DETERMINANTS OF UTILIZATION OF HEALTH FACILITY DURING CHILD BIRTH BY WOMEN AGED 15-49 YEARS IN MATINYANI SUB-COUNTY IN KITUI COUNTY, KENYA

MAINGI NANCY (BScN)
Reg. No: P57/ 21294/2010

A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN PUBLIC REPRODUCTIVE HEALTH IN THE SCHOOL OF PUBLIC HEALTH OF KENYATTA UNIVERSITY

JUNE 2014
DECLARATION

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

Signature:........................................... Date:...........................

Maingi Nyambura Naney (Reg. No: P57/21249/2010)
Department of Environmental Health

We confirm that the work reported in this thesis was carried out by our student under our supervision and has been submitted with our approval as university supervisors.

SUPERVISORS

Signature........................................... Date:...........................

Dr. Margaret Keraka
Department of Environmental Health
Kenyatta University

Signature........................................... Date:...........................

Dr. Peter Mwaniki
College of Health Sciences
Jomo Kenyatta University of Agriculture and Technology
I would like to first acknowledge the Almighty God who gives me courage and strength to face the different challenges in life and acquiring the information needed for this study.

I acknowledge my supervisors Dr Margaret Keraka and Dr Peter Mwaniki for their advice, guidance, and patience throughout the period of my thesis. Without them, this thesis would not have been a success.

My parents for their tireless efforts to see me through my studies. Your support and encouragement keeps me motivated. Dad and Mum you are one in million and I am so proud of you. Thank you.

My classmates and friends for your support and input in time of need. Thank you.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECLARATION</td>
<td>I</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>II</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>VIII</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>IX</td>
</tr>
<tr>
<td>ACRONYMS AND ABBREVIATIONS</td>
<td>X</td>
</tr>
<tr>
<td>OPERATIONAL DEFINITION OF TERMS</td>
<td>XII</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>XIII</td>
</tr>
<tr>
<td>CHAPTER ONE: INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1 BACKGROUND</td>
<td>1</td>
</tr>
<tr>
<td>1.2 PROBLEM STATEMENT</td>
<td>4</td>
</tr>
<tr>
<td>1.3 STUDY JUSTIFICATION</td>
<td>6</td>
</tr>
<tr>
<td>1.4 RESEARCH QUESTIONS</td>
<td>7</td>
</tr>
<tr>
<td>1.5 NULL HYPOTHESIS</td>
<td>7</td>
</tr>
<tr>
<td>1.6 OBJECTIVES</td>
<td>8</td>
</tr>
<tr>
<td>1.6.1 BROAD OBJECTIVE</td>
<td>8</td>
</tr>
<tr>
<td>1.6.2 SPECIFIC OBJECTIVES</td>
<td>8</td>
</tr>
<tr>
<td>1.7 LIMITATION OF THE STUDY</td>
<td>9</td>
</tr>
<tr>
<td>1.8 CONCEPTUAL FRAMEWORK</td>
<td>10</td>
</tr>
<tr>
<td>CHAPTER TWO: LITERATURE REVIEW</td>
<td>11</td>
</tr>
<tr>
<td>2.1 OVERVIEW OF MATERNAL MORTALITY</td>
<td>11</td>
</tr>
<tr>
<td>2.2 INTERNATIONAL EFFORTS TO CURB MATERNAL MORTALITY</td>
<td>11</td>
</tr>
<tr>
<td>2.3 EFFECTS OF MATERNAL DEATHS</td>
<td>13</td>
</tr>
</tbody>
</table>
4.9.6 PLACE OF BIRTH ........................................................................................................51
4.9.7 RESPONDENTS SOURCES OF ASSISTANCE DURING CHILD BIRTH ..........53
4.9.8 REASONS FOR NOT UTILIZING HEALTH FACILITY FOR CHILD BIRTH ....54

4.9.9 FAMILY DECISION MAKER .................................................................................56
4.9.10 RESPONDENT’S PERCEPTION ON PLACE OF CHILDBIRTH .........................57
4.9.11 REPORTED ADVANTAGES FOR USING A HEALTH FACILITY FOR CHILDBIRTH .............................................................................................................58
4.9.12 REPORTED ADVANTAGES FOR NOT USING A HEALTH FACILITY FOR CHILDBIRTH ........................................................................................................60
4.9.13 ANTENATAL VISITS MADE ..............................................................................61
4.9.14 MATERNAL HEALTH EDUCATION ..................................................................62
4.9.15 RESPONDENTS’ SOURCE OF HEALTH EDUCATION ....................................63
4.9.16 RESPONDENTS’ PERCEPTION ON SOME OF MATERNAL HEALTH PROBLEM .........................................................................................................................64
4.9.17 KNOWLEDGE ABOUT AVAILABILITY OF A HEALTH FACILITY IN THE SUBLOCATION ........................................................................................................65
4.9.18 ESTIMATED DISTANCE TO THE NEAREST HEALTH FACILITY .................66
4.9.19 RESPONDENTS’ SUGGESTION ON WAYS TO IMPROVE HEALTH FACILITY UTILIZATION .........................................................................................................67

4.10 PROVIDER RELATED FACTORS .............................................................................68
4.10.1 HEALTH WORKERS AVAILABILITY ..................................................................69
4.10.2 TRAINING OF THE SKILLED ATTENDANTS .......................................................69
4.11 FACILITY FACTORS ................................................................................................70
LIST OF TABLES

Table 4.1: Respondents Age ..................................................... 39
Table 4.2: Main source of income ............................................. 40
Table 4.3: Main income earner .................................................. 41
Table 4.4: Marital status .......................................................... 44
Table 4.5: Respondents Number of Children .............................. 46
Table 4.6: Total number of pregnancy in a Lifetime ...................... 48
Table 4.7: Respondents’ number of pregnancies in last five years .... 49
Table 4.8: Age of respondents last born child ............................ 52
Table 4.9: Respondents reasons for not delivering in health facility .... 55
Table 4.10: Perception of respondents on advantages of hospital delivery 59
Table 4.11: Perception on advantages of home delivery .................... 60
Table 4.12: Health education on Maternal Health .......................... 62
Table 4.13: Sources of health education ....................................... 64
Table 4.14: Major maternal health problems ................................. 65
Table 4.15: Distance to nearest health facility ............................... 67
Table 4.16: Respondents suggested recommendation ........................ 68
Table 4.17: Training of Health workers ....................................... 70
Table 4.18: Equipment ............................................................. 71
LIST OF FIGURES

Figure 4.1: Highest Level of Education of .........................................................42
Figure 4.2: Religion of respondents.................................................................45
Figure 4.3: respondents with under five year old children.........................50
Figure 4.4: Respondents’ total family size ......................................................51
Figure 4.5: Place of Birth ..................................................................................53
Figure 4.6: Source of respondent’s assistance during childbirth..................54
Figure 4.7: Decision maker on where and who to assist during delivery ......57
Figure 4.8: Perception of respondents on hospital delivery verses home delivery......58
Figure 4.9: Number of Antenatal visits made by respondents during last pregnancy.....61
Figure 4.10: Presence of a health facility ..........................................................66
Figure 4.2.11: Training of Health workers .......................................................69
<table>
<thead>
<tr>
<th>ACRONYM</th>
<th>ABBREVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>AMREF</td>
<td>Africa Medical Research Foundation</td>
</tr>
<tr>
<td>ANC</td>
<td>Antenatal Clinic.</td>
</tr>
<tr>
<td>APH</td>
<td>Ante partum haemorrhage.</td>
</tr>
<tr>
<td>APHRC</td>
<td>Africa Population Health Research Centre</td>
</tr>
<tr>
<td>EMOC</td>
<td>Emergency Obstetric Care.</td>
</tr>
<tr>
<td>FHI</td>
<td>Family Health International</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>ICPD</td>
<td>International Conference on Population Development</td>
</tr>
<tr>
<td>IDPS</td>
<td>Internally Displaced Persons</td>
</tr>
<tr>
<td>KDHS</td>
<td>Kenya Demographic Health Survey</td>
</tr>
<tr>
<td>KU</td>
<td>Kenyatta University</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MMR</td>
<td>Maternal Mortality Rate.</td>
</tr>
<tr>
<td>MNCH</td>
<td>Maternal Newborn and Child Health.</td>
</tr>
<tr>
<td>MOMS</td>
<td>Midwives with Other Midwifery Skills</td>
</tr>
<tr>
<td>MVA</td>
<td>Manual Vacuum Aspiration</td>
</tr>
<tr>
<td>PHC</td>
<td>Primary Health Care</td>
</tr>
<tr>
<td>PPH</td>
<td>Post partum haemorrhage.</td>
</tr>
<tr>
<td>RH</td>
<td>Reproductive health</td>
</tr>
<tr>
<td>RHF</td>
<td>Rural Health Facilities</td>
</tr>
<tr>
<td>STIs</td>
<td>Sexually Transmitted Infections</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>TBA</td>
<td>Traditional Birth Attendant.</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNFPA</td>
<td>United Nations Population Fund</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations International Children Emergency Fund</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>OBA</td>
<td>Output Based Approach</td>
</tr>
</tbody>
</table>
FANC  - Focused Antenatal Care
SBA   - Skilled Birth Attendant
FIFO  - First In First Out
OPERATIONAL DEFINITION OF TERMS

Traditional birth attendant: A person – usually a woman – who assists the mother at childbirth and who initially acquired her skills delivering babies by herself or working with other TBAs.

Skilled birth attendant: an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns (WHO, 2005).

Maternal death: is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental (WHO, 2005).

Maternal mortality rate: deaths from all puerperal causes in an year/Total live births in a year × 100000.

Maternal mortality ratio: total number of deaths from all puerperal causes in one year/Total number of women alive after birth in one year × 100000.

Supportive supervision: is the process by which skilled attendants and supervisors review the quality of care provided, reinforcing effective and appropriate, evidence-based practices and offering constructive feedback.
ABSTRACT
A demographic health survey done in Kenya in the year 2009 revealed that 54% of births in Eastern Province are conducted at home by TBAs and relatives and obstetric care services are unavailable in most of the rural health facilities. A report by Kitui District Development Plan 2008-2012 indicates that despite 20% of women delivering in a health facility, over 80% deliver at home with 70% of the deliveries being assisted by TBAs. Across the County, the majority of maternal death and disabilities occur from preventable causes that can be averted through skilled attendance at birth, backed up with emergency care. This precisely indicate that the uptake of the health services of skilled attendance at birth is low; this also posed a lot of questions as to why 93% of women in Eastern province would seek ANC services yet 70% deliver in the hands of unskilled attendants. This study was aimed at identifying the determinants of utilization of health facility during childbirth by women aged 15-49 years in Matinyani Sub county, in Kitui county. It was a facility-based study conducted in Matinyani Sub county where 376 women and 6 health facilities were included. It was a descriptive cross-sectional study. The variables tested were utilization of health facility during child birth, client related factors, provider related factors and health facility related factors. Data collection was done using focused group discussions guide, interview schedule guide, observation and analysis was done using SPSS version 17. Chi test was used to show association between the variables. Majority of the respondents 138 (36.7 %) were between 25-30 years, 125 (33.2 %) between 20-25 years, 58 (15.4 %) between 30-35 years, 31 (8.2%) between 15-20 years and 24 (6.4%) above 35 years. At least 66.2%(n=249) of the respondents highest level of education was primary school, 30.3% (n=114) had secondary education and only 3.5%(n=13) had tertiary education. Fifty eight percent (n=218) of the respondents deliver at home, while 42% (n=158) deliver in health facilities. About 33.8% (n=127) of the respondents deliver under TBAs, 18% (n=68) are assisted by relatives, 6% (n=23) are unassisted. Some of the major reasons for home delivery included distance to health facility, travel cost and weak referral systems. There was a significant relationship between marital status and utilization of health facility during child birth ($\chi^2=0.0401; df=2; p<0.05$). There was a significant relationship between religion and utilization of health facility during child birth ($\chi^2=0.0401; df=1; p<0.05$). At least 99% (n=373) of the respondents attended antenatal clinic during pregnancy but only 53% (n=202) managed to attend the four recommended visits. Eighty six percent (n=324) had health education on maternal health. Only 43% (n=164) of the respondents made own decision on where and who to assist them during delivery. The proportion of women not utilizing SBA were 58%, with 33.8% being assisted by traditional birth attendant. Ninety nine percent attended ANC but only 53.7% made the recommended four visits. Majority of health workers were trained on FANC but not trained on comprehensive RH. Despite availability of some essential drugs for management of obstetric complications, in majority of the facilities they were expired. From the study findings it is recommended that community to be health educated on importance of hospital delivery, dangers associated with home delivery by the government. All health workers to be educated on drug storage to avoid expiry hence wastage of drugs. The government and the community should strengthen the referral systems in the sub county.
CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND

Pregnancy related mortality is almost always preventable yet more than half a million women die annually worldwide due to its related complications. Every minute of every day, somewhere in the world and most often in a developing country, a woman dies from complications related to pregnancy or childbirth. Nearly all maternal deaths (99%) occur in the developing world, making maternal mortality the health statistic with the largest disparity between developed and developing countries (UNFPA, 2007).

The average woman in sub-Saharan Africa faces a 1:16 life risk of dying in pregnancy and childbirth, compared with a 1 in 2800 chances for a woman in a developed country. Another 300 million women in developing countries suffer a long term illness as a result of pregnancy and childbirth (Safe Mother, 2006). In Kenya, 6150 mothers die every year due to pregnancy related and preventable complications. For every woman who dies, 30 to 50 women suffer injury, infection, or disease. Pregnancy-related complications are among the leading causes of death and disability for women aged 15-49 in developing countries (WHO, 2007).

A woman's death is more than a personal tragedy. It represents an enormous cost to her nation, her community, and family. When a mother dies, children lose their primary caregiver, communities are denied her paid and unpaid labor, and countries forego her contributions to economic and social development. Any social and economic investment
that has been made in her life is lost. Her family loses her love, her nurturing, and her productivity inside and outside the home (UNFPA, 2010).

According to (KNBS et al, 2010), the Maternal Mortality Rate (MMR) in Kenya was 488/100,000 live births. However, 92% of pregnant women attended ANC and only 44% mothers were assisted by skilled birth attendants during delivery despite the availability of the services at all levels of health facilities. A study done by AMREF (2010) revealed that 99% of women attend antenatal clinic at least once in their life. However only 46% of deliveries in the country are carried out by skilled attendants.

