factors) and access to SBA in the area of the study. It is only age and marital status which were noted not dependent on when it comes to utilization of skilled birth attendants in the area of the study.

4.5.3. Correlation analysis between socio-cultural and economic factors and utilization of SBAs

In this section a summary of the correlation analyses to determine the degree of association between socio-cultural and economic factors with the dependent variable which is utilization of skilled birth attendants. The independent variable for the study which is socio-cultural and economic factors included: religion, sex, age, marital status, illiteracy and birthing experience; distance from health facility, transport cost, financial constraints and poor infrastructure. These results are summarized in Table 4.20.

Table 4.20: Correlation analysis between socio-cultural and economic factors and utilization of SBAs.

Variables			Socio-cultural and economic factors	Utilisation of free SBAs
Socio-cultural& economic factors	Pearson		1.000	0.741
	Correlation			
	Sig. (2-tailed)			.000
	N		375	375
Utilisation of free SBAs				
			0.741	1.000
	Sig. (2 -tailed)		.000	
	N		375	375

*Correlation is significant at the 0.05 (2-tailed)

The correlation summary shown in Table 4.20 indicated that the associations between independent variables (Socio-cultural and economic factors) and dependent variable (Utilization of SBAs) were significant at 95% confidence. This findings noted there was relationship between socio-cultural and economic factors and utilization of free skilled birth attendants shown a relationship exists ($r=0.741$, $\alpha=0.05$). The Karl Pearson's product moment coefficient of correlation $r=0.741$ suggests that a strong positive relationship existed between the two variables. This means that the aspects of socio-cultural and economic factors which include religion, sex, age, marital status, illiteracy and birthing experience was very important and gave direction to whether women in reproductive age in accessed free services of skilled birth attendants. The study hence suggest that socio-cultural and economic factors that jeopardizes access to free skilled birth attendants need to be discouraged to access to free skilled birth attendants while at the same time those factors encouraging access to free skilled birth attendants need to be encouraged. It should be noted in Kitui south sub county still

some people are attached to deep rooted cultural practices and believes which are quagmires to access to free skilled birth attendants at health facilities which need to be countered.

4.5.4. Regression Analysis between Socio-Cultural and Economic Factors and Utilization of SBAs

Regression analysis was used to determine the significance of the relationship between the dependent variable (Utilization of SBAs) and the independent variable (social economic factors all pooled together). The value obtained for R, which is the model correlation coefficient, $R = 0.874$ which was higher than any zero order value in Table 4.22. The R-square value 0.764 also indicated that all the independent variables combined accounted for up to 76.4% of the changes in access to free skilled birth attendants in the regression model. A summary of the multiple linear regression analysis correlation coefficients is given in Table 4.21.

Table 4.22: Linear Regression Analysis Model Summary on Socio-Cultural and Economic Factors and Utilization of SBAs

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.874 ^a	.764	.645		6.3481

a. Predictors: (Constant), socio-cultural factors and economic factors.

Summary of the linear regression analysis correlation coefficients was presented in the Table 4.22.

Table 4.23: Linear Regression Results on Socio-Cultural and Economic Factors and Utilization of SBAs

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Part	Tolerance	VIF
(Constant)	.848	.522		6.693	.007			
Soio-cultural and economic factors	.346	.139	0.512	2.488	.089	.131	.992	1.008

a. Dependent Variable: Access to free skilled birth attendants

The beta value was used to determine whether the independent variable was important on access to free skilled birth attendants in Kitui south sub county in Kitui County. It was deduced from the findings in Table 4.22 that the aspects of socio-cultural and economic factors ($\beta = 0.512$) was important. These aspects include demographic aspects like marital status, religion, sex, age, and illiteracy level, level of employment among other socio-cultural and economic factors. This implies that the dependent variable (utilization of free skilled birth) would change by a corresponding number of standard deviations when the independent variable (Socio-cultural and economic factors) change by one standard deviation. These findings imply that socio-cultural and economic factors are all very crucial in the access to and utilization of free skilled birth attendants in public health facilities in Kitui south sub-county.

4.6 Health System Factors Influencing Utilization of Skilled Birth Attendants

4.6.1. Factors leading to poor access to GOK health facilities by women during delivery

The study sought to know why women don't like using GOK health facilities when giving birth in the community. The responses were summarized in figure 4.2

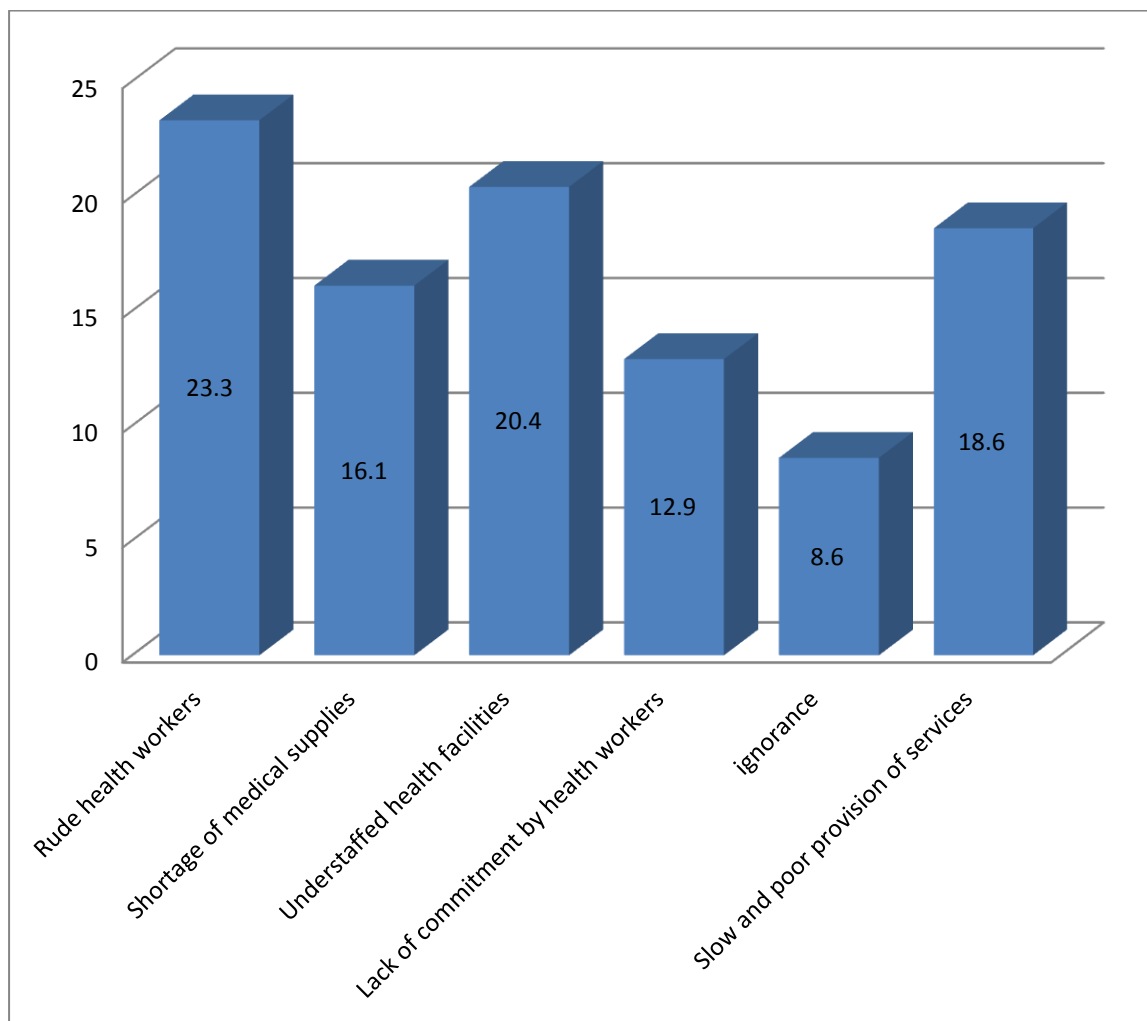


Figure 4.2: Why Women don't like using GOK Health Facilities when Giving Birth

According to findings in figure 4.2 rude health workers and understaffed health facilities were the main factors which made many women in reproductive age not to use GOK health facilities when giving birth which made 265(23.3%) and 232(20.4%)

respectively. Slow and poor provision of health service and shortage of medical supplies which had 211(18.6%) and 183(16.1%) of all responses were also noted to be main factors leading to failure of women in reproductive age giving birth in public or government facilities. Other factors include lack of commitment by health workers and ignorance which scored 12.9% and 8.6% of all responses respectively.

During the FGD, the respondents were asked whether they understood who are referred to as skilled birth attendants. Some of them seem to understand and others seemed not to understand. They indicated that skilled birth attendant is any person who is able to attend a mother while giving birth regardless of educational background or training. However, the other group of the interviewees knew who skilled birth attendants. They described them as trained personnel who are able to attend to an expectant mother while giving birth and are able to detect any complications, manage and refer them appropriately. The respondents were further interviewed on the importance of hospital/health facility delivery. All seemed to understand the importance of hospital/health facility delivery. One respondent in FGD *“hospital/health facility delivery are places set for mothers to go and give birth under watch of a skilled and experienced personnel such as in maternity unit”* the researcher further asked how soon a woman start attending Antenatal clinic?” *“A woman need start attending Antenatal clinic soon as she discovers she is pregnant, and Antenatal visits should a mother attend before she delivers is at least five or six times”* they explained during the interviews and FGD.

During the FGD and interviews, the researcher wanted to know the problems/factors hindering women from attending health facility for skilled delivery services when in labour in the community. Their answers were as follows; *“health facilities not readily available, there are transport expenses, using traditional birth attendants are*

comfortable, in case of emergency birth, and there other alternatives which were Cheap and available health facilities are not open 24hours”KII

During the FGD, researcher enquired on why some women didn’t attend the recommended four ANC. The respondents reported that, long distances from our households to health facilities is a hindering factor, ignorance of the mothers, slow and poor provision of services in health centers to be the leading factors towards poor ANC visits.