In developing countries, the risk of MMR is higher and made more dangerous by the widespread incidence of Malnutrition, Lack of access to clean water and sanitation, Epidemics such as malaria, tuberculosis, HIV and AIDS, inadequate or unaffordable transport facilities in remote areas so that women with complications cannot reach skilled help, inadequate human resources, drugs and equipment being available at health centers and hospitals, inequitable opportunities for women and girls, leading to poor levels of education on knowledge about their own bodies and basic hygiene practices, inequitable social and cultural status for women and girls, leading to inability to achieve their human rights, including control over their own reproductive health (WHO, 2009).

In Kenya, Maternal Newborn and Child Health (MNCH) indicators remain low. Progress has been hindered by poor policy implementation and weak health systems, which do not engage with or respond to community needs. This results in poor access to and utilisation of preventive and curative health service. Wide-spread prevalence of HIV, TB and
malaria in the country and especially in the targeted area, exacerbates maternal health, necessitating an integrated approach to health systems strengthening (UNFPA, 2007). More than a decade of research has shown that small and affordable measures can significantly reduce the health risks that women face when they become pregnant. Most maternal deaths could be prevented if women had access to appropriate health care during pregnancy, childbirth, and immediately afterwards (UNICEF, 2007).

Skilled attendance at all births is considered to be the single most critical intervention for ensuring safe motherhood, because it hastens the timely delivery of emergency obstetric and newborn care when life-threatening complications arise. Skilled attendance denotes not only the presence of midwives and others with midwifery skills (MOMS) but also the enabling environment that is needed in order to be able to perform capably. It also implies access to a more comprehensive level of obstetric care in case of complications requiring surgery or blood transfusions (WHO, 2010).

Historical as well as contemporary evidence from many countries, most notably China, Cuba, Egypt, Jordan, Malaysia, Sri Lanka, Thailand and Tunisia, indicate that skilled midwives functioning in or very close to the community can have a drastic impact on reduction of maternal and neonatal mortality. This is why the proportion of births attended by a skilled health provider is a vital indicator for measuring progress toward the fifth Millennium Development Goal of improving maternal health (WHO, 2010).

Since it is difficult to predict who will develop a life-threatening complication, all pregnant women should have access to a qualified health provider for prenatal and
delivery care, operating in a health centre with adequate referral services to a higher level of facility if needed (UNFPA, 2010).

1.2 Problem statement

Globally, at least 160 million women become pregnant annually. Of these, 15% develop a serious complication. Over 30 million women in the developing world suffer from serious diseases and disabilities which include uterine prolapse, pelvic inflammatory disease, fistula, incontinence, infertility, and pain during sexual intercourse as a result of inadequate or inappropriate care during pregnancy, delivery or the first critical hours after birth (WHO, 2005).

All pregnant women need to have access to skilled care throughout pregnancy, delivery, postpartum and postnatal periods to ensure the achievement of the desired outcome of a healthy mother and baby. The lower eastern region of Kenya is a poor area with over 56% of the population living in absolute poverty. The MMR in the country is at 488 per 100,000 live births (KNBS, 2009) but in Matinyani Subcounty, the MMR is unknown.

In the world only 46 per cent of deliveries are assisted by skilled attendants. In Southern Asia, the proportion is even lower. Every minute, 110 women in the world experience a complication in their pregnancy, and one of them dies (UNFPA, 2010).

In developing world only 58% of all deliveries are reported as attended by skilled health providers. In some countries, the figure is closer to 10-12 per cent. In many of those cases, the woman does not have access to life-saving emergency care should something

The use of Skilled Birth Attendants (SBAs) during pregnancy, labour and delivery during the post partum period could prevent many instances of maternal morbidity and mortality. Unfortunately qualified midwives, nurses and doctors are often not available in most rural areas of developing countries where most women are delivered (WHO, 2008).

A report by Kitui District Development Plan 2008-2012 (2009) indicates that only 20% of women deliver in a health facility while 80% deliver at home with 70% of the deliveries being assisted by TBAs. Maternal Mortality Ratio in the district is estimated at 452/100,000 live births.

In Matinyani District, 85% of births are conducted at home (outside the health facilities) and obstetric care services are not available in most of the rural health facilities (AMREF, 2008). TBAs are unable to address any of the 5 major causes of maternal mortality which are haemorrhage that is antepartum haemorrhage and postpartum haemorrhage, sepsis, pre-eclampsia and eclampsia, ruptured uterus and complication of induced abortion (MOH, 2006).

A survey by Kenya National Bureau of Statistics et al (KNBS) (2010) revealed that 54% of births in Eastern Province are conducted at home by TBAs and relatives and obstetric care services are unavailable in most of the rural health facilities.
1.3 Study justification

Though the issue of improving maternal health care services has been high on the international agenda for two decades, the MMR seems to have changed little in regions where most deaths occur that is, Sub-Sahara Africa and Southern Asia. Adequate reproductive health services and family planning are essential in improving maternal health, therefore adequate utilization of the maternal health services would contribute substantially in achieving this goal (Siraff, 2012).

In 2003 the government of Kenya started training health workers on post abortal care so as to decrease mortality associated with haemorrhage. In 2004 the Ministry of health trained health workers on focused antenatal care where pregnant women were encouraged to have a minimum of 4 visits to the ANC and at least have an individual birth plan. In 2005 the Ministry of Health started training health workers on essential obstetric care where various obstetric complications such as ante partum haemorrhage, post partum haemorrhage, eclampsia, sepsis, cord prolapse, inversion of the uterus, and cardiac disorders in pregnancy among others were covered in details to enhance safe motherhood Despite attempts made by the government and non-governmental organizations to decrease MMR in the country, the situation continues to worsen. The KDHS (2009) indicates that the MMR in Kenya was 488/100,000 live births. In Kitui County, many Non-Governmental Organizations (NGOs) have set up projects to solve the maternal and child health issues. A lot of funds have been channeld in that direction. So far inadequate research has been carried out in Matinyani Sub-County to establish whether the existence of the these NGOs have made any impact. It is envisaged that the findings of this study will shed light on the magnitude of the problem of underutilization
of delivery services, hence provide insight in the current operation status of the centres in order to help the management to put strategies to improve on the health facility delivery. Baseline data for further studies on determinants of health facility utilization will be provided by this study findings. The study findings can also contribute to the achievement of the 5th Millenium Development Goal (MDG) of reducing maternal mortality rate by empowering women, and health workers with knowledge on the identification and best way to manage obstetric emergencies.

1.4 Research questions

1. What proportion of women of reproductive age utilizes health facility during child birth?

2. How do the client related factors influence utilization of health facility during child birth in Matinyani Sub-County, Kitui County?

3. How do the provider related factors influence utilization of health facility during child birth in Matinyani Sub-County, Kitui County?

4. How do the health facility related factors influence child birth in the facility by women in Matinyani Sub-County, Kitui County?

1.5 Null hypothesis

1. There is no relationship between the client and health provider factors and utilization of health facility during child birth in Matinyani Sub-County, Kitui County.
2. There is no relationship between the health facility factors and utilization of health facility during child birth in Matinyani Sub-County, Kitui County.

1.6 Objectives

1.6.1 Broad objective

To identify the determinants of utilization of health facility during child birth by women aged 15-49 years in Matinyani Sub-County in Kitui County.

1.6.2 Specific Objectives

1. To determine the proportion of women that utilize health facility during child birth in Matinyani Sub-County in Kitui County.

2. To identify the client related factors influencing utilization of health facility during child birth by women aged 15-49 years in Matinyani Sub-County in Kitui County.

3. To determine the health provider related factors influencing utilization of health facility during child birth by women aged 15-49 years in Matinyani Sub-County in Kitui County.

4. To assess the health facility related factors influencing their utilization during child birth by women aged 15-49 years in Matinyani Sub-County in Kitui County.
1.7 Limitation of the study

i. The study was conducted in Matinyani Sub-County and only delivery services were assessed hence the findings cannot be generalized in regard to other services.

ii. The study was facility based and hence the findings cannot be generalized to the entire community.
1.8 CONCEPTUAL FRAMEWORK

Problem Analysis Diagram of Possible Factors Contributing to utilization or non-utilization of health facility for child birth.

Model Adopted from S. Thaddeus and D. Maine 1994

Client related factors
Socioeconomic and cultural factors, Women status-access to money, Education level, Age, Parity, Marital status, religion, Perceived quality of care, reputation/perceived experiences, Satisfaction with services-staff attitude,

Utilization or Non-utilization of health facility during child birth

Provider factors
Number of Staff, Training of the staff, Competency of the Personnel, Motivation level, attitude

Health Facility factors
Distance-disincentive, Transportation cost, travel time Road conditions, Maintenance of equipment and supplies,
CHAPTER TWO: LITERATURE REVIEW

Although all women and babies need pregnancy care, care in childbirth is most important for the survival of the woman (WHO, 2004).

2.1 Overview of maternal mortality

Along with infectious diseases, maternal and neonatal conditions account for a substantial part of the health gap between rich and poor countries. Overall, the average lifetime risk of maternal death is 1 in 4,000 in high-income countries, 1 in 61 in middle-income countries and 1 in 17 in the lowest income countries (World Bank, 2006). More than 80% of maternal deaths worldwide is due to five direct causes, hemorrhage, sepsis, abortions, obstructed labour and hypertensive diseases (WHO, 2004; Harvey, Ayabaca, Bucagu, Djibrina, 2004). Most of these deaths can be prevented if women have access to essential obstetric care during pregnancy (UN, 2008).

Enormous disparities remain within countries: Impoverished and rural women are far less likely than their urban or wealthier counterparts to receive skilled care during childbirth. In rural areas health clinics and hospitals are often spread out over vast distances and transportation systems are often rudimentary (UNFPA, 2010).

2.2 International efforts to curb maternal mortality

Since various international initiatives (Safe Motherhood Initiative in Nairobi, 1987; UN International Conference on Population and Development [ICPD] in Cairo 1994) were launched, there has been little progress in reducing maternal mortality, particularly in Sub-Saharan Africa.
The UN Millennium Development Goal 5 to reduce Maternal Mortality Ratio by three quarters between 1990 and 2015 thus remains elusive (APHRC, 2006).

Safe Motherhood Initiative was to draw attention to the dimensions on the consequences of poor maternal health in developing countries, and to mobilize action to address the high rates of deaths and disability (UNFPA, 2005). Safe Motherhood Strategies (SMS) were developed based on pregnancy, antenatal, delivery and the postpartum periods. The specific activities include the provision of antenatal care, skilled assistance for normal deliveries, appropriate referral for women with obstetric complications, postnatal care, family planning and other reproductive health services. The four basic principles or pillars of the Safe Motherhood Strategy are: Family planning: providing information and services, Antenatal care: early detection and providing appropriate care and treatment, Clean and safe delivery: providing trained skilled birth attendants and equipment and Emergency obstetric care: providing basic and essential obstetric care.

Despite the widespread global commitment to reduce maternal mortality, lack of progress in achieving the goals of the SMS is multifaceted and can be attributed to many factors ranging from misconceptions, lack of political commitment, health system’s general failure, inadequate investment in effective strategies, lack of clear technical priorities, subsequent implementation of poorly-focused and ineffective interventions and insufficient information (UNFPA, 2005).
2.3 Effects of maternal deaths

Maternal death has also an impact in the health and well-being of families, communities and in general in the social and economic situation of the societies. Each year an estimated US $15.5 billion is lost in potential productivity when mothers and newborns die (WHO 2005). When a woman dies in childbirth, her infant and any other children’s survival is threatened. Infants without mothers are more likely to die within two years. Children up to 10 years whose mothers die are 3 to 10 times more likely to die within two years than children living with mothers. Every year an additional 2 million children worldwide are maternal orphans (WHO, 2005). Maternal death has long term effects on a child’s education and health. When a mother dies, older children often leave school to support their family. Children without a mother are less likely to be immunized, and are more likely to suffer from malnutrition (WHO, 2005).

Obstetric outcome is largely dependent on the quality of maternal and newborn health care. Severe pregnancy related complications that lead to long-term illness or disability. For each woman that dies, many more suffer from severe morbidity. The majority of these maternal deaths are preventable (Boama and Arulkumaran, 2009; UNICEF, 2008).

Studies show that most women who develop complications do not have any known risk factors, and there is no way of knowing whether any will develop (Maine, 1993). Therefore, quality Emergency Obstetric Care (EmOC) services need to be available to every pregnant woman over and above health worker responsiveness to life-threatening complications. Some 15% of childbirths are expected to have complications that require emergency obstetric care (UNICEF et al., 1991), and all women with complications
should have access to that care. In developing countries, women’s ability to access health care in general is affected by poverty, women inequality, low social status and societal attitudes towards women and their needs (Ezugwu et al., 2011).

“Improving the survival rate of mothers and newborns calls for a mix of strategies that deal with women’s health and family planning, the delivery of quality antenatal, childbirth and postnatal care, and emergency obstetric care to respond to life-threatening complications in the mother or new born baby (UNFPA, 2010).

An emphasis on making emergency obstetric and newborn care available to all women who develop complications is central to UNFPA’s efforts to reduce maternal mortality. This is because all five of the major causes of maternal mortality can be treated at a well-staffed, well-equipped health facility. In the long term, this means that all births should take place in appropriate health facilities, as is the case in all countries that have managed to significantly reduce their maternal mortality. In the interim, before such a long-term goal can be reached, universal access to emergency obstetric care requires that all women and newborns with complications should have rapid access to well-functioning facilities, whether that is a mobile health unit, a district hospital or an upgraded maternity centre (UNFPA, 2010).

To manage obstetric complications — the life-saving component of maternity care — a facility must have at least two skilled attendants covering 24 hours a day and seven days a week, assisted by trained support staff. To manage complications requiring surgery, the facilities must have a functional operating theatre, more support staff and must be able to
administer blood transfusions and anaesthesia. Existing facilities (district hospitals and health centers) can often, with just a few changes, be upgraded to provide emergency obstetric and newborn care. Obviously it is better if the delivery takes place in or very near to a facility capable of providing at least the basic emergency obstetric and newborn care. In some areas where rapid access to such a facility is impossible, women spend the days or weeks before delivery in ‘waiting homes’ so that emergency obstetric care is readily accessible (UNFPA, 2010).

2.4 Risks of maternal death

In developing countries the risks MMR is higher and made more dangerous by the widespread incidence of: Malnutrition; Lack of access to clean water and sanitation; Epidemic levels of disease such as malaria, tuberculosis, HIV and AIDS; Inadequate or unaffordable transport facilities in remote areas so that women with complications cannot reach skilled help; Inadequate human resources, drugs and equipment being available at health centers and hospitals; Inequitable opportunities for women and girls, leading to poor levels of education including knowledge about their own bodies and basic hygiene practices, inequitable social and cultural status for women and girls, leading to inability to achieve their human rights, including control over their own reproductive health. The safe motherhood initiative is a global strategy aimed at reducing maternal mortality by half by the year 2000 by creating circumstances within which a woman is able to choose whether she will become pregnant, receive care for the prevention and treatment of pregnancy complications, have access to a trained birth attendant, have access to emergency obstetric care for obstetric complications if she needs it, have care after birth
and avoid death or disability from complications of pregnancy and child birth (MNPI, 2001).

The risk of a woman dying in pregnancy and childbirth depends on the general reproductive health of the mother and the number of pregnancies she has had in her lifetime. The higher the number of pregnancies, the greater the lifetime risk of pregnancy related deaths (WHO, 2005). Maternal age also has an impact on increasing the risk of dying. Girls below 18 years and women older than 35 years are more likely to have pregnancy related complications that may lead to maternal death (USAID, 2005).

All pregnant women need to have access to skilled care throughout pregnancy, delivery, postpartum, and postnatal periods. This Policy calls for strategies towards assuring access by all pregnant women to adequately trained providers in all areas of Kenya. Further, with so little change in the proportion of women choosing to deliver in health facilities even when these are accessible, the health system needs to improve its responsiveness to client needs (WHO, 2005).

2.5 Reasons for maternal deaths

A study from South India showed that assistance during delivery can reduce the risk of obstructed labour and it is highly associated with the place of delivery (Navaneetham et al, 2000). Another study also presented the role of assisted skilled birth attendants in preventing direct and indirect cause of maternal deaths (AbouZahr, 2003).

Despite the efforts by the Gambian Government in adopting the primary health care (PHC) strategy, the aim of which was to make health care more accessible and affordable to the majority of Gambians, physical access to health services has been hampered by a
rapidly growing population, inadequate financial and logistic support, gross shortage of skilled human resource for health, high staff attrition, and an inefficient referral mechanism. Poverty and ignorance have, in some instances, led to inappropriate health seeking delivery behaviour and contributed to ill health. Although the percentage of population living within 5 km of a primary health care facility has improved over the years, the availability, accessibility, and quality of EmOC services in The Gambia are below required standards. Hence, a large number of women in remote settings still continue to travel some distance to reach a basic EmOC facility or resort to home deliveries. It should therefore be noted that nearly two-thirds of all births in Gambia take place in home settings, mostly attended to by traditional birth attendants (TBAs) and/or family members. Thus, most of the deaths and disabilities that women face in these settings could have been averted if the services of a skilled birth attendant were available and accessible to those women in need (Fauveau, 2007).

A study from India have pointed out that the low utilization of maternity services seems to be due to low levels of household income, high illiteracy and ignorance, and a host of traditional factors (Shariff et al., 2002). A similar study in Pakistan described poor socio-economic status, lack of physical accessibility, cultural beliefs and perceptions, low literacy level of the mothers and large family size as the leading causes of poor utilization of primary health care services (Babar et al., 2004). In another study from Ethiopia, it was observed that the use of maternal health services can be influenced by the socio demographic characteristics of women, the cultural context, and the accessibility to these services (Yared et al., 2002).
Gambian Government in adopting the primary health care (PHC) strategy, the aim of
which was to make health care more accessible and affordable to the majority of
Gambians, physical access to health services has been hampered by a rapidly growing
population, inadequate financial and logistic support, gross shortage of skilled human
resource for health, high staff attrition, and an inefficient referral mechanism. Poverty
and ignorance have, in some instances, led to inappropriate health seeking delivery
behaviour and contributed to ill health. Although the percentage of population living
within 5 km of a primary health care facility has improved over the years, the availability,
accessibility, and quality of EmOC services in The Gambia are below required standards.
Hence, a large number of women in remote settings still continue to travel some distance
to reach a basic EmOC facility or resort to home deliveries. Nearly two-thirds of all births
in Gambia take place in home settings, mostly attended to by traditional birth attendants
(TBAs) and/or family members. Thus, most of the deaths and disabilities that women
face in these settings could have been averted if the services of a skilled birth attendant
were available and accessible to those women in need (Fauveau, 2007).

Access to emergency obstetric care in developing countries are hindered by lack of
money, lack of facilities near rural communities, poor transport and distances, and in
some areas cultural barriers (Islam and Yoshinda, 2009). Timing proves to be critical in
preventing maternal death and disability: Although post-partum hemorrhage can kill a
woman in less than two hours, for most other complications, a woman has between 6 and
12 hours or more to get life-saving emergency care. Similarly, most perinatal deaths
occur during labour and delivery, or within the first 48 hours thereafter. Birth
preparedness is not easy to achieve. Many people in developing countries live on less than US $1 a day, which is hardly sufficient for them to feed and cloth themselves let alone put aside money for the possibility of an obstetric emergency. In rural areas, the situation is even more complex: even if transportation (and the money to pay for it) is available in the case of an obstetric emergency, distance and lack of maintained roads may still cause delays sufficient to put the life of the woman in danger (Kureshy, 2000).

Most obstetric complications occur around the time of delivery and cannot be predicted. Therefore it is important that all pregnant women have access to a skilled attendant, someone with midwifery skills, who is able to manage a normal delivery and who can recognize and manage obstetric complications, or refer in time if needed. Skilled attendance at delivery is advocated as the "single most important factor in preventing maternal deaths" (Lawoyin et al., 2007).

2.6 Client related factors

2.6.1 Traditional/ Cultural beliefs

Women in some cultures may avoid facility delivery due to cultural requirements of seclusion in the household during this time of "pollution" or because of specific requirements around delivery position, warmth, and handling of the placenta. In some cultural groups in Africa, the belief that obstructed labour is due to infidelity hinders care-seeking. Beliefs that birth is a test of endurance, and care-seeking a sign of weakness may be another reason for delivering alone in some contexts (Gabrysch and Campbell, 2009).
A study done by Graham (2009) revealed that traditional beliefs and practices in the community contribute to home delivery hence causing women to underutilize health facilities. Preference for TBAs was common for all women; midwives were summoned only if the TBAs failed. Traditional harmful beliefs lead to complacency and delay in seeking care. Some other harmful traditional practices like application of abdominal pressure to rid the mother of dirty blood from her system and for delivering the placenta were described. The practice of ritual impurity during delivery and postnatal period limited the possibilities for other family members to help mother or baby with complications.

In another study done in India where heads of 3000 households from various castes and socio-economic classes were interviewed, it was found that the heads did not think that women need to deliver in hospital or need a postnatal care, and if they become ill, 56% and 62% would allow traditional healers, or an indigenous method, respectively, to treat them. These findings revealed misconceptions about maternal health, warranting a more in-depth, multi-disciplinary study to learn why this rural population does not accept maternal health family welfare services and, perhaps to use the data to develop a mass education policy (Devi, 1993).

In any society, the role of the TBA often reflects the culture and the social organization. A study by Bisika, (2008) on effectiveness of TBA programme in reduction of maternal mortality and mortality in Malawi revealed that in many African communities, TBAs are highly respected; they perform important cultural rituals and provide essential social support to women during childbirth.
2.6.2 Women's Age, Parity and Marital Status

Marital Status could influence health care seeking behaviours. According to WHO (2003) cited by Chaibva C.N (2008), unmarried pregnant women are less likely to seek ANC services due to a lack of economic and social support from parents, guardians and spouses. Married pregnant adolescents may also lack social independence and decision-making powers to seek ANC. There may be pressure or oppression from the spouse or influential members of the extended family forcing pregnant women to accept the decision made on their behalf (WHO, 2003).

Inadequate access by women to reproductive health information and to skilled care throughout the continuum of pregnancy, delivery, post-partum, and post-natal periods, especially the rural and urban poor, and women living in arid and semi-arid regions, pastoral and nomadic populations, and other hard-to-reach groups are at high risk of underutilizing facility delivery services.

A study by Gabrysch and Campbell (2009) revealed that the first birth is known to be more difficult as the woman has no previous experience of delivery. Often a high value is placed on the first pregnancy and in some settings the woman's natal family helps her get the best care possible. Furthermore, health workers may recommend a facility delivery for primipara. By contrast, women of higher parity, can draw on their maternity experiences and may not feel the need to receive professional care if previous deliveries were uncomplicated; there is less skilled care if there is a higher number of births in previous five years because the woman has small children at home and no extended...
family to help taking care of them, Knowledge, access to written information, modern culture, more confident, higher earnings, control over resources, better communication with husband and providers, increase delivery in hospitals, Higher husband's education consistently increases skilled attendance, Information about risks of childbirth and about service availability in radio or television increase skilled attendance use, Familiarity with services, encouragement by health workers increases delivery service use. Social and service environment differences between regions. Generally in rural areas there are worse services and infrastructure, more poverty, more traditional beliefs, which all decrease use of skilled attendance, Distance as disincentive and actual obstacle to reach facilities, enhanced by lack of transport and poor roads decrease use of skilled attendance.

A survey by KNBS (2009) revealed that 84% of children whose mother had no education were born at home. It is interesting to note that sometimes pregnant women do not completely understand the importance of seeking maternal health service at modern health facilities.

Although education and social welfare are not aimed at only improving maternal health, increased spending in these areas leads to sustained reduction in maternal mortality and morbidity (Franke and Chasin, 1992). The client’s level of education could also influence pregnant women’s utilization of the health facilities as well as the understanding of the importance of seeking health care promptly. Low educational status has been identified as a major barrier to the utilization of health care services. These women could easily be persuaded by their grandmothers or TBA’s not to attend ANC and to deliver their babies at home. (Mottew 1997, cited by Mathole et al., 2005). Lack of education can also negatively
affect the women's comprehension of important information and the ability to make informed decisions including the awareness of their own rights (Matua, 2004; Irinoye et al., 2001) High educational levels of both husband and wife have been observed to promote positive health seeking behaviours according to Mulholland, Alibarnho, Brew-Graves and Monreal-Pinland (1999) as well as Matha (2004).

By their nature, comprehensive EmOC facilities are typically located in urban areas and, not surprisingly, the availability of EmOC tends to be better in capital cities than in the country overall. This means that comprehensive EmOC facilities are not readily available for women in rural communities who often must travel long distances just to access the main road that connects to the urban center. Also, globally, for the 60% of women who deliver outside hospitals or health centers (most of whom are located in countries with high MMRs), there may be long delays in making the decision to seek care, due to financial or logistical barriers, lack of knowledge of the early signs of a developing complication, or lack of confidence (often justifiable) in the health services. This, combined with the delay in reaching a facility in a distant town or city, means many women arrive at the comprehensive facility too ill to be effectively treated. This indicates the need for more, smaller, facilities at the periphery that provide basic EmOC. The relative lack of services for rural women has been documented elsewhere (Bailey et al., 2006).

A study to identify factors associated with low utilization of ANC and hospital deliveries was conducted in Kano, Nigeria during October 2000. One hundred and seven women were interviewed using questionnaires. Most women in the district delivered at home
with the assistance of family members (there was no specified statistics). The most frequent reason given was ‘it is easier at home’, an explanation that accounted for 26.2% of the responses. Almost all the women interviewed expressed their desire to deliver safely at home within the privacy of their rooms and in the company of their relatives who could understand their situation. Hospital delivery was seen as the unavoidable alternative; that is, unless it was absolutely necessary, women in the study area would not want to deliver elsewhere but at home. On further questioning, it was evident that the pregnant women in the study disliked certain practices associated with hospital delivery. These includes the lithotomic position imposed on them instead of the squatting posture they were used to, the lack of privacy, presence of a male staff attendant and episiotomies conducted without plausible explanations. To avoid these inconveniences, in addition to the transportation difficulties, the pregnant women in study area felt strongly ‘it is easier at home’ (Making pregnancy safer, 2003).

2.6.3 Socioeconomic status of women

In a study on the determinants of maternal health services in the rural India, it was found that, there is a correlation between household income and utilization of maternal health services (Sharif and Singh, 2002). A study done by Lawoyin et al., (2007) revealed that social and economic problems related to the family were also described. One man said that, ‘‘A woman bled to death at home because the husband was not around and money was not available’’ ‘‘The Cesarean section was delayed because the husband/family did not make funds available on time.’’ Another observed that, ‘‘She should have been taken to the tertiary hospital, but they [the
husband/the family] did not do that because they did not have enough money.’’ They also
added that women are not adequately empowered; the standard of living is poor; and
unwanted pregnancies are not prevented among teenage girls. Also, the grassroots level
should be made aware of the need to use healthcare facilities. Poverty has reduced
patronage of orthodox facilities ‘‘pushing more women to mission homes; into the hands
of traditional birth attendants and promoting home delivery’’ (In many West African
countries, maternal and neonatal mortality is highest in rural areas where access to EmOC
service is inhibited by vast geographic distances to health facilities and scarce resources
(GBS, 2007).

2.6.4 Women perception
Women sometimes refuse to seek health services that are available, because they believe
that their medical confidentiality will not be sufficiently respected. This may be
particularly so in a smaller communities where personal relationships among patients and
clinic personnel exist in social life outside the clinic setting. Women’s perceptions that
their confidentiality may be breached might be usefully addressed by ensuring that the
clinic policies and legal duties of confidentiality are carefully explained to all those
seeking health care (Cook, 2001). Many women perceive pregnancy as a normal
phenomenon so that it is not necessary to give birth in a facility with the help of SBAs
(Pant et al., 2008)
The Traditional Birth Attendant is usually an older woman, almost always past
menopause and who must have borne one or more children herself. She lives in the
community in which she practices. They have no formal training and some are illiterate,
and are always accessible at all hours of the day and night. Because traditional birth attendants are from the village, they understand the traditions, cultures, and languages of the women that they attend to, an obvious advantage during antenatal care and childbirth (WHO, 1997). They deliver more babies than the skilled midwives and the skilled midwives soon become deskillled because they stop regular delivery and concentrate more on administrative nursing duties as their careers progress. The village pregnant women and their families tend to trust traditional birth attendants and rely on their opinion (Kongnyuy, Mlava and Broek, 2009).