During the FGD, the researcher also investigated why some women don’t deliver in health facilities despite the services being free.

“There are rude health workers in health centers, long distance between the nearest health facilities from home, using traditional birth attendants are comfortable, in case of emergency birth, there other alternatives which were Cheap, there are transport expenses, Means of transport hardly available, Shortage of medical supplies in health centers, Amount paid for transport to the health facility is high, understaffed health facilities, Lack of commitment by health workers in health centers, Ignorance of the mothers, Slow and poor provision of services in health centers”’. FGD participant.

4.6.2. Distribution of Delivery Services Characteristics against Utilization of Skilled Birth Attendants (SBAs).

The study sought to find how characteristics of delivery services influenced utilization of SBA. The information showing characteristics of delivery services against utilization of SBA was summarized in table 4.23

Table 4.23: Characteristics of Delivery Services Aspects against Utilization SBAs

Distribution of Independent Variables against Delivery by SBAs (n=375)	Delivery by SBAs n (%)	Delivery by unskilled birth attendants' n (%)	χ^2 (df) P value
Where the last baby was born			
Hospital	247 (100)	0(0)	$\chi^2 = 308.51(3)$ $p < 0.0001$
Home	11(12.6)	76 (87.4)	
On the way to hospital	4 (15.4)	22 (84.6)	
Any other place	1 (6.7)	14 (93.3)	
Mode of delivery			
SVD (Spontaneous Vaginal Delivery)	183 (65.8)	95(34.2)	$\chi^2 = 42.606(1)$ $p = 0.0001$
CS (Caesarean section)	97 (100)	(0)	
Those who assisted the respondents during last delivery			
Nurse/ midwives	232 (100)	0(0)	$\chi^2 = 360.59(4)$ $p < 0.0001$
Doctors / clinical	92 (100)	0(0)	
TBA (Traditional Birth Assistant)	0 (0)	36(100)	
Relative/ neighbour	2 (18.2)	9(81.8)	
Self /Un assisted	0 (0)	4(100)	
Who made decision on place of delivery			
Self	152(80.4)	64(29.6)	$\chi^2 = 8.1382(3)$ $p = 0.00432$
Husband/ partner	93(80.5)	39(29.5)	
In-laws	6(50.0)	6(50.0)	
Other person	6(40.0)	9(60.0)	
Cost incurred on the delivery services			
Less than 500	45(39.8)	68(60.2)	$\chi^2 = 52.057(4)$ $p = 0.0013$
1000	59(79.7)	15(20.3)	
1001-2000	47(79.7)	12(20.3)	
1001-2000	36(90.6)	7(19.4)	
Over 2001	51(54.8)	42(45.2)	
Did not pay anything			
Who paid for the delivery services			
Self	25(51.1)	24(48.9)	$\chi^2 = 169.68(4)$ $p < 0.0001$
Partner/husband	37(46.8)	42(53.2)	
Insurance (NHIF)	24(100)	0(0)	
Government(OBA vouchers)	196(100)	0(0)	
Others (Specify)	6(22.2)	21(77.8)	

*p values are statistically significant ($P < 0.05$)

It was noted that there was significant relationship between where the last baby of women in reproductive age was born and utilization of skilled birth attendants ($\chi^2 = 308.51$, d.f=3, $p=0.0001$, $\alpha=0.005$). This implies that where child will be born be it hospital, home, on way to hospital or any other place will determine whether they will

use SBA or not in subsequent pregnancies. It was noted that mode of delivery by women in reproductive age were noted to matter on whether they will utilize SBA as noted by chi square test ($\chi^2=42.606$, d.f=1, $p=0.0001$, $\alpha=0.005$).

The chi square test results indicated that those who assisted the women in reproductive age during last delivery matter on whether there is use of SBA or not as indicated by ($\chi^2=360.59$, d.f=4, $p=0.0001$, $\alpha=0.005$).

Decision makers on place of delivery was noted to have relationship with level of utilisation of SBA as Chi square test of dependence indicated high dependency ($\chi^2=8.1382$, d.f=3, $p=0.00432$, $\alpha=0.005$). This means some people may make decision skewed towards use or not use of SBA. It was noted that cost was incurred on the delivery services in shillings had influence on use of SBA during delivery ($\chi^2=52.057$, d.f=4, $p=0.0013$, $\alpha=0.005$). It was found also those who pay for delivery services matters in determining whether they utilize SBA during delivery ($\chi^2=169.68$, d.f=4, $p<0.0001$, $\alpha=0.005$). This means that in the area of the study whoever is paying for delivery services will influence whether they will use SBA during delivery. The study sought to establish health system factors which influence utilization of free skilled birth attendants. These factors reported by respondents included: distance between the nearest public health facilities from the respondent's home, means of transport and amount paid for transport to the health facility. The information was reported in table 4.24.

Table 4.24: Characteristics of Health System Factors

Health system factors	Frequency N=375	Percentage
Distance between the nearest health facilities from home		
0-5 km	79	21.1
5-10km	173	46.1
Over 10 km	101	26.9
Don't know	22	5.9
Means of transport		
Bodaboda	159	42.4
Walking	56	14.9
Bicycle	39	10.4
Taxi	31	8.3
Public transport	90	24
Amount paid for transport to the health facility (one way)		
Less than 50 ksh	92	24.5
50 -100 ksh	142	37.9
100 -200	68	18.1
Over 200	49	13.1
Did not pay anything	24	6.4

It was found that almost half of the respondents (46.1%) said that their distance from home to the nearest public health facility was between 5 to 10 kilometers. About a quarter (26.9%) reported the distance from home to health facility was above 10 kilometers with 21.1% saying they were near the health facility by less than 5 kilometers. This implies that the distance between home and health facility was not within reach of the women in reproductive age. It was noted from the findings that most key informants and health workers that distance is a challenge in accessing free skilled birth attendant's services.

The findings indicated that the common means of transport used by women in reproductive age to health facilities to be boda-boda which recorded 42.4% of all responses followed by those who said they used public transport by buses to health facilities who recorded 24% of the total responses. It was also noted that 14.9% of the

women in reproductive age walk to health while those who use bicycle and taxi are 10.4% and 8.3% respectively. This implies that boda-boda has become common mode of transport in the region while those coming from far places using public transport.

Most of the respondent's responses were inclined towards transport payment of 50-100 shillings which was supported by 37.9% followed by 24.5% who reported paid less than 50 shillings. It was noted that those who pay between 100 to 200 shillings were 18.1% while 13.1% claimed they paid over 200 shillings for one way. Only 6.4% reported to having not paid anything for transport.

4.6.3. Health Systems Characteristics against Utilization of SBAs

The study sought to determine the dependence between the health system factors and utilization of Skilled Birth Attendants during delivery by women in reproductive age. The summary was summarized in table showing frequency of using SBA or not using against health system factors as show in table 4.25.

Table 4.25: Health Systems Characteristics against Utilization of SBA

Distribution of Independent Variables against Access SBAs	Delivery by SBAs n (%)	Delivery by unskilled birth attendants n(%)	χ^2 (df) P value
Independent Variables (n=375)			
Distance to the nearest health facilities from home			
0-5 km	38(49.1)	41(51.9)	$\chi^2 =7.1821(3)$ p=0.06631
5-10km	71(41.1)	102(58.9)	
Over 10 km	33(32.7)	68(67.3)	
Don't know	5(22.7)	17(77.3)	
Means of transport			
Bodaboda	73(45.9)	86(54.1)	$\chi^2 =11.245(4)$ p=0.00023
Walking	17(30.4)	39(69.6)	
Bicycle	12(30.8)	27(69.2)	
Taxi	19(61.3)	12(38.7)	
Public transport	42(46.7)	48(53.3)	
Amount paid for transport to the health facility			
Less than 50 ksh	33(35.9)	59(64.1)	$\chi^2 =18.999(4)$ p=0.00079
50 -100 ksh	69(48.6)	73(51.4)	
100 -200	36(52.9)	32(47.1)	
Over 200	18(36.7)	31(63.3)	
Did not pay anything	2(8.2)	22(91.7)	
What respondents have heard from the community on maternity services in public health facilities			
Good	41(64.1)	23(35.9)	$\chi^2 =49.708(3)$ p=0.000092
Average	99(51.3)	94(49.7)	
Bad	11(13.4)	71(86.6)	
Don't know	10(27.8)	26(72.2)	
Whether the nearby public health facility operate 24 hours a day for maternity services			
Yes	32(74.4)	11(35.6)	$\chi^2 =44.194(2)$ p=0.00025
No	57(24.7)	174(75.3)	
Don't know	1(9.1)	10(90.9)	
Whether they missed delivery service in your nearest health facility			
Yes	68(33.5)	221(76.5)	$\chi^2 = 69.93(1)$ p<0.0001
No	63(73.2)	23(26.8)	

*p values are statistically significant ($P < 0.05$)

It was noted that there was no significant relationship between distance to the nearest health facilities from home of women in reproductive age and utilization of skilled birth attendants ($\chi^2 = 7.1821$, d.f =3, $p=0.06631$, $\alpha =0.005$). This implies that the distance to the nearest health facilities from home may not matter to level of utilization of SBA. It was noted P value was too high than the expected implying distance doesn't matter so much.

The study noted there was significant relationship between the means of transport and utilisation of SBA in the area of the study as noted ($\chi^2 =11.245$, d.f =4, $p=0.00023$, $\alpha =0.005$). This means the means of transport that women in reproductive age use to the health facility matter in whether they will be in position to access service of SBA during delivery.