2.6.5 Decision making

In many parts of Africa, women's decision making power is extremely limited particularly in matters of reproduction and sexuality. Decision making with regard to maternal care is often made by husband or other family members (WHO, 1998). In a study conducted in Nigeria, it was found that in almost all cases, a husband's permission is required for a woman to seek health services, including life saving care. Men play a determining role in decision over when to seek treatment, be it traditional or orthodox in many cultural contexts (Oxaal and Baden, 1996).

2.7 Provider related factors

2.7.1 Competencies

Nurses, midwives, auxiliary midwives and other providers working in birthing centers may not have the skills and competencies necessary to perform all of the six signal functions that define a basic EmOC facility (Bailey et al., 2006). Another set of problems revolved around the competency of the health system. "The health care worker was not
skilled enough,' was a factor expressed by one man. Another simply observed that, "The woman died on the operating table." An angrier response was that, "The doctors and nurses did not know what to do when the women in labor was referred from the primary care center to the secondary level facility. They [doctors and nurses on duty] did not decide on time what to do." Finally, a respondent noted that, "Skilled workers were nonchalant and inefficient" (Lawoyin et al., 2007).

A maternal morbidity and mortality study in Nepal by Pradhan and colleagues (2010) revealed that staff knowledge and competence, lack of proper training and new development, inadequate payment, unsupportive management and lack of support from the other staff are some of the constraints on providing the quality maternal health services in Nepal.

A study done by Africa Population Health and Research Council (APHRC) (2006) on barriers to utilization of EmOC services in Nairobi informal Settlements revealed that almost all professional health care workers in the facilities reported that they were able to administer intravenous antibiotics, oxytocics and anticonvulsants but about only 30 percent could prescribe the same medication. Intravenous fluids could be prescribed and administered by nearly all professional staff. Only 20 percent of staff were able to conduct manual removal of the placenta, 14.4 percent were able to carry out dilation and curettage (D & C) for removal of retained products and 9.4 percent were able to do manual vacuum aspiration (MVA) to remove retained products of conception. Among the midwife assistants/nurse aides, only 17 percent, 11 percent and 12 percent were able to administer intravenous antibiotics, oxytocics, and anticonvulsants, respectively. Only 6
percent of midwife assistants/nurse aides were able to conduct manual removal of the placenta, 6 percent were able to carry out D & C for removal of retained products and 1 percent were able to do manual vacuum aspiration to remove retained products of conception. Intravenous fluids could be administered by about 15 percent of nurse aides and 12 percent were able to resuscitate a newborn baby. Skills for MVA were surprisingly low in the surveyed facilities.

2.7.2 Staff attitude

In a study about obstetrics services utilization by the community in Lebowa, Northern Transvaal, it was found that reasons for home delivery include negative staff attitude (12%) and precipitate labour (7.2%) (Uyiworth, 1997).

Certain ethnic or religious groups may be discriminated against by staff, making them less likely to use hospital delivery services (Gabrysch and Campbell, 2009). A study conducted in Zambia in 1994 to ascertain women’s perceptions of factors which affect their health and well being during the postnatal period and to establish the influence of partners, relatives, friends or health professionals. Findings from this study suggest that women receive inadequate information, advice and support from health professionals during antenatal and postnatal period to facilitate their transition to motherhood (Making pregnancy safer, 2003).

Both positive and negative attitudes of staff play part in the utilization of Skilled Birth Attendants (SBAs) in various ways. Staff's positive attitude towards women during labour such as giving reassurance and encouragement, politeness encourages use of SBAs. Studies from different developing countries have shown negative attitudes like rudeness,
shouting during labour, lack of empathy, refusal to assist, and lack of moral support, making patient wait and giving priority on the basis of links to the staff, caste, ethnic, language and religion all discourage use of SBAs.

2.7.3 Workforce

The global shortage of midwives is severe and it is estimated 700,000 new midwives and other trained providers are needed in order to provide skilled childbirth care to all women who need it. In Africa alone, an additional 1.5 million health workers are needed, nearly doubling the current workforce of 1.6 million, according to the Global Health Workforce Alliance (UNICEF, 2010).

Different studies from Bangladesh, Malawi and Nepal show that death or retirement of staff, emigration overseas in search of better pay and working conditions are further reasons for shortage of SBAs in many developing countries (Kamwendo & Bullough C, 2005; Pradha, 2010; Carlough, 2005; Pradhan, 2010; Kamwendo, 2005).

Many skilled attendants work alone in rural areas without any support and in the few places where supervision is available it cannot be said to be supportive. For skilled attendants to function effectively there is a need to (re)focus on ensuring there is a system of adequate supportive supervision (MoH Malawi, 2004; Dieleman M et al, 2004).
2.8 Health facility factors

2.8.1 Poor physical infrastructure in the health facility

A study by Barley et al., (2006) revealed that from multiple national-level needs assessments is the small number of basic EmOC facilities in relation to the size of the population. This low proportion of basic EmOC facilities to population doubtless results from a number of factors such as prioritization by governments of resources for hospitals over lower level facilities, difficulty of maintaining equipment and supplies in relatively more rural locations, and difficulty in retaining qualified staff in smaller facilities. In addition, government regulations and policies often make it difficult for a facility without a physician present to perform certain signal functions. The lack of availability of basic EmOC facilities is most extreme when disaggregated by sub-national area. Like the comprehensive facilities, basic EmOC facilities are more available in the province containing the capital city than in more distant provinces (data not shown). This has enormous implications for access to care for women living in rural areas.

A study carried out in Bangladesh, Benin, Chad, Mali, Mauritania, Morocco, Nicaragua, Senegal, Sri-Lanka, and United States revealed that the majority of facilities providing maternity services do not perform all six signal functions so as to qualify as a basic EmOC facility. Three fourths had fewer than half their maternity facilities qualify as providing EmOC. Potential EmOC facilities, or those that provide fewer than the designated six functions, are likely to contribute to the reduction of maternal mortality by properly handling normal deliveries, treating the obstetric complications that they can, and stabilizing and referring patients with complications that they are not equipped to
treat. The findings suggested that maternities and other front line facilities are underutilized in countries with high MMR because women begin their deliveries at home, and when a complication arises the maternity is bypassed completely; the woman's family takes her directly to a hospital even if it is much farther away; this is due to an understandable lack of confidence that the necessary care will be available in the maternity (Bailey et al., 2006).

Most birthing centers are unlikely to provide basic EmOC. Where birthing centers are part of a wider maternal health strategy, they have been constructed primarily to attend normal births. For example, numerous countries have experience with such centers, which the community often builds and maintains. In theory, the birthing center should facilitate the referral of a woman or her newborn with complications and staff may or may not be able to stabilize a woman prior to referral. Birthing centers are not likely to be equipped with vacuum extractors or manual vacuum aspiration. Nor are they likely to treat severe pre-eclampsia or eclampsia with magnesium sulfate (Bailey et al., 2006).

A study done in Kenya, Rwanda, Uganda, and Southern Sudan revealed that shortage of trained staff especially mid-level providers, poor basic infrastructure such as lack of electricity and water supplies, inadequate supply of drugs and essential equipment, poor working conditions and staff morale, lack of communication and referral facilities, cost of treatment, and lack of accountability and proper management were identified as the main obstacles in providing 24-h quality EmOC services especially in remote and rural areas (Kayongo et al., 2006)
2.8.2 Charges at Health Facility

A study done in Nigeria by Ezugwu et al., (2011) revealed that poverty directly affects utilization of skilled attendance. The ‘pay at the point of service’ policy in public hospitals make accessibility to maternal and child health services a challenging one, as patients have to pay first before services are rendered. This sometimes leads to tragic deaths due to institutional delays in intervention.

Access to appropriate maternity care including prompt referrals to emergency obstetric care (EmOC) services and skilled birth attendance could significantly reduce both perinatal and maternal mortality and/or morbidity. However, women in many countries in sub-Saharan Africa continue to have restricted access to skilled birth attendants (WHO, 2008). While more than half of all births in sub-Saharan Africa occur without the presence of a skilled attendant, nearly all births in developed nations take place with the assistance of a skilled birth attendant (UN, 2009).

The availability of supplies and functionality of key equipment needed for emergency obstetric care was assessed in four hospitals, it was noted that a few important items are not available in some hospitals. Two out of the four hospitals assessed have a vacuum extractor and one out of four has a manual vacuum aspirator (MVA). This has implications on the ability of such facilities to handle emergencies that require use of such equipment (APHRC, 2006).
The health risks experienced by all women and girls in pregnancy and childbirth are compounded for refugees and IDPs by the general risks which characterize these settings. Immediate causes of death include delays in reaching treatment due to lack of availability and access to treatment, and lack of equipment, supplies, and trained and supported staff at health facilities (WHO, 2007).

Increasing the proportion of babies that are delivered in health facilities is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infection that can cause morbidity and mortality to either the mother or the baby (KNBS, 2009).

A survey done by AMREF (2010), on various health facilities within the district revealed that about 33% of health facilities sampled in had 24 hour emergency obstetric care respectively. The facilities are thus not adequately prepared to provide emergency obstetric care. 33.3% of facilities have a 24 hour access to emergency communication. 66.7% of facilities had storage conditions conducive to maintain the quality of all medical supply items. Most of the facilities at 50%, had equipment and reported systems for sterilizing/high level disinfection of equipment.

Studies conducted in Kenya on voucher Program suggest that voucher programs designed to subsidize poor women’s access to maternal health care are associated with increases in facility-based deliveries and in skilled attendance at delivery, though not in other maternal health services (Obare F et al, 2013; Bellows b et al 2013)
3.0 CHAPTER THREE: MATERIALS AND METHODS

3.1 Study design

The study utilized a descriptive, cross-sectional study design. Descriptive because data was collected to answer questions concerning current status of the subject of the study and provide factual descriptive picture of the situation as it existed at the time of the study. Cross-sectional because data was collected at one point in time that is phenomena under study were captured as they manifested themselves.

3.2 Variables

Utilization of health facility during child birth was the dependent variable and the research focused on; Client related factors, Provider related factors, and Health facility factors as the independent variables.

3.3 Location of the study area

This was a facility based study done in Matinyani Sub-County, Matinyani Division which has a total population of 42,889 people. This region is among the poorest in the country with 56% of the population living in absolute poverty. In Matinyani Sub-County 85% of births are conducted at home (outside the health facilities) and obstetric care services are not available in most of the Rural Health Facilities (RHF). The area was randomly selected among various districts in Kitui county. The Sub county has only six dispensaries which are sparsely distributed.
3.4 Target population

The target population were 10,293 women aged 15-49 years within Matinyani Sub county district and six health facilities in Matinyani Sub county.

3.5 Study population

The study population were 600 women aged 15-49 years who attended post natal check-up and child welfare clinic per month. This was because they were able to recall with ease their delivery experiences.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Client Population/Month</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matinyani</td>
<td>250</td>
<td>157</td>
</tr>
<tr>
<td>Kwa-Mutonga</td>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td>Kwa-Mulungu</td>
<td>55</td>
<td>34</td>
</tr>
<tr>
<td>Ndiuni</td>
<td>85</td>
<td>53</td>
</tr>
<tr>
<td>Kalimani</td>
<td>65</td>
<td>41</td>
</tr>
<tr>
<td>Maseki</td>
<td>65</td>
<td>41</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>600</strong></td>
<td><strong>376</strong></td>
</tr>
</tbody>
</table>

3.6 Sampling procedures and sample size

Simple random sampling method was used to identify the Sub-County in Kitui County. Census sampling used for the health facilities, stratified sampling and proportionately sampling for women of reproductive age and Systematic random sampling method was used to select the mothers as they were being served in the clinic. A total of 376 women who attended child welfare clinic and post natal check up were included in the sample.
3.7 Sample size determination

The sample size was determined using the formula by Kothari (2004),

\[ n = \frac{Z^2 p q N}{(N-1) e^2 + Z^2 p q} \]

Where \( N \) is the population size (10,293), \( n \) = Sample size
\( z \) = standard normal deviate (1.96) which corresponds to 95% Confidence interval.
\( p \) = Proportion of target population estimated to have particular characteristics 43% (KDHS, 2009).
\( q \) = 1- \( P \) (proportion without characteristics)
\( e \)= accepted error margin = 0.05

That a minimum sample of 363.37 women was sufficient for the study, the number was increased to 376 women and this took care of attrition.

3.8 Inclusion criteria

Women aged 15-49 years who attended post natal check up clinic and child welfare clinic.

3.9 Exclusion criteria

All those who did not consent to be included in the study and women 15-49 years attending post natal check up clinic and child welfare clinic in other areas apart from Matinyani Sub county.

3.10 Data collection tools and methods

Client exit interviews for the women 15-49 years, focused group discussion with two groups of women living in Matinyani Sub county, Key Informant Interview with District
commissioner and Kwa-Mutonga chief, interview schedule for health workers, checklist for health facility

A structured questionnaire was used which contained both open ended and closed ended questions. This collected quantitative data. Research assistants were trained to assist in the data collection. Observation technique was used in filling of checklist to assess the health facilities to collect qualitative data.

3.11 Pre test

A pre test study was conducted at Kitui West District in Kauwi sub district hospital where 10% of the questionnaires were used. This ensured reliability.

3.12 Validity

In order to ensure validity, subjects that were involved in the study had to meet the required characteristics. Proper selection, training and supervision of the research assistants on the various instruments which were used to collect data was done and daily tracking and checking of complete tool.

3.13 Data analysis and presentation

The questionnaires were checked for completeness and coded. Analysis of the data was done using (Statistical Package for Social Sciences) SPPS version 17. Both descriptive and inferential statistics for different variables were computed and the findings presented by use of frequency tables, pie charts, bar charts, figures and narration. Chi-square was used to show the association between Variables.
3.14 Ethical consideration

i) Ethical clearance to conduct the research was sought from the Kenyatta University research and ethical committee.

ii) Authority to carry out the study was sought from National council for science and technology (NCST).

iii) Informed consent was obtained from respondents prior to conducting the study by ensuring the study was explained to them and they signed in a consent form.

iv) After data collection, information obtained was used for research purpose only and confidentiality was strictly maintained.

3.15 Assumptions

It was assumed that all the respondents used in the research gave accurate information.
CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Overview of results

This chapter contains detailed analysis of collected data from the women sampled. The results are presented in form of tables, graphs and charts. The objective of the study was to identify the determinants of utilization of health facility during child birth by women aged 15-49 years in Matinyani Sub county in Kitui County. The study was carried out on a sample size of 376 women in six health facilities in the Sub county that is 4 dispensaries, 1 health centre and a 1 district hospital.

4.2 Socio-demographic factors

A number of maternal sociodemographic characteristics such as age, sex, parity, occupation, level of education, marital status, source of income among others are associated with utilization of health facility for childbirth. This section evaluates the relationships between sociodemographic factors and place of childbirth. The age of a pregnant woman is an important factor in that it is an indicator of whether the woman is at risk of getting obstetrics complications or not. Table 4.1 shows the age distribution of the respondents.

<table>
<thead>
<tr>
<th>Age of Respondents in Years</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-20</td>
<td>31</td>
<td>8.3%</td>
</tr>
<tr>
<td>20-25</td>
<td>125</td>
<td>33.2%</td>
</tr>
<tr>
<td>25-30</td>
<td>138</td>
<td>36.7%</td>
</tr>
<tr>
<td>30-35</td>
<td>58</td>
<td>15.4%</td>
</tr>
<tr>
<td>&gt;35</td>
<td>24</td>
<td>6.4%</td>
</tr>
<tr>
<td>Total</td>
<td>376</td>
<td>100</td>
</tr>
</tbody>
</table>
Majority of the respondents 138 (36.7%) were between 25-30 years, with those above 35 years taking 6.4%. This agrees with a study done in Zambia by Hazemba et al., (2008) where the majority, 103 (41.2%) were of age less than 25 years, 89 (35.6%) were aged 25-34 years, and 58 (23.2%) were of age 35 years or more. It is therefore important to note that every pregnant woman is at risk despite her age hence if a country wants to decrease the maternal mortality rate then they must invest in educating and empowering the society and women of all ages the importance of utilizing skilled birth attendants during childbirth.

4.3 Main source of income of the respondents

The study observed that the major sources of income of the respondents were farming and business among others. The respondents main source of income was analysed and cross tabulated against the place of childbirth and the results were shown in Table 4.2.

Table 4.2: Main source of income

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Home delivery</th>
<th>Facility delivery</th>
<th>Percentage</th>
<th>$\chi^2$, df, P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main source of income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm produce</td>
<td>185</td>
<td>133</td>
<td>84.6</td>
<td>$\chi^2=0.732$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df= 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>p= &gt;0.05</td>
</tr>
<tr>
<td>Business</td>
<td>20</td>
<td>13</td>
<td>8.8</td>
<td></td>
</tr>
<tr>
<td>Employed/salaried</td>
<td>13</td>
<td>12</td>
<td>6.6</td>
<td></td>
</tr>
</tbody>
</table>

The main source of income was farm produce with 84.6% (n=318) respondents. However there was no significant relationship between main source of income and the utilization
of health facility during childbirth ($\chi^2= 0.732; df=2; p>0.05$). This concurs with a study done by Hossain (2005) that showed that when the population is very poor with very low income, they do not give enough attention to their health care needs due to money problems. Women issues become secondary issues and are ignored by the household head hence women lack opportunity to utilize modern facility for child delivery.

A study in Nepal by Wagle et al., (2004) on socioeconomic and physical distance to the maternity hospital as predictors for place of delivery revealed that low socioeconomic status act as a barrier to health facility utilization during delivery. A Nigerian study by Fajemilehin (1991) revealed that 41% of mothers who did not deliver in hospital explained that they could not afford the hospital bill. The main source of income of an individual indeed determines the place of childbirth. The lower the income the higher the chances of not utilizing a facility during childbirth whereas the higher the income earned, the more the chances of utilizing a facility during childbirth.

4.4 Main income earner

In most families in the African setup the head of the household is normally the husband who is always the breadwinner. The main income earner of the family is an important factor in determining the place of delivery as he/she will be an important determinant of financial expenditure. The study sought to find out who the main income earner of the family was and data was presented in Table 4.3.
Table 4.3: Main income earner in the family

<table>
<thead>
<tr>
<th>Variable</th>
<th>Home</th>
<th>Facility</th>
<th>$\chi^2$, df, P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wife/Self</td>
<td>35</td>
<td>31</td>
<td>$\chi^2$ 0.341</td>
</tr>
<tr>
<td>Husband</td>
<td>176</td>
<td>116</td>
<td>df 2</td>
</tr>
<tr>
<td>Support from others (parents, children)</td>
<td>7</td>
<td>11</td>
<td>p &gt;0.05</td>
</tr>
</tbody>
</table>

Majority 78% (n=292) of the families are supported by the husbands who were the main source of income. A comparison between the main source of income and place of childbirth was done and it revealed that there was no significant relationship between the main source of income and the utilization of health facility during childbirth ($\chi^2= 0.341; \text{df}=2; p>0.05$). In most African setting, the husband is the head of the family and in most cases the breadwinner because culture dictates that duties for a man are to work and provide for his family.

4.5 Highest level of education

Education is key in the day-to-day decisions we make. The level of education that a woman may have had is an important determinant of her knowledge on her health. The study sought to find out the respondents level of education and the results were shown in figure 4.1.
Figure 4.1: Highest Level of Education of Respondents

At least 66.2\%(n=249) of the respondents highest level of education was primary school. Thirty point three percent (n=114) had secondary education while only 3.5\%(n=13) had tertiary education and. Mother's education being lower than primary level and not having had antenatal care is also associated with a high prevalence of home delivery without help of SBAs (NDHS, 2006; D'Ambruos, 2005; Say, 2007). A study by Mayhew (2008) also revealed that low female literacy and women aged between 30-39 years were associated with the lower use of SBAs when compared to younger and literate women.

Education is an important determinant in deciding delivery care alternatives. Educated people are able to perceive their health and health related problems better than illiterate people. Most often illiterate people do not access health services despite being economically stable due to various misconceptions. They chose the traditional home delivery system driven by superstitious and traditional beliefs. A study done by Hossain (2005) on determinants of choices of delivery care indicated that increasing maternal
education status is closely associated with a significant decrease in chance of home delivery. This concurs with the study because with the increase of level of education there was a decrease in home delivery. A study by Maureen et al., (2008) on determinants of skilled birth attendant utilization in Afghanistan confirmed that low female literacy is associated with lower skilled birth attendant use in a country in which, nationwide, only 6% of women can read. It will take many years to increase literacy among women of childbearing age through existing programs in primary education and female literacy. Strengthening and expanding these programs should contribute to improving women's health in the long term. An educated person is an empowered person who is able to rationalize all the decisions he/she makes. Women who are more educated have a high self esteem and are equipped with the right attitude to be able to make decisions with a lot of confidence.

4.6 Respondents marital status

In a community, the marital status of an individual normally improves a persons status in that particular society. Table 4.4 below shows data on respondents marital status.

Table 4.4: Marital status of the respondents

<table>
<thead>
<tr>
<th>Variables</th>
<th>Home</th>
<th>Health facility</th>
<th>$\chi^2$.df,p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>33</td>
<td>31</td>
<td>$\chi^2$ 0.0401</td>
</tr>
<tr>
<td>Married</td>
<td>176</td>
<td>120</td>
<td>df 2</td>
</tr>
<tr>
<td>Not living with partner</td>
<td>9</td>
<td>7</td>
<td>$p &lt; 0.05$</td>
</tr>
</tbody>
</table>
Most of the respondents 78.7% (n=296) were married while 4.3 % (n=16) were not living with partners either due to divorce, widowed or separated. There was a significant relationship between marital status and the utilization of health facility during childbirth ($\chi^2= 0.0401; df=2; p< 0.05$). Marital status may influence the choice of delivery place, probably via its influence on female autonomy and status or through financial resources. Single or divorced women may be poorer but enjoy greater autonomy than those currently married. Young single mothers may be cared for by their natal family, which may encourage skilled attendance, especially for a first birth. On the other hand, single mothers may be stigmatised and prefer to deliver at home because they anticipate a negative provider interaction (Duong et al., 2004). A study by Mekonnen (2003) found that married women in a stable relationship are likely to use skilled attendant during childbirth because they plan when to give birth and since it is a wanted baby efforts are made to ensure the safety of both the mother and the baby.

4.7 Religion of the respondents

Religion is often considered as marker of cultural background and is thought to influence beliefs, norms and values in relation to childbirth and service use and women's status. The study sought to compare the religion of the respondents and the utilization of health facility during childbirth and the results were shown in table 4.5.
Table 4.5 Religion of Respondents

<table>
<thead>
<tr>
<th>Variables</th>
<th>Roman catholic</th>
<th>Protestant</th>
<th>$\chi^2$, df, P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>97</td>
<td>121</td>
<td>$\chi^2=0.0401$</td>
</tr>
<tr>
<td>Health facility</td>
<td>70</td>
<td>88</td>
<td>df 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$p &lt; 0.05$</td>
</tr>
</tbody>
</table>

Forty four point seven percent (n=168) of the respondents were Roman catholics, 55.3% (n=208) were protestant. Majority of the protestant (n=121) did not utilize the health facility for childbirth. There was a significant relationship between religion and the utilization of health facility during childbirth ($\chi^2=3.841; df=1; p < 0.05$). A study by Glei et al., (2003) on utilization of care during pregnancy in rural Guatemala revealed that religious groups may be discriminated against by staff, making them less likely to use services. Toan et al., (1996) in a study on utilisation of reproductive health services in rural Vietnam showed that Catholics in Vietnam are less likely to receive skilled care. Depending on the conviction of the various teachings, the religion of a woman may influence positively or negatively utilization of health facility during childbirth

4.8 Respondents number of children

The number of children in a family determine the availability of resources to cater for the family’s need. The study sought to find out the number of children that the respondents had and data was presented in Table 4.6.
Table 4.6: Respondents Number of Children

<table>
<thead>
<tr>
<th>Parity</th>
<th>Health facility</th>
<th>Home</th>
<th>Percentage</th>
<th>$\chi^2$.df,p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>89</td>
<td>90</td>
<td>47.6%</td>
<td>$\chi^2=0.5604$</td>
</tr>
<tr>
<td>3-4</td>
<td>48</td>
<td>85</td>
<td>35.4%</td>
<td>df 3</td>
</tr>
<tr>
<td>5-6</td>
<td>16</td>
<td>21</td>
<td>9.8%</td>
<td>p &gt; 0.05</td>
</tr>
<tr>
<td>&gt;7</td>
<td>5</td>
<td>22</td>
<td>7.2%</td>
<td></td>
</tr>
</tbody>
</table>

Majority of the respondents 48% (n=179) had 1 or 2 children, 35% (n=133) had 3 or 4 children. Ninety of the respondents with 1 or 2 children delivered at home. There was no significant relationship between the number of children a woman had and the utilization of health facility during childbirth ($\chi^2= 0.5604$; df=3; p > 0.05). A study in India by Navaneetham (2002) on utilization of maternal health care services showed that the first birth is known to be most difficult as the woman has no previous experience of delivery. Often a high value is placed on the first pregnancy and in some settings the woman's natal family helps her get the best care possible. In China, a study by Short and Zhang (2004) on use of maternal health services revealed that the one-child-policy deters women with higher order pregnancies from using services for fear of punishment. This concurs with a study done by Wanjira (2011) on delivery practices and associated factors among mothers seeking child welfare services in selected health facilities in Nyandarua South District, Kenya revealed that majority of the mothers 72.3% (225) were attended by skilled birth attendants during their first delivery compared to 54.3% (169) who were attended by unskilled birth attendants during their most recent delivery. Consequently, 73% (227) of the mothers delivered in a health facility during their first delivery.
compared to 57.2% (178) during their most recent delivery. The number of children a woman has determines the utilization of health facility for childbirth. A woman with many children may not utilize the facility due to the perception that they are experienced in childbirth.

### 4.9 Client Related Factors

The client factors include the client’s perceived quality of care, reputation/perceived experiences satisfaction with services-staff attitude, hospital procedures, privacy and confidentiality, services consistent with local beliefs, efficiency among others that either enhance use or disuse of health facility during childbirth.

#### 4.9.1 Respondents parity

The number of times a woman has given birth influence the decision to utilize or not utilize a skilled birth attendant. The study sought to establish the relationship between a woman’s parity and utilization of health facility during childbirth and results were indicated in Table 4.7.

**Table 4.7: Respondent’s total number of pregnancies in a Lifetime**

<table>
<thead>
<tr>
<th>Parity</th>
<th>Home (n=218)</th>
<th>Health facility(n=158)</th>
<th>$\chi^2$.df,p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Para 1-4</td>
<td>190</td>
<td>149</td>
<td>$\chi^2= 0.2750$</td>
</tr>
<tr>
<td>&gt;Para 4</td>
<td>28</td>
<td>9</td>
<td>df 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>p &gt; 0.05</td>
</tr>
</tbody>
</table>

Ninety percent (n=339) of the respondents had between 1-4 pregnancies in their lifetime, most of the women who were above para 5 delivered at home. There was no significant
relationship between parity and the utilization of health facility during childbirth ($\chi^2=0.2750; \text{df}=1; p > 0.05$). This disagrees with a study by Kabakyenga (2012) on influence of birth preparedness, decision making on location of birth and assistance by SBA among women in south-West Uganda which revealed that women who had parity of one or two were more likely to choose assistance by SBAs than those who had parity of five or more. Health workers may recommend a facility delivery for primipara. By contrast, women of higher parity can draw on their maternity experiences and may not feel the need to receive professional care if previous deliveries were uncomplicated. Very high-order births, however, are more risky. Additionally, women with several small children may have greater difficulty in attending facilities due to the need to arrange child care (Stephenson, 2002; Elo, 1992).