It was also noted that the amount paid for transport to the health facility matter on whether women in productive age will access services of SBA during delivery as noted by chi square results ($\chi^2 =18.999$, d.f = 4, $p=0.00079$, $\alpha =0.005$). This implies that the amount paid for transport may influence whether the women in reproductive age will access services of SBA during delivery.

It was discovered in the study that what women in reproductive age hear from the community on maternity services matter on whether they will utilize free Skilled Birth Attendants ($\chi^2 =49.708$, d.f =3, $p=0.000092$, $\alpha =0.005$). This implies that women in reproductive age who hear on free SBA are likely to be attended by SBA. It was also found that when the nearby public health facility operate 24 hours a day for maternity services it will influence whether they utilize SBA in the area of the study during delivery ($\chi^2 =44.194$, d.f =2, $p=0.00025$, $\alpha =0.005$). This means if the nearby health facilities open 24 hours daily it means access to SBA will increase. In

establishing the relationship between whether women in reproductive age missed delivery service in the nearest health facility, it was noted there was a strong relationship and the dependence of the two variables ($\chi^2 = 69.93$, d.f=1, $p < 0.0001$, $\alpha = 0.005$). This means that by women in reproductive age missing services in nearby health facility it had direction on level of utilization of SBA by those women.

4.6.4. Correlation Analysis between Health System Factors and Utilization of SBAs

In this section, a summary of correlation analyses between health system factors and utilization of SBAs to determine the degree of their dependence was done. The independent variable was health system related factors which include poor health facilities, inadequate supplies, staff attitude, in adequate referrals and how these factors is associated to utilization of free skilled birth attendants. These results are summarized in Table 4.26.

Table 4.26: Correlation Analysis between Health System Factors and Utilization of SBAs.

Variables		Health system factors	Utilisation of free SBAs
Health system factors	Pearson	1.000	0.697
	Correlation		
	Sig. (2-tailed)		0.004
	N	375	375
Utilisation of free SBAs		0.697	1.000
	Sig. (2 -tailed)	.004	
	N	375	375

*Correlation is significant at the 0.05 (2-tailed)

A correlation analysis shown in Table 4.28 determined whether there was a significant association between health system factors and access to free skilled birth attendants. The study found there is a strong relationship which exist between health system factors and access to free skilled birth attendants ($r=0.697$, $\alpha=0.05$). This implies that health system factors which include poor health facilities, inadequate supplies, staff, staff attitude and in adequate referrals influence how women in reproductive age access services of free skilled birth attendants. According to the findings, it means that in Kitui south sub county there are issues related to health systems which have strong relationship on how women in reproductive age access free skilled birth attendants in public health facilities thus such factors need to be put in consideration while planning on how to improve access to free skilled birth attendants in health facilities in Kitui south sub county.

4.6.5. Regression Analysis between health system factors and the utilisation of SBAs

Multivariate regression analysis was used to determine the significance of the relationship between the dependent variable (Utilization of SBAs) and all the aspects of health system factors pooled together (independent variables). The value obtained for R, which is the model correlation coefficient, $R = 0.829$ which was higher than any zero order value as indicated in Table 4.29. The R-square value 0.687 also indicated that all the health system factors (independent variables) combined accounted for up to 68.7% of the changes in access to free skilled birth attendants in the regression model. A summary of the multiple linear regression analysis correlation coefficients is given in Table 4.27.

Table 4.27: Linear Regression Analysis Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.829 ^a	.764	.565		6.3481

a. Predictors: (Constant): Health system factors.

Summary of the multiple linear regression analysis correlation coefficients was presented in the Table 4.28

Table 4.28: Linear regression results

	Unstandardized Coefficients		Standardized Coefficients		T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Part Tolerance	VIF
(Constant)	.848	.522			6.693	.007		
Health system factors	.362	.089	0.486		3.837	.062	.765 .212	4.716

a. Dependent Variable: Access to free skilled birth attendants

To determine whether independent variable (health system factors) is important on access to free skilled birth attendants in Kitui south sub county in Kitui County regression analysis was done. Health system factors like poor health facilities, inadequate supplies, staff, staff attitude and in adequate referrals was important factors with ($\beta = 0.486$). This implies that the dependent variable which is access to free skilled birth attendants would change by a corresponding number of standard deviations when the health system factors (independent variables) change by one standard deviation. These findings imply that health systems factors are all very

crucial in that order to the access to free skilled birth attendants in public health facilities in Kitui south sub-county.

4.7 Strategies to Improve Utilization of Skilled Birth Attendants

The study sought to find out strategies on improving the level of utilization of free skilled birth attendance in public health facilities in Kitui south sub county. The study sought the opinion of respondents on what should be done to scale up utilization of skilled birth attendants in the community. The responses were summarized in table 4.29

4.29 Strategies to Scale up Utilization of Skilled Birth Attendants

Strategies to Scale up Utilization of Skilled Birth Attendants	Frequency	Percentage
Employment of more skilled health workers	235	22.7
Increasing number of health facilities	271	26.2
Awareness on use of skilled birth attendants	122	11.8
Increasing supplies and facilities in hospital	206	19.9
Training health workers on customer care	101	9.8
Increasing referral centers for emergencies	98	9.5
TOTAL	1,033	100

From the findings in Table 4.29, the respondents indicated that to scale up utilization of skilled birth attendants there should be increased number of health facilities as supported by 271(26.2%) of the respondents which was followed by employment of more skilled health workers which recorded 235(22.7%) of all responses. It is also noted having increased supplies and facilities in hospital to be a factor which will scale up use if skilled birth attendants as noted by 206(19.9%) of the respondents. It is

also recommended that there should be awareness on use of skilled birth attendants as noted by 122(11.8%). Other factor recommended to improve use of skilled birth attendants is training health workers on customer care and handling which recorded 101(9.8%) and lastly increasing of referral centers for emergencies which scored 98(9.55%) of all respondents.

It was noted from the key informants and health workers who were interviewed that access to skilled birth attendants can be improved by continued health education, forums such as communitybarazas to talk about reproductive health, staffing health facilities with skilled personnel who are competent, ensuring there is good supplies and equipment in health facilities, improving referral system in health facilities.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussions of the results

5.1.1 Level of utilization of SBAs by women of reproductive age

Kenya is moving fast in ensuring there is increased access to skilled delivery services. This is done in order to reduce maternal and neonatal mortality during labour and after delivery which was very rampant before the year 2000 when Kenya adopted the Millennium Development Goal. As world evaluated MDGs and agreed on Sustainable Development Goals (SDGs), it advocated for healthy lives, promotion of wellbeing for all at all ages and reducing the global maternal ratio to less than 70 per 100,000 live births by 2030 (UN, 2015). In Kenya pregnancy-related complications constitute the principal causes of morbidity and mortality amongst women, translating to 362 maternal deaths per 100 000 live births (Banke-thomas et al., 2020).

Findings from the study indicated that 94.0% of women in reproductive age had sought services in public health facilities in Kitui south sub county. Almost all women in reproductive ages that is 98.1% had attended antenatal care. This means that all women in reproductive age were well informed on the importance of antenatal care and thus why the attendance was almost 100%. The study found that 92.5% of women in reproductive age had heard of free skilled delivery services and actually 70.4% of women in reproductive age thought that free delivery services in public health facilities have been of help in ensuring utilization of skilled birth attendants. These results were in line with the results of the KDHS 2014 where antenatal attendance was a high of 92% (KDHS, 2014).

There are various services offered in public health facilities to women in reproductive age. 35.7% of the women said that maternal child health care was main service offered in health followed by antenatal care rated at 25.1%. This means that most of services offered to women in reproductive age in the area of study are related to health of both unborn child and infants and the mothers. Outpatient services which help to mitigate other ailments related to health of children and mothers which are not serious which are managed and then both mother and child goes home the same day in absence of complications. Health workers in public health facilities confirmed that maternal health services ranging from antenatal care, maternity services, child health and prevention of mother to child HIV transmission were common services offered in those facilities.

Health workers who participated in the study said that in average 20-30 women in reproductive age attended ANC clinics daily in each of the public health facilities. This is good indicator that women in reproductive age are utilizing maternal health services in Kitui south sub county. It was noted that nationally utilization of skilled birth attendants stands at 62% with Kitui county accounting for 46% by mothers during child birth as at 2012, however according to DHIS in 2016 SBA Nationally was at 82% with a drop in Kitui county to 42%. Skilled attendant at birth is one of the actions that improve women's and newborn's chances of survival during pregnancy and childbirth in low-income countries (DHIS, 2016).

Almost half (48%) of the respondents had attended antenatal clinic between 2-3 times in their last pregnancy followed closely by those who responded that they had attended clinic more than 4 times who were 37%. Smaller percentage of 13% had attended ANC clinic once. Findings from FGD women showed that most women attended clinic mostly twice or once during their pregnancy. The number of

attendance was lower than WHO recommendations of four comprehensive personalized visits one of which should be in the first trimester before 16 weeks gestation (WHO, 2019).

Timing for ANC clinic attendance is very important as most of complications are noticed early and interventions are put in place. Findings from the study showed trends of few number attended clinic at late gestation stage of pregnancy that is 7-9 month (third trimester) at 7.5%, whereby 25.1% said they started attending clinic at 4-6 month (second trimester) with those starting ANC clinic in the first trimester (1-3 months) were at 63.2%.

During pregnancy some women experience some danger signs. Findings from the study found that most women knew of danger signs during pregnancy which may include: severe headache, mood swings and high fever where 24%, 22% and 13% respectively. Other danger signs which women in reproductive age knew included severe vaginal bleeding and foul vaginal discharges. Most women in reproductive age 38.2% knew how to respond to danger signs through seeking medical attention in case of any danger signs during pregnancy and 20.2% requesting for referral to higher levels of care. Seeking of first aid, good care and hygiene were also noted be some of important measures in managing danger signs during pregnancy.