4.9.2 Number of pregnancies of the respondents in the last 5 years

The respondent’s number of pregnancies within the last 5 years is an important factor in determining the place of birth. The study sought to find out the respondents number of pregnancies in the last 5 years and results were shown in Table 4.8

Table 4.8: Respondents’ number of pregnancies in the last 5 years

<table>
<thead>
<tr>
<th>No</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>198</td>
<td>52.7%</td>
</tr>
<tr>
<td>2</td>
<td>160</td>
<td>42.6%</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>4.8</td>
</tr>
<tr>
<td>Total</td>
<td>376</td>
<td>100%</td>
</tr>
</tbody>
</table>
Fifty two point seven percent (n=198) of the respondents had one pregnancy in the last five years, 42.6% (n=160) had two pregnancies and 5% (n=18) had three pregnancies in the last five years. The number of pregnancies a woman may have had within a period of 5 years determines the woman’s confidence in the utilization of health facility. Response from focused grouped discussion revealed that “The nurses may humiliate the woman on realizing that her spacing of the children are close together” A woman in the group said “I remember when I went to give birth to my third born the nurse was so rude to me as I tried to ask for help and she kept on referring to me to other women as someone who did not use family planning”

4.9.3 Respondents with children under 5 years

The number of children under five years may influence utilization of health facility. The study aimed to find out the number of respondents with under 5 year old children and the results are shown in Figure 4.2.
Figure 4.2: Number of Respondents with under 5 year old children

Most of the respondents 55% (n=205) had one child under five years, 41% (n=154) had two children under five years while 4% (n=17) had three under five children.

4.9.4 Family size of the respondents

The family size of the respondents is an important factor in determining utilization of health facility because it influences the availability of resources in the family. The study sought to find out the total family size of the respondents and data is portrayed in Figure 4.3.

![Bar chart showing respondents' total family size]

**Respondents total family size**

<table>
<thead>
<tr>
<th>Family Size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>8%</td>
</tr>
<tr>
<td>3-4</td>
<td>27.5%</td>
</tr>
<tr>
<td>5-6</td>
<td>27.5%</td>
</tr>
<tr>
<td>7-8</td>
<td>21.2%</td>
</tr>
<tr>
<td>9-10</td>
<td>6.1%</td>
</tr>
<tr>
<td>&gt;11</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

Figure 4.3 Respondents’ total family size

Thirty eight percent (n=141) respondents total family size was between 3-4, 34% (n=126) respondents between 5-6, 11% (n=42) respondents between 7-8 and 8% (n=39) had a family size of between 1-2 and 3% (n=above nine members. The larger the family the more scarce the resources, hence some very vital services may be overlooked because the family may not be able to afford.
4.9.5 Age of respondents last born

The age of the respondents last born is an important factor in determining the health facility utilization during childbirth. The study sought to find out the age of the respondents last born and the results were shown in Table 4.9.

<table>
<thead>
<tr>
<th>Variables</th>
<th>&lt;1 month</th>
<th>1-3 months</th>
<th>3-6 months</th>
<th>6-9 months</th>
<th>9-12 months</th>
<th>$\chi_2$.df,p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>14</td>
<td>48</td>
<td>30</td>
<td>57</td>
<td>69</td>
<td>$\chi_2$=0.1998</td>
</tr>
<tr>
<td>Health facility</td>
<td>8</td>
<td>47</td>
<td>31</td>
<td>35</td>
<td>37</td>
<td>df=4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>p &gt;0.05</td>
</tr>
</tbody>
</table>

Sixty nine of the respondents who delivered at home had a last born aged 9-12 months while fourteen were less 1 month. There was no significant relationship between age of respondents last born child and the utilization of health facility during childbirth ($\chi_2$=0.1998; df=4; p > 0.05). The age of the last born influences the perception of the woman towards health worker reaction towards them.

4.9.6 Place of birth

The place of birth a woman chooses to utilize during childbirth is very important because it influences an outcome of a healthy baby and a healthy mother. The study sought to find out the place of delivery of the women in Matinyani Sub County in Kitui County and the results were shown in Figure 4.4.
Figure 4.4 Place of Birth

Majority of the respondents 58% (n=218) delivered at home, while 42% (n=158) delivered in health facilities with 22% (n=83) delivering in public health facility, 19% (n=71) in private clinic and 1% (n=4) delivered in a mission hospital. This concurs with a study done by Wanjira, (2011) on delivery practices and associated factors among mothers seeking child welfare services in selected health facilities in Nyandarua South District, Kenya which revealed that of all the deliveries reported, 51.8% were attended by unskilled birth attendants. A report by Kenya Demographic and Health Survey of 2009(KNBS et al, 2010) indicate that 43 percent of births in Kenya are delivered in a health facility, while 56 percent of births take place at home. Home delivery is a problem in most parts of Kenya and unless urgent action is taken the maternal mortality rate will continue to worsen.
4.9.7 Respondents Sources of assistance during childbirth

The source of assistance of the respondent during childbirth is an important factor that determine the outcome of the pregnancy. The study sought to establish the source of respondents assistance during childbirth and the findings were shown in Figure 4.5.

<table>
<thead>
<tr>
<th>Source of Assistance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health professionals</td>
<td>42%</td>
</tr>
<tr>
<td>TBA</td>
<td>33.8%</td>
</tr>
<tr>
<td>Relatives</td>
<td>18.1%</td>
</tr>
<tr>
<td>Self</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Figure 4.5 Source of respondent’s assistance during childbirth

At least 33.8% (n=127) of the respondents deliver under traditional birth attendant, 18% (n=68) are assisted by relatives, 6% (n=23) assist self to deliver while only 42% deliver under skilled attendant. This coincides with a study done by Wanjira (2011) on delivery practices and associated factors among mothers seeking child welfare services in selected health facilities in Nyandarua South District, Kenya which revealed that among the deliveries attended by unskilled birth attendants, 38.6% (452/1170) were by neighbours and/or relatives. Traditional Birth Attendants attended 1.5% (17/1170) of the deliveries while in 11.7% (137/1170) of the deliveries were self assisted. A study by Kabir, 2007 on Safe-delivery practices in rural Bangladesh and its associated factors revealed that
about 94% deliveries took place at homes and 67% were assisted by the untrained traditional birth attendants called Dai. Report by KNBS et al (2009) shows that traditional birth attendants played a vital role in delivery, assisting with 28 percent of births (the same percentage as are assisted by nurses and midwives). Relatives and friends assisted 21 percent of births, and for 7 percent of births, mothers did not receive any form of assistance. Most of the unskilled births are conducted by traditional birth attendants posing a great risk to the mother and the baby.

“Most of the pregnant women in the district give birth at home. All my four children I have been assisted by our own mkunga, who is an old lady that has specialized in assisting women in the community. A 27 year old woman said.”

“My mother was also assisted by mkunga and when I was due to give birth to my firstborn, my mother took me to her. She has been of great help to all mothers in this community. Infact all my children I have given birth in her house with her help. A 34 year old woman said”

4.9.8 Reasons for not utilizing health facility for childbirth

There are several women who do not utilize the health facility for childbirth due to various reasons. The study sought to find out of the respondents who delivered at home the reasons for not utilizing the health facility for childbirth and the results were shown in Table 4.10.
Table 4.10: Respondents’ reason for not delivering in a health facility

<table>
<thead>
<tr>
<th>Reasons for delivering outside of health facilities</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to Health facility</td>
<td>64</td>
<td>29.36</td>
</tr>
<tr>
<td>Travel cost</td>
<td>33</td>
<td>15.14</td>
</tr>
<tr>
<td>Cost of treatment</td>
<td>13</td>
<td>5.96</td>
</tr>
<tr>
<td>Health workers incompetence, lack of professional ethics</td>
<td>14</td>
<td>6.42</td>
</tr>
<tr>
<td>Weak referral system &amp; services</td>
<td>49</td>
<td>22.48</td>
</tr>
<tr>
<td>Unavailability of hospital equipment &amp; supplies</td>
<td>1</td>
<td>0.46</td>
</tr>
<tr>
<td>Precipitate labor</td>
<td>33</td>
<td>15.14</td>
</tr>
<tr>
<td>Non responsive</td>
<td>3</td>
<td>1.38</td>
</tr>
<tr>
<td>Ignorance</td>
<td>8</td>
<td>3.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>218</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Most of the respondents 29.36% (n=64) did not deliver in health facility due to the long distance that have to be covered before reaching the facility. Only 22.48% (n=49) respondents gave weak referral systems and services as reason for not delivering in health facility, 15.14% (n=33) travel cost. A study by Maureen et al., (2008) on determinants of skilled birth attendant utilization in Afghanistan revealed that the presence of user fees was associated with a lower odds of skilled birth attendant use. Facility characteristics were associated with a higher odds of skilled birth attendant use included the type of health facility, presence of obstetrical equipment, and availability of routine antenatal care. A study done in Nigeria by Ezugwu et al., (2011) revealed that the 'pay at the point
of service' policy in public hospitals make accessibility to maternal and child health services a challenging one, as patients have to pay first before services are rendered. This sometimes leads to tragic deaths due to institutional delays in intervention. One woman in the focused group discussion said "I did not deliver in the facility because the distance from my house to the health facility is 50 kilometers" Another woman said "when I went to give birth to my second born I developed some complications and was referred to another hospital, it took my family two days to get means of transport for me" A report from key informant interview revealed that women in the district do not utilize the health facility for childbirth due to the availability of traditional birth attendants and mistrust of the health workers.

4.9.9 Family decision maker

The family decision maker is a key person in determining utilization of health facility during childbirth by woman because he or she is the final word and can not be opposed by any member of the family. The study sought to find out the respondents key decision maker and results were shown in Figure 4.6.
Only 43.6% (n=164) of respondents make own decision on where and who to assist them during childbirth, 26% (n=98) by husband and wife, 13.6% (n=48) decisions are made by the husband, 8.8% (n=33) by mothers and 6.9% (n=26) by mothers in law. This agrees with a study by Kabakyenga (2012) on influence of birth preparedness, decision making on location of birth and assistance by SBA among women in south-West Uganda that revealed that the final decision regarding location of birth was made by the woman herself (36%), the woman with spouse (56%) and the woman with relative/friend (8%).

"My husband is a drunkard he beats me up and spends all his time in the centre. When he is not around, my mother in-law makes all the decisions. A 28 year old woman said"

"My husband works in Nairobi and rarely comes home. I make all the decisions in my house because even when he comes he arrives in the evening and leaves very early the next morning. A 32 year old woman said."

4.9.10 Respondent’s perception on place of childbirth

The perception of a woman on place of child birth is an important factor in that is enhances making informed decision as to where to visit during labour. The study sought to understand the respondents perception on place of childbirth and the results were shown in Figure 4.7.
Majority of the respondents 94% (n=355) acknowledged there was a positive difference between hospital and home delivery, 2% (10) said there was no difference while another 2% did not know. Fifty two percent (n=202) of the respondents believed in facility delivery because it saves the life of both the mother’s and the child, 12% (n=46) because there was no bleeding by the mother after delivery, 3% (12) acknowledged that complications were managed promptly.

4.9.11 Reported advantages for using a health facility for child birth

Different women have different perceptions on health facility as a place for childbirth. The study sought to find out the respondents perception on advantages of hospital delivery and the findings are shown in Table 4.11.
Table 4.10: Advantages of Childbirth in Health facility

<table>
<thead>
<tr>
<th>Advantages of Childbirth in Health facility</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean delivery</td>
<td>16</td>
<td>4.3</td>
</tr>
<tr>
<td>Saves mother’s &amp; child’s life</td>
<td>133</td>
<td>35.4</td>
</tr>
<tr>
<td>Care &amp; prevention of complications</td>
<td>70</td>
<td>18.7</td>
</tr>
<tr>
<td>Shorter labour</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>Non-responsive</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Care of the baby, Advice on baby care</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Clean, saves mothers life, no bleeding &amp; retained placenta</td>
<td>54</td>
<td>14.4</td>
</tr>
<tr>
<td>No bleeding, Saves child’s life, advice on baby care, Shorter labour</td>
<td>81</td>
<td>21.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>376</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

About 27% (n=100) thought health facility was a good place to deliver because it saves the mothers life, 12.2% (n=46) said there is no bleeding if one delivered in a health facility. This perception is shaped by general awareness of the dangers of childbirth and interventions available at health facilities, by individual past experiences with pregnancy, childbirth and health services, as well as by risk assessment of the index pregnancy.
4.9.12 Reported advantages for not using a health facility for child birth

A woman perception on the benefits of home delivery is an important factor on determining whether the woman utilizes the health facility during childbirth or not. The results of the study are shown in Table 4.12.

Table 4.12: Perceptions on advantages for home delivery

<table>
<thead>
<tr>
<th>Reasons for home delivery</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No need for transport</td>
<td>22</td>
<td>5.9</td>
</tr>
<tr>
<td>No cost incurred</td>
<td>6</td>
<td>1.6</td>
</tr>
<tr>
<td>No bleeding</td>
<td>3</td>
<td>0.8</td>
</tr>
<tr>
<td>There is privacy</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>No need for transport and no cost</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>No advantage associated with home delivery</td>
<td>339</td>
<td>90.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>376</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Six percent (n=22) of the respondents who thought home delivery is better said so because there was no need for transport, 1% (n=6) said no cost was incurred while another 1% (n=4) believed privacy and confidentiality was maintained when one delivered at home.

"The good thing about giving birth at home is one is able to maintain her privacy because sometimes the mkunga comes to assist you in your own house, unlike in the health facility where all mothers in labour are placed in one room. A 35 year old woman said."
4.9.13 Antenatal visits made

Antenatal care of a pregnant woman is very vital because it helps to detect early and intervene promptly to problems. The study sought to find out whether women in Matinyani Sub-county attended antenatal clinic or not and how many visits were made and the findings were portrayed in Figure 4.9.

![Antenatal Attendance](image)

**Figure 4.9 Number of Antenatal visits made by respondents during last pregnancy**

At least 99% (n=373) respondents attended antenatal clinic during pregnancy. Fifty three point seven percent (n=202) manage to attend the four recommended visits, 32.2% (n=121) attended three times, 8.5% (n=32) attended twice, 4.8% (n=18) attended once while 0.8% (n=3) did not attend. In Kenya, less than half (47 percent) of pregnant women make four or more antenatal visits while 44% of rural women make four or more visits (KNBS, 2010). A study by Gage (2006) on the effects of the physical accessibility of maternal health services on their use in rural Haiti revealed that the presence of a health worker providing ANC in the community can also increase use of skilled attendance, as
described for Haiti. A study in Mali by Gage (2007) on barriers to utilization of maternal health care found that the level of antenatal care uptake in the enumeration area is highly predictive of individual women's health facility use for delivery, even when controlling for individual ANC use, which suggests that area-level use may be a proxy for other factors including accessibility.

4.9.14 Maternal health education

Maternal education during the antenatal visits is an important factor in determining utilization of health facility during childbirth because the woman is educated on danger signs during pregnancy and delivery hence can be able to make prompt decision when need arise. The study sought to identify the relationship between maternal education and utilization of health facility during childbirth and results are shown in Table 4.13.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Home</th>
<th>Health facility</th>
<th>Percentage</th>
<th>$\chi^2$.df,p</th>
</tr>
</thead>
<tbody>
<tr>
<td>H/E on Maternal health</td>
<td>176</td>
<td>148</td>
<td>86%</td>
<td>$\chi^2=0.460$ df=1</td>
</tr>
<tr>
<td>No H/E on Maternal health</td>
<td>42</td>
<td>10</td>
<td>14%</td>
<td>p &gt; 0.05</td>
</tr>
</tbody>
</table>

Majority of the respondents 86% (n=324) had health education on maternal health. One hundred and seventy six respondents who had health education on maternal health delivered at home. There was no significant relationship between maternal education and the utilization of health facility during childbirth ($\chi^2=0.460$; df=1; p > 0.05). A study by
Stekelenburg (2004) revealed that women in Zambia who know danger signs in pregnancy are more likely to deliver in a health facility as compared to those without such knowledge and a similar but not significant tendency was observed in Southern Laos by Proxay, (2001). In Mali, women who are told about complications at antenatal care are more likely to give birth in a facility (Gage, 2007).

4.9.15 Respondents' source of health education

The source of respondents health education is an important factor in determining whether the health facility will be utilized for childbirth or not this is because if the information is from a reliable source then the women will have confidence in the source and are likely to utilize the health facility. The study sought to establish the source of health education of the respondents and findings are shown in Table 4.14.

Table 4.14 Sources of Health Education

<table>
<thead>
<tr>
<th>Source of information</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community health worker(from community units-CUs)</td>
<td>10</td>
<td>2.7</td>
</tr>
<tr>
<td>Traditional birth attendant</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Relatives</td>
<td>10</td>
<td>2.7</td>
</tr>
<tr>
<td>Health professionals</td>
<td>261</td>
<td>69.4</td>
</tr>
<tr>
<td>Radio</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>CHWs(CUs), Relatives, H/professionals &amp; Radio</td>
<td>3</td>
<td>0.8</td>
</tr>
<tr>
<td>Health professionals &amp; Radio</td>
<td>21</td>
<td>5.6</td>
</tr>
<tr>
<td>CHWs(CUs) &amp; H/professionals</td>
<td>10</td>
<td>2.7</td>
</tr>
<tr>
<td>None responsive</td>
<td>52</td>
<td>13.8</td>
</tr>
<tr>
<td>Relatives &amp; Radio</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>376</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Majority of the respondents 69% (n=261) received health education on maternal health from health professionals, 1% (n=4) from the radio, 2% (n=10) from community health workers, 2% (n=10) from relatives, 5% (n=21) from both health professionals and radio while 13% (n=52) were non responsive. Having access to information through modern media could influence women's knowledge about delivery risks and availability of services.

4.9.16 Respondents' perception on some of maternal health problem

In every community there are certain maternal problems that may influence positively or negatively the utilization of the health facility for childbirth. The study sought to find out the major maternal health problems in Matinyani Sub-county and the results are depicted in Table 4.15.

Table 4.15 Major maternal health problems

<table>
<thead>
<tr>
<th>Major maternal health problems</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy related &amp; Nutritional problems</td>
<td>299</td>
<td>79.6</td>
</tr>
<tr>
<td>Inadequate health care</td>
<td>12</td>
<td>3.2</td>
</tr>
<tr>
<td>Distance to Health facility fur</td>
<td>25</td>
<td>6.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>27</td>
<td>7.2</td>
</tr>
<tr>
<td>Financial constrains</td>
<td>6</td>
<td>1.6</td>
</tr>
<tr>
<td>No Problem</td>
<td>7</td>
<td>1.9</td>
</tr>
<tr>
<td>Total</td>
<td>376</td>
<td>100</td>
</tr>
</tbody>
</table>
Seventy nine point six percent (n=299) of the respondents perceived pregnancy related and nutritional problems to be the major maternal health problems in the community, 6.6 % (n=25) distance to health facility, while 7.2 % (n=27) did not know the maternal problems.

"Some of the problems we experience as women are lack of rains in the region which leads to inadequate food hence develop nutritional deficiencies. A 30 year old woman said."

"Sometimes when a woman is pregnant she may develop some complications as a result of the pregnancy and accessing the health facilities for advice becomes an issue. A 26 year old woman said."

4.9.17 Knowledge about availability of a health facility in the sub-location

The availability of a health facility in a sub location is an important factor in determining utilization of health facility during childbirth. The study sought to find out the existence of a health facility within the respondents sub-location and the results are shown in Figure 4.9.
Figure 4.9 Presence of a health facility

At least 74% (n=279) of the respondents acknowledged the presence of a health facility in their sub location, 24% (n=91) said there was no facility in their sub location while 1% (n=6) did not know.

4.9.18 Estimated distance to the nearest health facility

The distance a woman takes to access a health facility is an important factor in determining the place of delivery. The study sought to find out time taken by the respondents to reach the nearest health facility and the results are shown in Table 4.16.

Table 4.16 Time taken to reach the nearest health facility from respondents house

<table>
<thead>
<tr>
<th>Variable</th>
<th>&lt;30 min</th>
<th>30min- 60 min</th>
<th>&gt;60min</th>
<th>(\chi^2), df, P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>36</td>
<td>126</td>
<td>56</td>
<td>(\chi^2=0.2244)</td>
</tr>
<tr>
<td>Health facility</td>
<td>33</td>
<td>103</td>
<td>21</td>
<td>df=2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P &gt;0.05</td>
</tr>
</tbody>
</table>

For the respondents that acknowledged the presence of a health facility in their sub-location, 18% (n=69) said it took them less than 30 minutes to get to the facility, 61% (n=230) took 30 minutes to one hour to reach the facility while 21% (77) took more than one hour to reach a health facility. There was no significant relationship between the time taken to reach the health facility and the utilization of health facility during childbirth (\(\chi^2= 0.2244; \) df=2; p > 0.05). A study by Maureen et al., (2008) on determinants of skilled birth attendant utilization in Afghanistan revealed that living less than 60 minutes
from the facility was strongly associated with use of facility during childbirth. Studies from Afghanistan, Bangladesh, Malawi and Nepal have shown that living one hour away from the health facility increases the chances of home delivery without a SBA eight times more than if the patient lived a distance of less than one hour away from a health facility. (Kamwendo, 2005; Mayhew, 2008; Anwar, 2008; Koblinsky, 2008). A study done by Rahman and Sarkar (2009) revealed that physical distance to the nearest health facility influences health seeking behavior for maternity health care services among women.

### 4.9.19 Respondents' suggestion on ways to improve health facility utilization

Health facility utilization during childbirth is very important in determining the outcome of a pregnancy. The study sought to find out solutions from the respondents as to how health facility utilization during childbirth would be improved and the results are shown in Table 4.17 below.

**Table 4.17 Respondents’ suggested recommendations**

<table>
<thead>
<tr>
<th>Suggestions on how to promote facility delivery</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avail OBA cards &amp; Offer 24 hour services</td>
<td>60</td>
<td>16</td>
</tr>
<tr>
<td>Build more health facilities, employ staff &amp; improve referral</td>
<td>123</td>
<td>33</td>
</tr>
<tr>
<td>H/E on importance of hospital delivery &amp; dangers of home delivery</td>
<td>137</td>
<td>36</td>
</tr>
<tr>
<td>Employ more staff &amp; Avail equipment</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td>Avail equipment &amp; supplies</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Male involvement on RH issues</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Non-Responsive</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>376</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Thirty six percent (n=137) of the respondents recommended on health education of the community on importance of hospital delivery and dangers associated with home delivery, 33% (n=123) recommended construction of more health facilities, employment of more staff and improvement of referral system, 16% (n=60) recommended on availing OBA cards and offering 24 hour service.

The only way we can improve utilization of health facility for child birth is by providing the OBA cards and the hospital operating on a 24 hour basis.

"My husband says issues of child birth and children are a responsibility of the woman. But I feel if we involved the men in reproductive issues they can be very helpful in sharing of ideas on how to solve some problems. Says a 32 year old woman."

"I feel most of the women are not aware of the dangers associated with home delivery. Health educating the community on dangers of home delivery and importance of hospital delivery would play a key role. A 27 year old woman said."

"If the government can employ more health workers and build more health facilities then many women would give birth in the hospital. A 28 year old woman said."

4.10 Provider related factors

Provider related factors are vital in determining health facility utilization during childbirth by women. They include staff number, training of the staff, and competency of the use of personnel, motivation level, incorrect diagnosis and action.
4.10.1 Health workers availability

The existence of a workforce in the health facility is an important determinant of health facility utilization during childbirth. The study sought to find out the number of the health workers in the facilities and the results are shown in Figure 4.2.11.

![Number of Healthworkers](image)

*Figure 4.2.11: Number of Health workers*

Forty six percent of the health facilities had 1-2 nurses.

4.10.2 Training of the skilled attendants

The type of training a health worker had undergone is an important factor in determining health facility utilization during childbirth because it determines the care a mother with obstetrics emergencies receives when they are taken to the facility. The study sought to find out the type of training/ qualifications that the various health workers had in the district and results are shown in Table 4.18.

<table>
<thead>
<tr>
<th>Trainings undergone</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential Obstetric care</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Focused Antenatal Care</td>
<td>7</td>
<td>64</td>
</tr>
<tr>
<td>Manual removal of placenta</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Essential Obs Care &amp; FANC</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>
Majority of the health workers were trained on Focused Antenatal Care 64%, 18% were trained on essential obstetric care, and only 9% were trained on manual removal of placenta.

### 4.11 Facility factors

Health facility factors such as availability of equipment/facilities, drugs and supplies may influence utilization of health facility. The study sought to establish whether health facilities in the district had the necessary supplies and the results are shown in Table 4.19.

#### Table 4.19 Facilities, Supplies, Equipment and drugs in the health facilities (n=6)

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Yes Expired (%)</th>
<th>Yes Not Expired or In use (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theatre</td>
<td></td>
<td></td>
<td>100 (n=6)</td>
</tr>
<tr>
<td>Stethoscope</td>
<td>100 (n=6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure machine</td>
<td>100 (n=6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighing scale</td>
<td>100 (n=6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery Coach</td>
<td>67 (n=4)</td>
<td>33 (n=2)</td>
<td></td>
</tr>
<tr>
<td>Delivery Pack</td>
<td>67 (n=4)</td>
<td>33 (n=2)</td>
<td></td>
</tr>
<tr>
<td>Drugs (Oxytocin)</td>
<td>50 (n=3)</td>
<td>33 (n=2)</td>
<td>17 (n=1)</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>100 (n=6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parenteral Antihypertensive</td>
<td>67 (n=4)</td>
<td>33 (n=2)</td>
<td></td>
</tr>
<tr>
<td>Parenteral Anticonvulsants</td>
<td>17 (n=1)</td>
<td>50 (n=3)</td>
<td>33 (n=2)</td>
</tr>
<tr>
<td>Parenteral Antibiotics</td>
<td>33 (n=2)</td>
<td>67 (n=4)</td>
<td></td>
</tr>
<tr>
<td>Autoclave</td>
<td>67 (n=4)</td>
<td>33 (n=2)</td>
<td></td>
</tr>
<tr>
<td>Suction Machine</td>
<td>17 (n=1)</td>
<td>83 (n=5)</td>
<td></td>
</tr>
<tr>
<td>Source of power</td>
<td>Elect- 67</td>
<td>Solar- 17 (n=1)</td>
<td>17 (n=1)</td>
</tr>
<tr>
<td>Referral forms</td>
<td>17 (n=1)</td>
<td>83 (n=5)</td>
<td></td>
</tr>
<tr>
<td>Availability of transport or ambulance</td>
<td></td>
<td>100 (n=6)</td>
<td></td>
</tr>
<tr>
<td>Oxygen</td>
<td></td>
<td></td>
<td>100 (n=6)</td>
</tr>
</tbody>
</table>
Fifty percent (n=3) of the facilities had expired oxytocin due to failure of use, 33% (n=2) were ready for use while 17% (n=1) lacked the drug. Sixty seven percent (n=4) had delivery packs and 67% (n=4) antihypertensive respectively. All the facilities lacked theatre facilities, availability of transport and oxygen. Different research studies from Nepal have shown that poor quality services, unavailability and inaccessibility of services, minimal staff support, lack of medicine and equipment and deficiency in the referral systems are some reasons for low use of skilled birth attendants (Abbey et al., 2005; UNICEF, 2010).
CHAPTER FIVE : SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
The aim of this study was to identify the determinants of utilization of health facility during childbirth by women aged 15-49 years in Matinyani Sub County Kitui County, Kenya.

5.2 Summary
The proportion of women not utilizing skilled birth attendant were 58%, and 33.8% were assisted by traditional birth attendants. The main factors associated with this included weak referral systems and long distance to the facilities among others. Findings from focused group discussions and key informant interviews showed some of the reasons associated with underutilization of delivery services in health facilities included ready availability of TBAs, trust in the TBAs, lack of reliable transport, perception that the cost of delivery under a TBA is cheap than that of the health facility and weak referral system. Communities, family members and women must be taught the difference and benefit of SBA services bring to maternal health care.
Seventy four percent of the respondents admitted to having a health facility in their sub-location. Ninety nine percent of the respondents attended the antenatal care but only 53.7% made the recommended four visits. At least 86% of the mothers received health education and majority reported the source of this information was the health professionals.
Majority of H/W trained on FANC while during their basic training while only one nurse was trained on comprehensive reproductive health and had the technical knowhow on how to remove a retained placenta.

Despite availability of some essential drugs in management of obstetric complications, in majority of the facilities they were expired. The facilities that had suction machine & delivery packs were not prepared for any emergency.

5.3 Conclusion

Only 42% of the respondents in the sub-county utilized health facility for child birth. Ninety nine percent of the respondents attended the antenatal care but only 53.7% made the recommended four visits. At least 86% of the mothers received health education and majority reported the source of this information was the health professionals.

Majority of the health workers were trained on FANC while during their basic training while only one nurse was trained on comprehensive reproductive health and had the technical knowhow on how to remove a retained placenta. Forty six percent of the facilities had one to two nurses allocated to give service.

Despite availability of some essential drugs in management of obstetric complications, in majority of the facilities they were expired. The facilities that had suction machine & delivery packs were not prepared for any emergency. All the facilities lacked oxygen and a means of transport. Only one health facility had the required referral forms.