It was noted that every pregnancy is at risk of serious life threatening complications hence every pregnant woman should be prepared for pos Service providers should share information with women in reproductive age on expected date of delivery for early preparation during the ANC Clinics. Actually 90.1% of women reported to have received information on expected date of delivery from the service providers during their ANC visits. This implies most respondents were prepared during delivery as

they already knew the expected date of delivery. In fact, service provider discussed with the mothers on individual birth preparedness which included among them; how to get money in case of emergency, transport plans, identification of decision maker during emergency, identification of birth place, birth partner/companion during delivery and mother-baby package. The decision on place of delivery was mostly made by women in reproductive age with one third claiming husband or partners made the decision. This means mostly in the area of the study decision on place of birth is mostly done by pregnant mothers or their companions.

Access to skilled birth attendants may be influenced by where children are born. When born in hospital it implies they were attended by skilled birth attendants. 65.9% of children were born in hospital meaning almost two thirds of all women who give birth do it in the hospital. Only 23% of the respondents who give birth at home with 6.9% of respondents reported they gave birth on their way to hospital.

The mode of delivery by most women in the area of the study (74.1%) was through spontaneous vaginal delivery with only one quarter delivering through caesarean section. WHO recommendations on rate of caesarean section should range between 5 to 15% of the total deliveries in a given region (WHO, 2019).

During delivery almost two thirds of women in reproductive age were assisted in their delivery by nurse or midwives with 25% being assisted by clinical officer or doctors especially those who underwent the caesarean section during their birth. 10% of women in reproductive age reported they were assisted by traditional birth attendants with 3% being assisted by relatives. This implies that most respondents delivered in hospital where there are skilled birth attendants while the others it delivered at home relied mostly on traditional birth attendants or relatives.

5.1.2 Socio-cultural and economic factors influencing access to SBAs

The study found that there is association between socio-cultural, demographic and economic factors and access to free skilled birth attendants which was rated at 74.1% ($r=0.741$, $\alpha=0.05$) while regression analysis indicated strong relationship at 76.4%. This suggested a strong positive relationship existed between the two variables. This means that the aspects of socio-cultural and economic factors which include: religion, sex, age, marital status, illiteracy and birthing experience was very important and gave direction to whether women in reproductive age utilized free services of skilled birth attendants. This portrayed that those factors contributed heavily on accessibility to free skilled delivery services in public health facilities implying that these are not factors that can be underrated when planning on how to improve the utilization of skilled birth attendants in health facilities in the area of the study. Any socio-cultural and economic factor that jeopardizes utilization to free skilled birth attendants need to be mitigated to utilize free skilled birth attendants while those factors promoting utilization of free skilled birth attendants need to be reinforced.

In terms of age, it was noted from the study that 45.6% of the women in reproductive age were aged between 20 and 29 years followed by 31.5% of the women who were noted to be aged between 30-39 years. It was noted from the study that there was no significant relationship between age and delivery by skilled birth attendants ($\chi^2 = 0.79307$, d.f = 3, $p=0.0851$, $\alpha = 0.005$). This implies that age doesn't matter in the access of SBA. In terms of education, 56.6% had primary school level of education with those with secondary education following at distance 29.6%. This means most women in reproductive age were young that is below 30 years and had mostly primary level of education translating to low transition to tertiary institutions. Women who are more educated are likely to be attended by skilled birth attendants as compared to

the low educated women. There is significant relationship between level of education and access to SBA ($\chi^2=21.554$, d.f=3, $p=0.0005$, $\alpha=0.005$). This means that the level of education of women in reproductive age matters a lot and depends on their level of education. This observation is corroborating with study by (Langat et al., 2019) who observed that women's education or literacy levels to be strongly associated with use of reproductive health and maternal health services. The study found out that women with basic education have knowledge to make informed decisions on place of delivery. Kilonzo (2017) noted that women with lower education had low chances of using available services due to misinformation. Another study supporting the relevance in access to skilled birth attendants by Sidze (2017) indicated that Maternal Mortality Rate (MMR) was high among uneducated women compared to literate mothers..

Marital status may influence access to skilled birth attendants by women in reproductive age. The study found out that 63.2% were married, 21.1% were singles, separated were 7.5% with divorcees being 4.3 %. Utilization of SBA was noted not to be significantly depend on marital status of the women in reproductive age as depicted by chi square test ($\chi^2=6.475$, d.f = 3, $p= 0.0091$, $\alpha=0.005$). For married couples decisions are shared amongst all equally in cases where there is sole decision maker on the issue of access to skilled birth attendants as witnessed in single, separated and divorced persons.

Religion is fundamental in relation to utilization to SBA. Religion was noted to be significant to utilization of SBA ($\chi^2=8.112$, d.f =3, $p= 0.00437$, $\alpha=0.005$). Christians where majority at 94% whereby 61% were Protestants and 33.9% were Catholics. The other religions who mostly are traditionalist covered 4% with Muslims covering

1.1% of the respondents. The religion gave bearing in this study in that some practices done in certain religion influence whether people will access skilled birth attendant or not. For instance in traditional African culture and practice there is cultural practices attached on use of traditional birth attendance unlike using skilled birth attendants in health facilities.

They kind of work women in reproductive age do may influence how they access services of skilled birth attendants in health facilities. Test on whether status of employment influenced utilization of SBA attendants indicated that there was a strong influence. Actually, 82% had no formal employment which is attributed to high illiteracy in the area with most women in reproductive age having reached only primary education level. The study also noted strong relationship between level of income and utilization of SBA ($\chi^2 = 21.472$, d.f=3, $p= 0.0001$, $\alpha =0.005$). In terms of monthly income 73.1% of women in reproductive age had average monthly income of below 5000 shillings by small percentage who earns between 5,000-10,000 shillings with only negligible 4.8% earning above 20,000 shillings who are employed on white collar and government jobs. This implies that majority of the women in reproductive age in Kitui south sub county earn less than a dollar a day. The findings corroborate with WHO (2019) report indicating that the level of income and set up of a given region; that is, rural or urban, plays a role when it comes to these death rates. It is noted that most maternal and neonatal deaths can be avoided if women had access to appropriate skilled maternal services during pregnancy, labour and postnatal period which can be limited by the level of income of the people (Sidze, 2017).

The number of children a woman has may be related to access to free skilled birth attendants in health facilities. The study noted a strong relationship where number of

children will depend on whether women in reproductive age will access SBA ($\chi^2=1940.7$, d.f =3, $p<0.0001$, $\alpha =0.005$). From the study almost half of the respondents (47%) of women in reproductive ages had 2-3 children. 29% of women in reproductive age had one child. Only 6% had more than four children. This implies that most respondents were knowledgeable about family planning and utilized available family planning methods that's why they have a sizeable number of children. Findings by Calhoun *et al* (2018) corroborate with the study where it found that women with 2-4 children were more likely to utilize skilled care at birth compared to women who had only one child. Conversely current reports show that less than 61.8% of all deliveries in Kenya are attended by skilled health personnel annually (Owuor & Amolo, 2019).

Cultural factors influence the level of access of skilled birth attendants by women in reproductive age. Actually over three quarters of women in reproductive age reported there were no cultural factors barring them from accessing skilled birth attendants. Attachment to traditional birth attendance was noted by 27% of women to be main cultural practice followed by attachment associated with dead relatives to main factors limiting access to skilled birth attendants. Believe in witchcraft has prevented some women from going to health facilities to get skilled delivery services where they believe using TBA their children get protected with charms to avoid witchcraft. Male Chauvinism, low male involvement and food taboos have contributed to low utilization of skilled birth attendants in that male may dictate where their wives should give birth, whether at home under care of TBAs or in health facilities.

The study noted socioeconomic factors like distance from health facility, transport cost, financial constraints and poor infrastructure had great influence on access to free skilled birth attendants in public health facilities. It should be noted that according to

Dennis et al., (2019) population census most people in Kitui south constituency live with less than a dollar thus with distance to health facilities being almost more than 10 kilometers and with financial constraints high transport cost jeopardizing access to free skilled birth attendants in public health facilities.

It was noted that there were no significant relationship between distance to the nearest health facilities from home of women in reproductive age and utilization of skilled birth attendants ($\chi^2 = 7.1821$, d.f =3, $p=0.06631$, $\alpha =0.005$). This differed from findings by Borghi (2003) which noted that women's access to and utilization of maternity services can be limited by distance to health facilities and the cost of transport Findings from the study population showed that 46.1% of women their distance from home to the nearest public health facility was between 5 to 10 kilometers with 26.9% staying more than 10 kilometers with only one fifth who were near the health facility by less than 5 kilometers which is the recommended distance by WHO (WHO, 2019).

The study noted there was significant relationship between the means of transport and utilisation of SBA in the area of the study as noted ($\chi^2 =11.245$, d.f =4, $p=0.00023$, $\alpha =0.005$).The common means of transport used by women in reproductive age to health facilities were boda-boda as noted by 42% of women followed by those who use public transport to health facilities who were 24%. 15% walk, 11% use bicycle while 8% use taxi to health facility. The mode of transport corresponded well with cost to health facility which was noted to be significantly important and relating to utilization of SBA. The amount most women in reproductive age paid for transport was 50-100 for one way to the health facility followed by those who paid 50 shillings with those who paid above 100 shillings being very few.

The cost involved in delivery services may influence whether women of reproductive age will access and utilize skilled birth attendants in public health facilities. Majority of women in reproductive age 30.1% said they had spend less than 500 shillings for catering of delivery services. Kenyan government has introduced free maternal care services whereby expectant women are enrolled in insurance scheme 'Linda Mama' which caters for both the mother antenatally, during delivery and postnatally as well as for the baby upto six months both in accredited public, private and faith based health facilities. Actually 24.8% of women of reproductive age spend nothing for delivery services with those spending 1000 and 1001-2000 being 19.7% and 15.7% respectively while who paid above 2000 were only 9.6%. This implies most of maternity and delivery services are free however there are some unforeseen expenses. This corroborates with study by Owuor and Amolo (2019) who believes that actual or perceived affordability of health services is important as anticipated costs may play a role in deterring care-seeking, with implications for the health outcomes of the mother and child. Even when formal fees are low or non-existent, there may be hidden fees in terms of the cost of transportation, drugs purchased outside of the hospital, and food or accommodation costs for the mother and her accompanying family members

Kenyan Government has continued to support payment of delivery services through the Linda Mama voucher system as indicated by 52.3% of women in reproductive age. This is in line with study done by Wausi (2018). Around 21.1% of women in reproductive age claimed husbands paid for their delivery services while 13.1% paid for themselves. Health insurance took small percentage where very few people have invested on health insurance in the area of the study. NHIF is a government medical insurance scheme which helps in catering for medical bill among Kenyan citizen in case of illness either as outpatient or inpatient services in selected public and private

facilities. It was observed in the study that three quarters (76%) of women in reproductive age had no NHIF card. It was noted from the study that most women lacked the NHIF card because they were unemployed and they lacked money to subscribe monthly. This matches with Olungah and Ochako (2019) in Kitui County whose data indicated that most of the respondents were unemployed in the area of the study especially females and survived with less than a dollar a day in Kitui south constituency. Poor access to issuing institution, lack of knowledge and ignorance are noted to be the cause of low enrolment to NHIF services among women in reproductive age.

5.1.3 Health system factors and influence on access to SBAs

There are various health system factors which may affect utilization of free skilled delivery services among women in reproductive age in the study area. It was realized from the study that there was significant association between health system factors and utilization of free skilled birth attendants which was rated to 69.7% ($r=0.697$, $\alpha=0.05$). The study also found that there exists relation between health system factors and utilization to free skilled birth attendants which was rated at 68.7%. Health system factors include: Poor health facilities, inadequate supplies, poor staff attitude and in adequate referral systems. Services in most health facilities were noted to be fair as indicated by 35.2% with 30.1% claiming the services are poor compared to those reported being good at 18.4%. The findings indicated a contrast where 70.4% of women in reproductive age indicate they would recommend other women to give birth in the facility they had their last delivery. In Siaya, physical access to the health facilities was reported as a barrier (Ochieng & Odhiambo, 2019).

It was noted that women in reproductive age still used the services of traditional birth attendants in the study area. This was contrary of many women who had claimed they

wish to give birth in the hospital where there are skilled birth attendants with only 21.9% reporting they seek assistance of traditional birth attendants. Severe staff shortage was hindering factor towards ensuring availability of skilled birth attendants as most of the health facilities in the study area operated below the required WHO standard staffing norms (WHO, 2019). All the sampled dispensaries were being manned by only one nurse for all the health services offered delivery services included with health centres and level 4 hospitals with a hand full of skeleton staff.

The study noted the main reason for WRA utilizing services of TBA as being readily available as indicated by 27% of all respondents, in case of precipitate labour where 26%. This means some women simply utilize services of TBAs because they cannot be able to reach the health facilities on time due to lack of transport or lack of money for transport costs. In Nandi, women of the reproductive age were found to be utilizing skilled birth attendant more than those being attended by traditional birth attendants (Brals et al., 2019).

It was also found that when the nearby public health facility operates 24 hours a day for maternity services it will influence whether they utilize SBA in the area of the study during delivery ($\chi^2=44.194$, d.f =2, $p=0.00025$, $\alpha =0.005$). This means if the nearby health facilities open 24 hours daily it means utilization of SBA will increase. It was observed in the study that 85.5% of the women in reproductive age reported that the nearby public health facility do not operate 24 hours a day for maternity services. It should be noted that 35 out of 47 health facilities in Kitui south sub county are dispensaries and most of them do not have maternity units which are fully equipped. Actually, about 77.1% of women claimed that they missed delivery services in their nearest public health facility when they needed them. This implies that

maternity services in most public health facilities are not always available for women in Kitui south sub county. The findings indicated that about 29% of respondents missed services in public health facilities as they were closed. 21% claimed the staffs were rude and harsh. It should be noted that most of health facility in Kitui south being dispensaries they remain closed especially in evening, weekends and public holidays or when the officer is away on official or personal matters. These results are in line with those reported by Pyone et al (2017) that in Kitui there are few health facilities that work for 24 hours. High workload and understaffing leads to burnouts to available staff's thus poor service delivery. Some women who also missed delivery services claimed there were missing essential supplies such as surgical gloves and some drugs at 16%, staffs were busy with other patient accounted at 12% with those who were referred to other facilities recorded at 16% respectively. This was congruent with the findings of Nyongesa (2018).

5.1.4 Strategies of scaling up utilization of SBAs

To scale up utilization of skilled birth attendants various activities need to be done. There should be increased number of health facilities, employment of more skilled health workers, increasing supplies and facilities in hospital, awareness on use of skilled birth attendants, training health workers on customer care and handling and strengthen of referral systems. Recent survey data found that only 36% of public health facilities offering maternity services had all the basic delivery infrastructure, instruments and equipment required, with lower level facilities particularly health centres and dispensaries ill-equipped (Kilonzo et al., 2017; Gitobu et al., 2018). The Kenya Health Sector Strategic & Investment Plan (2012-2018) also estimates that current staffing levels in Kenya meet only 17% of minimum requirements needed for effective operation of the health system across all cadres of care. With health

department being a devolved function county governments and development partners are investing heavily on health infrastructure, staffing, capacity building and supply of basic commodities on maternal and neonatal child health.

5.2 Summary of findings

It was noted from the study that the level of the utilization of skilled birth attendant was still low despite services being free in all public facilities in the country. It was observed that still there were socio-economic, political and health system factors which are hindering utilization of free SBA in the area of the study.

The study had two null hypotheses where null hypothesis one was ‘social, cultural and economic factors do not influence utilization of skilled birth attendants among women of reproductive health in Kitui South sub County’. The findings from the study indicated that there was strong relationship between social, cultural and economic factors and utilization of skilled of SBA. The findings of this study were that some social factors: age, level of education, marital status, status of employment, amount of income per month do influence utilization of skilled birth attendants among women of reproductive age while cultural factors like believe in TBA, male chauvinism may influence women in utilizing services of SBA. This led to rejection of the null hypothesis and adoption of the alternative hypothesis which states ‘Social, cultural and economic factors influence utilization of SBAs among women of reproductive age.

The second hypothesis is, ‘health systems factors do not influence utilization of skilled birth attendants in Kitui County’. From the findings of the study, it was observed that there were many health systems factors like transport, cost associated with delivery, lack of referrals systems and limited supplies in hospital to be some of the factors which influence utilization of SBA thus rejecting the null hypothesis and

adopting the alternative hypothesis ‘that health system factors influence utilization of SBA in Kitui county’.

To improve the utilization of SBA in Kitui County, it is observed that; improving health facilities infrastructure, employing more staff, increasing capacity building to the staff, creating awareness to women in reproductive age through Social Behavior Change and Communication (SBCC), increasing supplies in hospitals and strengthening referrals systems will help improve the utilization of SBA. It is noted that these interventions will have a long term impact on increasing utilization of SBA hence there is need to address these barriers within the study area and the country as a whole.

5.3 Policy and Programming Recommendations of the Study

The study made recommendation based on the four objectives as follows:

5.3.1 Access to free SBAs in health facilities

To the women of reproductive age, they should ensure they have individual birth preparedness and readiness plan for each and every birth. To achieve these women should be encouraged to attend at least four ANC visits where they will be advised accordingly by the healthcare providers to reduce the burden of maternal and infant mortality and morbidity.

The national, county government and partners should create awareness and advocacy to community members especially Women of reproductive age on importance of utilization of SBA attendance during deliveries in available health facilities.

The health workers should ensure that all pregnant women have access to comprehensive focused antenatal care.

5.3.2 Socio-cultural and economic factors and access to SBAs

Awareness need to be created by government to community members especially targeting women of reproductive age on the importance of utilization of SBA during deliveries and how to counter retrogressive cultural practices against utilization of SBAs.

The governments and partners to capacity build health care providers on how to handle women of reproductive age during ANC clinics, delivery and postnatal clinic to ensure they have right attitude and provide respectful maternity services.

Government should ensure all women of reproductive age are covered by National health insurance scheme and ensure 'Linda Mama' voucher system is well utilized by pregnant mothers and no cost are involved during birth process.

5.3.3 Health system factors and access to free SBAs

County government should ensure they establish health facilities within a reasonable distance from one another, provide basic equipments to those health facilities, supplies and ensure there are adequate staffs to attend women all times and be able to provide basic emergency obstetric and neonatal care.

County government should ensure there are adequate ambulance services in the health facilities and community level which are free and easily accessible in case of referrals and emergency for women of reproductive age when giving birth.

National government should link with county government in ensuring all facilities have adequate and specialized equipment and facilities that can be used to attend referral cases in each level 4 hospitals for CEMONC (Comprehensive emergency obstetric and neonatal services).

Capacity building on BEMONC (Basic emergency obstetric and neonatal care) and respectful maternity care to all health workers working in maternity units.

Ensure motivation and retention of health workers through incentives

5.3.4 Strategies of scaling up utilization of SBAs

County government should identify and engage TBAs to become birth companions and assist in identifying and referring all pregnancy mothers for ANC clinics and for delivery.

Ministry of Health and County governments should link up with other partners in creating awareness to women with knowledge in order to be able to make informed decision concerning their own health and pregnancy outcomes in order for them to access timely skilled care at delivery.