5.4 Recommendations

Based on the findings of the study and the conclusion the following recommendations are made:
1. On-job training of the health workers on comprehensive reproductive health and all update on reproductive health issues to enhance competency in service delivery.

2. Health education on the community on importance of hospital delivery, dangers associated with home delivery by the government, non-governmental organization, faith based organizations and community health worker.

3. Strengthening of referral systems in the district by the government and the community.

4. All the respondents had brought their children to child welfare clinic. It is therefore important for women to be educated on importance of postnatal checkup so that they can attend postnatal clinic to assess the mother's progress and to early detect problems.

5. Training of health workers on good stock control rule of first in first our to avoid expiry of drugs while still in store, and train on infection prevention so that sterilization of equipment can be done to prevent infections.

5.5 Further research

1. A community based studies is recommended to determine women's perception on utilization of health facility during child birth.

2. It is also important to involve men in reproductive issues, further research can be done on men because they are partners or husbands to the women and can be change agents.
REFERENCES


African Population and Health Research Centre (APHRC) and The World Bank (2006)


Health for All Series, No. 1, Geneva, WHO 1978


Gynaecology Obstetric. Review improving availability of EmOC services in Rwanda--
CARE's experiences and lessons learned at Kabgayi Referral Hospital. ppr; 92(3):291-8.
Epub 2006 Jan 24.


Kongnyuy EJ, Mlava G, Broek van den N. Facility-based maternal death review in three
districts in the central region of Malawi: An Analysis of Causes and Characteristics of
Maternal Deaths; Women’s Health Issues; Issue (2009) 19: 14-20

Kongnyuy EJ, Hofman J, Mlava G, Mhango C, Van den Broek N. Availability,
utilisation and quality of basic and comprehensive emergency obstetric care services in


Maternal Neonatal Health, ‘Traditional Birth Attendants: Linking Community and

Utilization in Afghanistan: A Cross-Sectional study


UNFPA (1996) Support to Traditional Birth Attendants Evaluation Findings. 7. UNFPA.


Van Eijk A, Bles H, Odhiambo F, Ayisi J, Blokland I, Rosen D, Adazu K, Slutsker L, Lindblade K. Use of antenatal services and delivery care among women in rural Western


World Health Organization: The Traditional Birth Attendant in Maternal and Child Health and Family Planning: A guide to her training 1975
APPENDICES

APPENDIX I: CONSENT FORM

You are being asked to participate in a research study of: DETERMINANTS OF UTILIZATION OF HEALTH FACILITIES DURING CHILD BIRTH BY WOMEN AGED 15-49 YEARS IN MATINYANI DISTRICT IN KITUI COUNTY.

Participation of this research project is completely voluntary. You have a right to say no. You may change your mind anytime and withdraw. You may choose not to answer specific questions or stop to participate at any time. Whether you choose to participate or not will have no effect on your evaluation.

1. I…………………………….. confirm that I have understood the information provided for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reasons.

3. I agree to take part in the above study.

Your signature below means that you voluntarily agree to participate in this research study.

_________________________________  ______________________  ______________________
Name of Participant                  Date                        Signature

_________________________________  ______________________  ______________________
Name of Researcher                   Date                        Signature
APPENDIX II: QUESTIONNAIRE

This questionnaire is for research purpose and it focuses on delivery practices by women aged 15-49 years who attend post natal check up clinic.

Any information collected shall be private and confidential.

Informed consent will be obtained before interview proceeds.

DISTRICT................................. DIVISION.................................

SUB-LOCATION.......................... VILLAGE.................................

DATE OF THE INTERVIEW ..................

QUESTIONNAIRE NO. ..................

Socio demographic Information/data

1) How old are you? ............

2) What is your main source of income? a) Farm produce □  b) Business □
    c) Employed/salaried □  d) Student □  e) Support from children □

3) Who is the main income earner?
   a) Wife □  b) Husband □  c) Support from children □
4) What is the highest level of educational attended?  a) Primary Incomplete  
   b) Primary Complete  
   c) Secondary Incomplete  
   d) Secondary Complete  
   e) University Incomplete  
   f) University Complete  
   g) Informal education  
   h) none  
   i) Others (Specify)  

5) What is your marital status?  a) Single  
   b) Married  
   c) Divorced  
   d) Widowed  

6) What is your religion?  a) Roman Catholic  
   b) Pentecostal  
   c) Adventist  
   d) Muslim  
   e) Traditional church  
   f) Others (Specify)  

7) How many children do you have?  

8) Number of total pregnancies in lifetime  
   a) One-four  
   b) Five-seven  
   c) Eight-eleven  

9) Number of pregnancies in the last five years  
   a) One  
   b) Two  
   c) Three  

10) Number of under five children  
   a) One  
   b) Two  
   c) Three  
   d) Others (Specify)  

11) Number of total family size  


12) What is the age of your last born........................................? 

13) From where did you give birth? a)Home ☐ b) Public Health facility ☐ Private clinic ☐ c) Others (Specify) ..............................

14) Who assisted you during delivery? a) Health Professional ☐ b) Traditional birth attendant ☐ c) Relatives ☐ d) Self ☐

15) If answer to question 9 is home, what was your main reason for not delivering at a health facility?

a) Distance to the health facility ☐ b) Travel cost ☐ c) Cost of treatment in the health Facility ☐ d) Lack of Privacy and Confidentiality in the hospital ☐ e) Staff incompetence ☐ f) Bad attitude of the health workers ☐ g) Weak referral systems and service Provision ☐ h) Unavailability of Hospital equipment and supplies ☐ i) others (Specify).........

16) Who decide where you gave birth and by whom?

a) Myself ☐ b) My husband ☐ c) Both of us ☐ e) Mother ☐

f) Mother –in-law ☐ g) Traditional Birth Attendant ☐ h) Neighbor ☐ i) Health Worker ☐ j) Others (Specify)..............................

17) Do you think there is a difference giving birth at home and health facility?

a) Yes ☐ b) No ☐ c) Don’t know ☐
18) If you think health facility if better (question 13) how and why?

a) Clean  □  b) Save mothers life  □  c) No retain placenta  □  d) No bleeding  □

□ e) Save child life  f) Shorten labor  g) others (specify) .........................

19) If you think home if better (question 13) how and why?

a) No need of transport  □  b) No cost  □  c) No bleeding  □  d) There is privacy  □

□ e) Others (specify)____________

20) During your last pregnancy how many times did you attend antenatal services at a health facility?

a) Once  □  b) 2 times  □  c) 3 times  □  d) 4 times  □  e) Never attended

21) Do you ever have health education on maternal health? a) Yes  □  b) No  □

22) If yes for question 13 by whom? a) Community health worker  □  b) Traditional birth attendant  □  c) Relatives  □  d) Health Professional  □  e) Radio  □  f) Others (specify)_____

23) In your own understanding name the dangers associated with home delivery

a) Convulsions/fits  □  b) High fever  □  c) Severe headache or blurred vision  □
d) Severe bleeding ☐ e) Retained placenta ☐ f) Obstetric Fistulas ☐

24) What are the major maternal health problems in your community? a) Pregnancy related problems ☐ b) Nutritional problems ☐ c) Inadequate health care ☐ d) Far of Health facility ☐ e) Frequent of pregnancy ☐ f) No problem ☐ g) Don't know ☐ h) Other (specify).........................

25) Do you have any health facility in your sub-location?

a) Yes ☐ b) No ☐ c) Don't know ☐

26) How far is the nearest health facility from you house?

a) Less than 30 minutes ☐ b) 30 minutes to one hour ☐ c) More than one hour ☐

27) In your own words what do you recommend to be done to increase delivery in health facilities?..................................................................................................................................................................................

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

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

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

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

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

........................................................................................................................................................................................................
APPENDIX III HEALTH FACILITY SURVEY TOOL

A) IDENTIFICATION

Name of health facility

District: Matinyani
Division: Matinyani
Sub location: 

Type of health facility

a) District hospital  
b) Sub-district hospital 
c) Health center 
b) Dispensary 

Officer in charge of health facility

Medical Doctor [ ] 1
Clinical Officer [ ] 2
Registered Nurse [ ] 3

Number of health workers at the health facility

Medical doctors
Clinical Officer
Nurses
Nutritionists
Pharmacist
B) TRAINING

1. Have you been trained on the following courses?

<table>
<thead>
<tr>
<th>TRAINING</th>
<th>YEAR</th>
<th>WHERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSENTIAL OBSTETRIC CARE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FANC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance of manual removal of placenta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform assisted vaginal deliver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform blood transfusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform surgery (caesarean section)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform removal of retained products of conception (MVA)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2) In your own opinion why do women fail to deliver in health facility?

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

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

3) Does the facility have 24-hour essential obstetric care?

(a) YES □   (b) NO □
4) Does the facility have 24-hour access to emergency communication?
   (a) YES □   (b) NO □

5) How many qualified staffs work in the maternity wing?

6) What are their qualifications?

7) Do they have current updates on essential obstetric care?
### C) EQUIPMENT/UTILITIES

1) To inspect if the health facility have the following equipment/facilities?

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>YES</th>
<th>NO</th>
<th>REMARKS/ condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Theatre</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Examination coach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Delivery coach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Delivery pack</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Stethoscope</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Blood Pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Weighing scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Refrigerator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Drugs e.g. Oxytocin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Parenteral antibiotics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Parenteral anticonvulsants/anti hypertensive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Suction machine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Oxygen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Referral forms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Availability of an ambulance or transport facilitation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX IV FOCUSED GROUP DISCUSSION SCHEDULE

1. What kinds of maternal problems do mothers have in this community?

2. Where does the community get information on maternal health?

3. How does the community help a mother in labour when problems arise?

4. How do men in the community participate in maternal health care issues?

5. Do the mothers in the community seek care on pregnancy and child birth?

6. What is the preference of delivery place? Why?

7. What are the practices of the mother on selection of delivery place?

8. Who is responsible for making decisions in the family?

9. What are the factors influencing selection of place of child birth? Why?

10. What are the differences between child birth at a health facility or home?

11. What are the religions, traditional and cultural practices of the community during labour?

12. What has been done in the community to improve maternal health?
APPENDIX V KEY INFORMANT INTERVIEW

1. What problems do pregnant women have in this community?

2. How does the community help a mother in labour when problems arise?

3. How do men in the community participate in maternal health care issues?

4. Which is the preferred place of child birth? Why?

5. Who is the main decision maker on health seeking behavior in the family?


7. What religions, traditional and cultural practices of the community influence child birth?

8. What has been done in the community to improve maternal health?
APPENDIX VI MILLENNIUM DEVELOPMENT GOALS

1. Eradicate extreme poverty and hunger
   • Reduce by half the proportion of people whose income is less than $1 a day

2. Achieve universal primary education
   • Ensure that all boys and girls complete a full course of primary schooling

3. Promote gender equality and empower women
   • Eliminate gender disparity in primary and secondary education preferably by 2005, and in all levels of education no later than 2015

4. Reduce child mortality
   • Reduce by two thirds the mortality of children under five

5. Improve maternal health
   • Reduce maternal mortality by three quarters
   • Achieve universal access to reproductive health

6. Combat HIV/AIDS, malaria and other diseases
   • Halt and reverse the spread of HIV/AIDS
   • Halt and reverse the incidence of malaria and other major diseases

7. Ensure environmental sustainability
   • Integrate principles of sustainable development into country policies and programmes; reverse the loss of environmental resources
   • Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss
   • Halve the proportion of people without access to safe drinking water and basic sanitation
   • Improve the lives of at least 100 million slum dwellers by 2020

8. Develop a global partnership for development
   • Develop further an open, rule-based, predictable, non-discriminatory trading and financial system
APPENDIX VI MAP OF EASTERN PROVINCE
APPENDIX VII NCST RESEARCH AUTHORIZATION

NCST RESEARCH AUTHORIZATION

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Our Ref: NCST/RCD/12A/013/76

Date: 17th June 2013

Nancy Maingi
Kenyatta University
P.O Box 43844-00100
Nairobi.

RE: RESEARCH AUTHORIZATION

Following your application dated 29th May, 2013 for authority to carry out research on "Determinants of utilization of health facilities during child birth by women aged 15-49 years in Matinyani District in Kitui County." I am pleased to inform you that you have been authorized to undertake research in Matinyani District for a period ending 31st August, 2013.

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

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

Copy to:
The District Commissioner
The District Education Officer
The Medical Officer of Health
Matinyani District.

DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY
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: P57/21294/10

The Permanent Secretary,
Ministry of Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION NANCY NYAMBURA MAINGI – REG. NO. P57/21294/10

I write to introduce Ms. Nancy Nyambura Maingi who is a Postgraduate Student of this University. She is registered for M.Sc degree programme in the Department of Environmental Health.

Ms. Maingi intends to conduct research for a proposal entitled, “Determinants of Utilization of Health Facilities during Child Birth by Women Aged 14-49 Years in Matinyani District in Kitui County.”

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
Dean, Graduate School
Dear Ms. Maingi,

APPLICATION NUMBER KU/101/190 OF 2013 – "DETERMINANTS OF UTILIZATION OF HEALTH FACILITIES DURING CHILD BIRTH BY WOMEN AGED 15-49 YEARS IN MATINYANI DISTRICT IN KITUI COUNTY" – Version 2

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic, 'Determinants of utilization of health facilities during child birth by women aged 15-49 years in Matinyani district in Kitui County'. – Version 2 dated 24th April 2013.

2. APPLICANT

Maingi Nancy
School of Health Sciences
Kenyatta University
P. O. Box 43844, Nairobi.

3. SITE

Matinyani District, Kitui County

4. DECISION

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

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

AND APPROVED and that the research may Proceed for a period of ONE YEAR starting 24th April 2013.
5. Advice/Conditions

i. Progress reports are submitted to the Kenyatta University Ethics Review Committee (KU-ERC) every six months and a full report is submitted at the end of the study.

ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.

iii. Notify the KU-ERC of any amendments to the protocol.

iv. Submit an electronic copy of the revised proposal to KU-ERC.

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.

PROF. NICHOLAS K. GIKONYO
CHAIRMAN, KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE

I, [Signature], accept the advice given and will fulfill the conditions therein.

Signature [Signature] Dated this day [Date] of [Month] 2013.

cc. Vice-Chancellor
Director: Institute for Research Science and Technology