5.3.5 Suggestion for Further Research

1. There have been challenges of staff attitude which have influenced the rate at which women of reproductive age access SBA so there is need of study on staff attitude and level of utilization of SBA in the area of the study.
2. Since introduction of 'LINDA MAMA' voucher program, there is no study in the area of study that have evaluated the program thus need on study on how 'LINDA MAMA' has influenced utilization of SBA during delivery.
3. Since 2013, health sector have been devolved to counties; a study on impact of devolving health sector and access to SBA in the county will be necessary.
4. The study focused with utilization of free skilled delivery services among women of reproductive age in public health facilities in Kitui South sub- County only, thus the same study should be done in other sub counties and in the rest of 47 Counties to enable generalization of results.

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APPENDICES

Appendix I: Informed Consent

My name is Japheth Mbinda Ndonyi. I am a Master Degree student from Kenyatta University. I am conducting a study on “Utilization of free skilled delivery services among women of reproductive age in public health facilities in Kitui County, Kenya”. The information will be used by the Ministry of Health and sanitation to improve access and quality for service delivery in public health facilities in Kitui County as well as in other regions in Kenya.

Procedure to be followed

Participation in the study will require that I ask you some questions. I will record the information from you in a questionnaire. You have the right to refuse participation in this study. Kindly note that you will get the same care and services whether you agree to participate in the study or not and your decision will not change the care you will receive from the service providers today or that you will get from any other facility at any other time.

Please remember that participation in the study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may also decline the interview at any point without any consequences to the services you receive in this health facility or any other organization now or in the future.

Discomfort and risks

Some of the questions you will be asked may be embarrassing or may make you uncomfortable, if this happens you may refuse to answer these questions if you so choose. You may also stop the interview at any time. The interview can take approximately one hour.

Benefits

If you participate in this study you will help us to understand the factors influencing utilization of free skilled delivery services in among women of reproductive age in public health facilities for future planning and service delivery improvements thus reducing the risks associated with childbirth.

Reward

If you agree to participate in this study kindly note that no monetary incentives will be offered.

Confidentiality

This interview is private and confidential so I do assure you confidentiality of information you give and your name will not be recorded in the questionnaire. The questionnaires will be kept in a locked cabinet for safe keeping and everything will be kept private.

Contact information

If you have any questions you may contact Dr Joan Njagi on 0 724586841 or Dr Daniel Muia on 0721237458 or Kenyatta University Ethical Review Committee Secretariat on chairman.kuerc@ku.ac.ke, Secretarykuerc@ku.ac.ke, ercku2008@gmail.com.

Participant's statement

The above information regarding my participation is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand I will get the same medical care whether I decide to leave the study or not and my decision to leave the study or not will not change the care I receive in this health facility today or that I will get from any other facility at any other time.

Participants code.....

Signature or Thumbprint

Date

Investigator's statement

I, the undersigned, have explained to the volunteer in a language s/he understands the procedures to be followed in the study and the risks and benefits involved.

Name of the interviewer.....

Interviewer signature_____

Date_____

Appendix II: Assent Form For Under Age

My name is Japheth Mbinda Ndonyi, a master Student from Kenyatta University and am conducting a research study on “Utilization of free skilled delivery services among women of reproductive age in Selected Public Health Facilities in Kitui County, Kenya”. You are asked to volunteer to participate in the study. Your parent/guardian has given his/her consent for you to participate in this study.

This study requires you to honestly fill in a questionnaire only once. This will take one hour of your time. Questions asked may be touching on your private life. The research findings will be important to improve access and quality for delivery services in public health facilities in Kitui County as well as other regions in Kenya. There will be no monetary incentives offered to participate in the study. You may terminate your participation at any time you choose. The information given will be used only for this research and your confidentiality will be assured. Having been satisfactorily informed about the study, you will give your assent to participate in this study.

AGREEMENT TO BE IN THE STUDY

Your signature below means that you have read the above information about the study and have had a chance to ask questions to help you understand what you will do in this study. Your signature also means that you have been told that you can change your mind later if you want to. You will be given a copy of this assent form.

.....
Under age's name	signature of the underage	Date
.....
Person obtaining Assent	signature of person obtaining assent	Date

Appendix III: Questionnaire for Women of Reproductive Age

Notes to the interviewer

- Read each question (except the first one) out loud and clear to the respondent
- Do not read out the answers options unless a specified to do so
- Tick (✓) each answer as appropriately for each question inside the box

Section 1: Personal Information

1. Is the respondent a Male or Female?

Male [] Female []

2. How old are you?

Below 19yrs [] 20-29yrs [] 30-39yrs [] Over40yrs []

3. What level of Education do you possess?

Primary [] Secondary [] Tertiary [] None []

4. What is your marital status?

Married [] Single [] Divorced [] Separated []

5. Which religion do you belong to?

Catholic [] protestant [] Muslim [] others []

6. Are you employed?

Yes [] No []

7. What is your total monthly income (KES)

<5,000 [] 5001-10,000 [] 10,001-20,000 [] >20,001 []

8. How many children do you have?

One [] 2-3 [] 4-5 [] >6 [] None []

9. How old is your last born?

0-1year ☐ >1years ☐ (If above 1year terminate filling the questionnaire)

Section 2: Utilizing Skilled Birth Attendants in the sub County

10. Are you the one receiving services today at this health facility?

Yes ☐

No ☐

If yes for above, which service are you receiving?

ANC ☐ FP ☐ OPD ☐ MCH ☐ OTHERS ☐

11. Did you attend ANC during your last pregnancy?

Yes ☐

No ☐

12. How many times did you attend the ANC during your last pregnancy?

None ☐ One ☐ 2-3 ☐ 4 and above ☐

13. At what gestation did you start attending ANC clinic?

1-3Months ☐ 4-6 months ☐ 7-9months ☐ don't know ☐

14. Did you discuss danger signs associated with pregnancy during ANC clinic, labour and immediately after delivery in the health facility?

Yes ☐

No ☐

15. Did you experience any of the danger signs associated with pregnancy

Yes ☐

No ☐

If YES which danger signs among the following did you experience during your last pregnancy? Tick Yes for the danger signs you experienced.

Severe headache Yes ☐ No ☐

Severe abdominal pain Yes ☐ No ☐

High Fever Yes [] No []

Convulsion /Fits Yes [] No []

Foul vaginal discharge Yes [] No []

Prolonged labour>12hours Yes [] No []

Placenta not delivered within 30 minutes after delivery

Yes [] No []

Mood swings Yes [] No []

Severe vaginal bleeding Yes [] No []

16. Did you know what to do if any of above danger signs occurred?

Yes [] No []

If yes explain what you did

17. Were you informed when you were due to deliver by your service provider during ANC Clinic (Expected Date of Delivery)?

Yes [] No []

18. Did you discuss about Individual birth plan (IBP) during your last delivery with your service provider? (If yes how had you prepared for your last delivery (Tick appropriate).

i) Identification of decision maker during emergency Yes [] No []

ii) Transport plans Yes [] No []

iii) Birth partner during delivery Yes [] No []

iv) How to get money in case of emergency Yes [] No []

v)Identification of place of birth Yes[] No []

VI)Mother- baby package Yes[] No[]

19. Where did you deliver your last born baby?

i)Hospital(Health facility) []

ii)Home []

iii)On the way to Hospital []

iv)Any other place []

20. What was the mode of delivery?

i) SVD (Spontaneous vaginal delivery) []

ii) C/S (Caesarean section) []

21. Who assisted you during your last delivery?

i)Nurse/Midwife []

ii)Doctor/clinical officer []

iii)TBA(Traditional birth Attendant) []

iv)Relatives/Neighbour []

v)Self/Unassisted []

vi) Don't know []

22. Who made the decision on place of delivery during your previous pregnancy?

i) Self []

ii)Husband/Partner []

iii) In -laws []

iv) Any other person []

23. How much did you pay for the delivery services (ksh)?

i) Less than 500 []

ii) 501-1000 []

iii) 1001-2000 []

iv) Over 2001 []

v) (Did not pay anything) []

24. Who paid for the delivery expenses ?

i) Self []

ii) Husband/Partner []

iii) Insurance (NHIF) []

iv) Government (OBA Vouchers) [] v) Others (Specify) []

25. Did your partner/Husband accompany you to the Health facility?

i) Yes []

ii) No []

26. Do you have a NHIF Card?

[] Yes [] No (if no explain
why?.....)

27. If you delivered in a health facility explains why you choose this facility?

i) Is near to my residence []

ii) Cheapest []

iii) Services are good []

iv) Was referred []

v) Health providers are good []

vi) Equipment and other supplies are available []

vi) Facility is clean []

vii) Others (specify).....

28. In your future pregnancy where will you deliver your baby? Specify why?

.....

29. In your community are there systems put in place to assist pregnancy women in case of obstetric emergencies?

.....

Mention

.....

30. In your opinion is there any importance of hospital delivery? Yes [] No []

If 'Yes' Mention

.....

31. Why do you think women DON'T like using health facilities when giving birth in this community?

.....

Section 3: Factors that Influence the Utilization of Skilled Birth Attendants

32. Are there cultural factors which prevent you from accessing skilled birth attendant services in the community?

Yes [] No []

(If yes please mention)

.....

.....

.....

.....

33. How would you describe your birthing experience with health facility staffs during your last delivery?

Very Good [] Good [] Fair [] poor [] Very poor []

34. Would you recommend other women who wish to give birth to that particular health facility?

i) Yes []

ii) No []

35. Do women still use the services of traditional birth attendants in this community?

i) Yes [] ii) No []

If 'YES' Explain Why?

.....

.....

.....

.....

36. .How far is the nearest public health facility from your home?

0-5kms [] b) 5- 10km [] c) Above 10km [] d) Don't know

37. What means of transport did you use to reach the health facility?

- a) Bodaboda []
- b) Walking []
- c) bicycle []
- d) Taxi []
- e) Public transport []
- f) Others []

38. How much did you pay for the transport (*One way*)

- a) Less than 50ksh []
- b) 50-100 ksh []
- c) 101-200 []
- d) Over 200 []
- e) Did not pay anything []

Section 4: Strategies to Improve Utilization of Skilled Birth Attendants (*Tick and explain appropriately*)

39. Have you ever heard of free skilled delivery services in public hospitals?

- i) Yes []
- ii) No []

40. Would you say that free delivery services in public health facilities have been of any help in ensuring utilization of skilled birth attendants?

- a) Yes []
- b) No []
- c) Don't know []

41. Do the nearby public health facility operate 24 hours a day for maternity services?

- a) Yes [] b) No [] c) Don't Know []

42. Have you ever missed skilled delivery services in your nearest public health facility when you needed them? Yes [] No [] (if **Yes** why)

i) Facility was closed []

ii) No Skilled birth attendant was available []

iii) Staff was busy with other patients/clients []

iv) Had no money []

v) Staff harsh/rude []

vi) Supplies were missing []

vii) I was referred to the next level/other hospital []

v) Others [] (Explain)

.....

43. What have you heard from the community members on maternity services in public health facilities in this area?

a) Its good []

b) Its average []

c) Bad []

d) Don't know []

e) Did not answer []

f) Others []

44. In your own opinion what are your recommendations to scale up utilization of skilled birth attendants in your community? (*Which areas do you think need improvements to increase utilization of skilled birth attendants?*)

.....

.....

.....

Thank You for your help and information wishing you good health

Appendix IV: Key Informant Interviews Questionnaire for Health workers

Introduction and consent

My name is **Japheth MbindaNdonyi** a student from Kenyatta University pursuing Master Degree in Public Health-Reproductive Health .Am undertaking research on **utilization of free skilled delivery services among women of reproductive age in public health facilities in KituiCounty, Kenya**. Please take a few minutes of your time to answer this questionnaire .We need your response so as to enable us understand the factors influencing utilization free skilled delivery services among women of reproductive age in public health facilities in Kitui South for future planning and service delivery improvements in the Sub County and the County as a whole. This interview is private and confidential so I do assure you confidentiality of the information you give. Also if you do not want to take part in the interview at all, you may decline at any point. Your sincerity will be highly appreciated.

May I proceed to ask you the questions?

Interview No. _____

1. What is your gender?

☐ male ☐ female

2. How old are you? (In years)

☐ 18-28 ☐ 29-39 ☐ 40-50 ☐ over 51

3. What is your cadre?

☐ Medical officer ☐ clinical officer ☐ Nurse/Midwife

☐ Pharmacy ☐ Laboratory Staff ☐ Administrator

☐ Supportive staff ☐ others ☐ did not answer.

4. How long have you worked in this health facility?

☐ Less than 1yr ☐ 1-2 yrs. ☐ 3-4 yrs. ☐ more than 5yrs

5. What maternal health services do you offer at your health facility?

.....

.....

.....

.....

6. Approximately how many new ANC mothers are attended in your health facility per month?

.....

.....

7. Approximately how many deliveries are conducted in this health facility per month?

.....

.....

8. What were the total deliveries conducted in the last six months in this facility
(*Confirm with available monthly reports/Maternity register*)?

.....

.....

9. What can you rate the level of utilization of free skilled delivery services in your catchment area

☐ Good

☐ Fair

☐ Poor

☐ Don't know

10. Are you aware of the free delivery services policy in all Public health facilities?

☐ Yes

☐ No

11. Has the free delivery service policy made any impact in your catchment population in terms of utilization of skilled delivery services?

☐ Yes

☐ No

Explain

.....

.....

.....

12. Do you have the resources you need to enable you offer quality delivery services to Mothers in your catchment population?

☐ Yes

☐ No

If NO in above go to Question 13

13. What are some of the resources do you lack in your catchment population?

☐ Inadequate staff

☐ Inadequate equipment

☐ Inadequate working area/space

☐ Inadequate supplies and drugs

☐ Skills and knowledge gap

☐ Others (specify).....

14. What are some of the factors that could make it difficult for women to access and utilize services of skilled birth attendants in this area?

☐ Distance

☐ Cost

☐ Availability of the services

☐ Availability of skilled staff

☐ Cultural beliefs and practices

☐ Community awareness on the availability of the services

15. Are there any interventions in your catchment population that are geared towards increasing utilization of skilled birth attendants? *Mention*

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.....

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.....

16. What challenges do you encounter when offering skilled delivery services in this catchment population/facility? *Mention*

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17. Which aspects of maternal health services do you think should be improved in this health facility to increase utilization of skilled birth attendants?

☐ Drugs and supplies

☐ Staffing levels

☐ Cost of services

☐ Handling of clients

☐ Waiting time

☐ Cleanliness of the facility

☐ 24 hours operation

☐ Referral systems

☐ Diagnostic services

☐ Others (Specify)

.....
.....
.....

18. What recommendations would you like to make in order to increase utilization of skilled delivery services in this health facility

.....
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.....
.....

Thanks you for your information and time

Appendix V: Interview Guide for Key Informants

Target group: Area chiefs, Assistant chiefs, Ward administrators and Sub county health management team members.

Dear respondent,

I am Japheth MbindaNdonyi, a student from Kenyatta University pursuing Master in public Health – Reproductive Health. I am undertaking research on **‘utilization of free skilled delivery services among women of reproductive age in public health facilities in KituiCounty –Kenya’**

Please take a few minutes of your time to answer these questions. We need your response so as to enable us understand factors influencing utilization of free skilled delivery services among women of reproductive age in public health facilities in Kitui County for future planning and service delivery improvements in your sub county and the country as a whole. I do assure you of the CONFIDENTIALITY of the information that you will give. Your SINCERITY will be highly appreciated.

1. What is your position; Specify e.g CHIEF, SCMOH, SCPHN etc

.....

- 2) What is priority (main) health issues in this community (Area of your jurisdiction)?

.....

- 3) Are you conversant/aware of free skilled delivery services policy in the Public health facilities in Kenya?

a) Yes []

b) No []

4) What is your role in ensuring utilization of free skilled delivery services in this community?

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5) How many home deliveries have been reported in your office in the last three months? (*Applies to Chiefs and assistant chiefs only*)

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6) In your opinion has the free delivery services policy has any impact in utilization of skilled birth attendants? Explain

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7) What are some of the challenges/factors that could make it difficult for women to access skilled delivery services in this community?

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8) Are there any religious/cultural beliefs related to skilled birth attendants' utilization in this community?

i) Yes []

ii) No []

If yes explain

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9) Do you think the health facilities haven enough resources and capacity needed to offer quality maternity services in this area?

Yes []

No []

If NO. Explain

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10) Are the public health facilities opened 24hours in a day?

Yes []

No []

11) Are there emergency measures put in place to assist pregnant women in case of emergencies?

Yes []

No []

If YES, Explain how

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12) Was there any maternal death which was reported in your office in the last 12 months in your area of your jurisdiction?

i)YES []

ii) NO []

If YES How many cases

.....

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.....

13) Are Mothers charged when they come for delivery services in public health facilities?

Yes []

No []

14). How are community members informed of the availability of skilled delivery services in the community?

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15). what strategies /systems have you put in place to ensure that there is increased utilization of skilled birth attendants in this community?

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.....

16) How could you rate the quality of maternity services offered in the public health facilities in this community?

Good []

Fair []

Bad []

Don't know []

17). How do you appraise the performance of health staffs working under you against the desired standards of services? (Applies to SCHMTs members only)

Explain

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18). How do you get feedback and suggestions from the community on health services offered in the health facilities?

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19) In your opinion what recommendations would you suggest for improvement of utilization of skilled birth attendants in this area?

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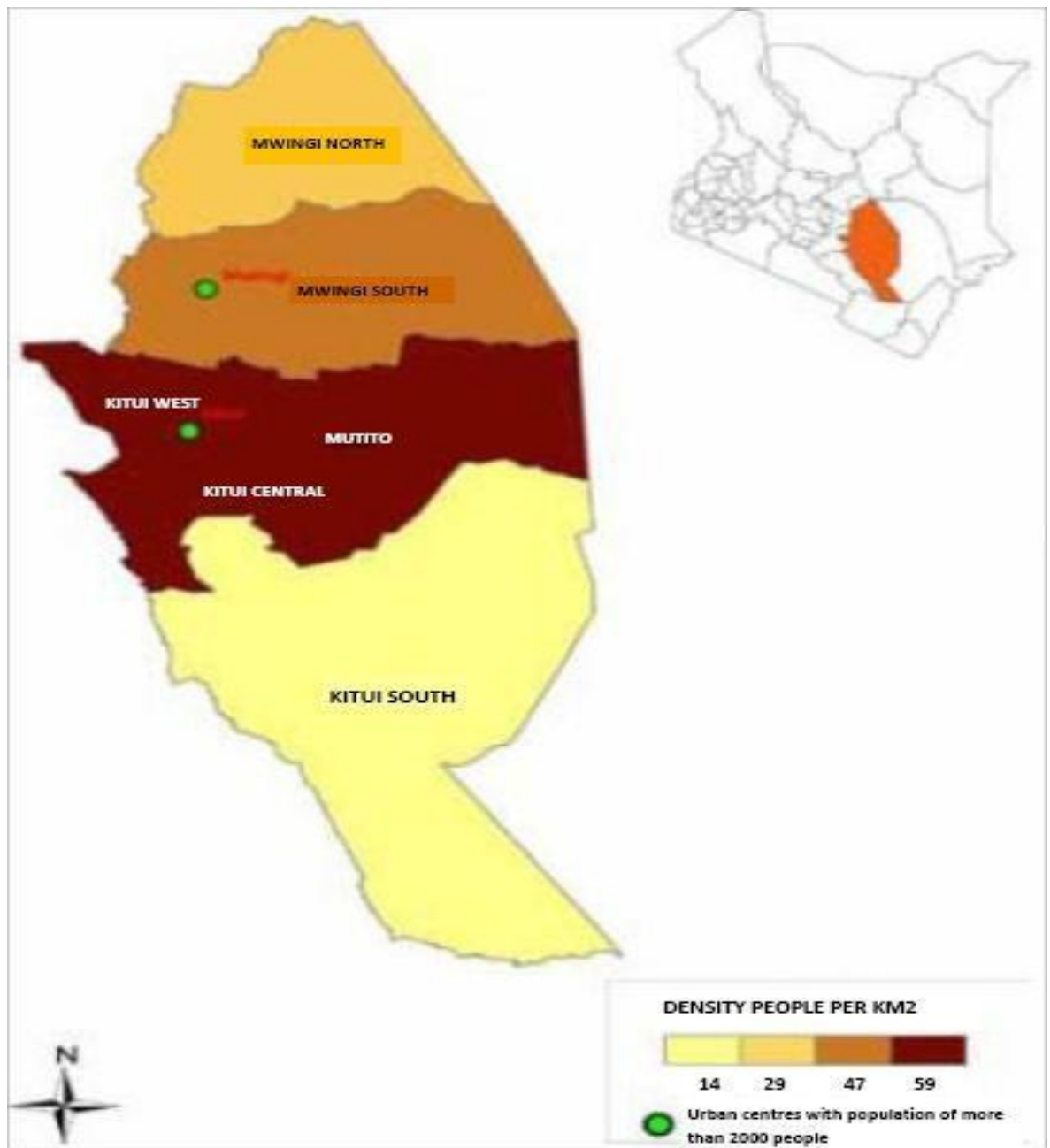
.....

Thanks for your time and information

**Appendix VI: Focus Group Discussion Guide for Women of Child Bearing Age
(15-49 Years)**

1. What do you understand by skilled birth attendants?
2. What is the important of hospital/health facility delivery?
3. How soon should a woman start attending Antenatal clinic?
4. How many Antenatal visits should a mother attend before she delivers?
5. What problems/factors hinder a woman from attending health facility for skilled delivery services when in labour in this community?
6. It has been observed that some women does not attend the recommended four ANC Clinic visits when pregnant, what might be the reasons?
7. What are some of the reasons why some women don't deliver in health facilities despite the services being free?
8. Why do most deliveries take place at home under care of traditional birth attendants? Any reasons?
9. What are the dangers/complications likely to be encountered by women when they deliver at home or without assistance of skilled birth attendants?
10. How can these complications be avoided?
11. What are the effects of these complications to the
 - (i) Mother
 - (ii) Baby
 - (iii) Family and community

- 12) How is male involvement in maternal health services in this area?
- 13) Do you feel women are more empowered to make their own decisions when seeking maternal health services in this community?
- 14) Are there cultural/religious beliefs which hinder women from accessing skilled delivery services in this community?
- 15) How would you rate the services offered in public health facilities in this area?
- 16) What recommendations will you suggest in order to improve uptake of skilled delivery in this area?

Appendix VII: Map of Kitui County Showing Kitui South Sub County

Appendix VIII: Authority Letter from NACOSTI



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: 254-20-2213471,
2241349, 210571, 2215420
Fax: 254-20-218247, 218249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Ushaka House
Ushaka Highway
P.O. Box 50625-00100
NAIROBI-KENYA

Ref. No: **NACOSTI/P/16/73191/14360**

Date:

8th November, 2016

Japheth Mbinda Ndonyi
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Utilization of free skilled delivery services among woman of reproductive age in public health facilities in Kitui County, Kenya.*" I am pleased to inform you that you have been authorized to undertake research in **Kitui County** for the period ending **8th November, 2017.**

You are advised to report to **the County Commissioner, the County Director of Education and the County Director of Health Services, Kitui County** before embarking on the research project.

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


BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kitui County.

The County Director of Education
Kitui County.

Appendix IX: Authority Letter from Post Graduate School



KENYATTA UNIVERSITY GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: Q139/CE/23955/2012

DATE: 4th April 2016

Director General,
National Commission for Science, Technology
& Innovation
P.O. Box 30623-00100,
NAIROBI

Dear Sir/Madam,

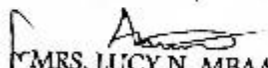
RE: RESEARCH AUTHORIZATION JAPHETH MBINDA NDONYI- REG. NO. Q139/CE/23955/2012

I write to introduce Mr. Japheth Mbinda Ndonyi who is a Postgraduate Student of this University. He is registered for M.P.H degree programme in the **Department of Environmental & Population Health**.


Mr. Ndonyi intends to conduct research for an M.P.H Proposal entitled, **"Utilization of Free Skilled Delivery Services among Women of Reproductive Age in Public Health Facilities in Kitui County, Kenya"**.

Any assistance given will be highly appreciated.

Yours faithfully,


MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

Appendix X: Letter of Approval of Research Proposal from Graduate School


KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke P.O. Box 43844, 00100
Website: www.ku.ac.ke NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School **DATE:** 4th April 2016

TO: Japheth Mbinda Ndonyi **REF:** Q139/CE/23955/12
C/o Environmental & Population Health.


SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that Graduate School Board, at its meeting of 30th March 2016, approved your Research Proposal for the M.P.H Degree. Entitled, "Utilization of Free Skilled Delivery Services among Women of Reproductive Age in Public Health Facilities in Kitui County, Kenya".

You may now proceed with data collection, subject to clearance with the Permanent Secretary, Ministry of Higher Education, Science and Technology.

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

Thank you.


ANNBELL MWANIKI
FOR: DEAN, GRADUATE SCHOOL

s.c. Chairman, Department of Environmental & Population Health

Supervisors:

1. Dr. Joan Njagi
C/o Department of Environmental & Population Health
Kenyatta University
2. Dr. Daniel Muriu
C/o Department of Sociology
Kenyatta University

Appendix XI: Research Authority Letter from County Commissioner's Office



THE PRESIDENCY MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

E-mail: cc@kitui.go.ke
When calling or telephoning

OFFICE OF THE
COUNTY COMMISSIONER
KITUI COUNTY
P.O. BOX 1 - 90283
KITUI

When replying please quote

Ref. K.C.603/1/149

14th November 2016

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION: JAPHETH MBINDA NDONYI

The above named is a student of Kenyatta University, he is authorized to carry out research on *"Utilization of free skilled delivery services among woman of reproductive age in public health facilities in Kitui County, Kenya,"* for a period ending 8th November 2017.

Kindly accord him the necessary assistance he may require.

M.G. MAUKI
FOR: COUNTY COMMISSIONER
KITUI COUNTY

Appendix XII: Research Authority Letter from County Education Office

MINISTRY OF EDUCATION State Department for Basic Education

Telegrams *EDUCATION* Kitui
Telephone: Kitui 22759
Fax :04444-22103
E-Mail : cde.kitui@gmail.com



COUNTY EDUCATION OFFICE
KITUI COUNTY
P.O BOX 1557-90200
KITUI

When replying please quote;

Ref. No: KTIC/ED/RES/22/211

14th November, 2016

Japheth Mbinda Ndonyi
Kenyatta University
P.O. Box 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION: JAPHETH MBINDA NDONYI

The above subject refers:

Authority has been granted to you to undertake the research for the period specified.

On completion of the research, kindly submit a copy of the research report to our office. We intend to aggressively embark on improving education standards in the county. Your report will go a long way in assisting us attain this target.


GATAMBIA D. MUGO
FOR: COUNTY DIRECTOR OF EDUCATION
KITUI COUNTY.

Appendix XIII: Research Authority Letter from County Government of Kitui

THE COUNTY GOVERNMENT OF KITUI



Office Of the Chief Officer
Ministry of Health and Sanitation
P.O.Box 460
KITUI

MINISTRY OF HEALTH AND SANITATION

14/11/2016

Ref No. KTI/STAFF/GEN/VOL.VIII/50

TO WHOM IT MAY CONCERN

RE:RESEARCH PERMISSION JAPHETH MBINDA NDONYI - REG.NO.Q139/CE/23955/2012

This is to notify you that above named is a student at Kenyatta University pursuing a Master degree in Public Health in Reproductive Health. He intends to conduct research on **"Utilization of free skilled delivery services among women of reproductive Age in Public Health facilities in Kitui County"**

He has been permitted to collect data at selected County Government of Kitui health facilities in Kitui South Sub County and from key informants as from 19/11/2016 to 19/01/2017. However he is advised to maintain strict confidentiality of respondents and to share the research findings with the office of the undersigned.

Kindly accord him the necessary assistance.



Assistant Director –Disease prevention and Health promotion

Kitui County

Appendix XIV: Ethic Review Committee Approval Letter



KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE

Email: chairman.kuerc@ku.ac.ke
secretary.kuerc@ku.ac.ke
 Website: www.ku.ac.ke

P. O. Box 43844 - 00100 Nairobi
 Tel: 8710901/12
 Fax: 8711242/8711575

Our Ref: KU/R/COMM/51/798

Date: 30th August, 2016

Japheth Mbinda Ndongi
 Kenyatta University
 P.O. Box 43844 – 00100
 NAIROBI

Dear Wanjiru

APPLICATION NUMBER PKU/498/1594 – “UTILIZATION OF FREE SKILLED DELIVERY SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN PUBLIC HEALTH FACILITIES IN KITUI COUNTY, KENYA”

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic, “Utilization of Free Skilled Delivery Services among Women of Reproductive Age in Public Health Facilities in Kitui County, Kenya” received on 27th June, 2016.

2. APPLICANT

Japhet Mbinda Ndongi

3. SITE

Kitui County, Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 30th August, 2016.

5. ADVICE/CONDITIONS

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

When replying, kindly quote the application number above.

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

DR. TITUS KAHIGA
 CHAIRMAN ETHICS REVIEW COMMITTEE

I, Japheth Mbinda Ndongi, accept the advice given and will fulfill the conditions therein.

Signature: [Signature] Dated this day of 9th September 2016.
 cc: Vice-Chancellor
 DVC-Research Innovation and Outreach