FACTORS INFLUENCING THE QUALITY OF FREE MATERNITY SERVICES; A CASE OF CHUKA GENERAL HOSPITAL,

THARAKA NITHI COUNTY

BY

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DECLARATION

This research project report is my original work and has not been presented for award of a diploma or conferment of a degree in any Institution or University.

Signature:_____ Date: _____

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This research project report has been presented for examination with my approval as a university supervisor.

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DEDICATION

To my beloved parents for their unwavering support throughout the course of my studies. I greatly appreciate their prayers, words of encouragement and material provision. In addition, I greatly appreciate my wife as well as my brothers and sisters for their great encouragement and moral support.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
CDC	Center for Disease Control
CS	Cesarean Section
HIV	Human Immunodeficiency Virus
KNBS	Kenya National Bureau of Statistics
MDG	Millennium Development Goals
MHC	Maternal Health Care
MM	Maternal Mortality
MMR	Maternal Mortality Rate
MOH	Ministry of Health
NGO	Non-Governmental Organization
SPSS	Statistical Package for Social Sciences
SSA	Sub-Saharan Africa
TBA	Traditional Birth Attendant
UNICEF	United Nation Children's Fund
UN	United Nations
WHO	World Health Organization

ABSTRACT

The free maternity services program entails the provision of antenatal, intrapartum and postnatal care services free of charge in all government health facilities. The program was established by the government of Kenya in a bid to improve maternal and infant health by enhancing access to care at all public hospitals and hence reduce maternal and infant mortality in the country. There has been a significant increase in the number of patients seeking maternity services in public hospitals since the introduction of the program. Despite the increased access to care, there are many challenges facing the delivery of services under the free maternity services program. This is mainly because the state of many public health facilities remains largely unchanged hence compromising their capacity to deliver quality care to the increasing number of patients. These challenges have hence slowed the accomplishment of its goals. The purpose of this study was to examine the factors influencing the quality of free maternity services, a case of Chuka General Hospital. The study employed descriptive survey research design. The target population was the health workers working in all the departments involved in the delivery of free maternity services. Purposive and simple random sampling techniques were used. A pilot study was conducted amongst health workers in the reproductive health clinic. This pretesting of the research instruments helped to establish the validity and reliability of the research instruments. Data collection instruments that were used included questionnaires, interviews and observation checklists. A desk review of the existing patient data was also conducted in the records department. Data was analyzed using descriptive statistics including frequencies and percentages which was facilitated through the use of Statistical Package for Social Sciences (SPSS) version 20.0 for windows. The findings indicated that the human resource capacity, healthcare financing & healthcare infrastructure had a significant influence on the quality of free maternity services at Chuka General Hospital. It is expected that the results of this study will be useful to the government in formulating strategies that will enhance the quality of free maternity services. The study revealed that Chuka general hospital had inadequate staffing and that the number of working hours per day has increased since the introduction of free maternity services. The study thus concludes that due to inadequate staff, hospitals have been unable to effectively implement the free maternity services program. The study further revealed that funds meant to finance the free maternity services program in Chuka general hospital are not availed in good time. Therefore, the study concludes that hospital have been unable to successfully implement the new policy to provide free care due to the fact that the funds are inadequate. The study further revealed that poor healthcare infrastructure and inadequate specialized facilities has to a great extent negatively affected the quality of free maternity services in Chuka General Hospital. Human resource capacity influenced quality of free maternity services by 69.3%; Health financing by 51.1% and healthcare infrastructure by 52.9%. Based on the findings from the study, the researcher recommends that more needs to done by the government to enhance the human resource capacity, healthcare infrastructure and healthcare financing so as to improve the quality of free maternity services offered under the free maternity services program.

CHAPTER ONE :
INTRODUCTION

1.1 Background Of The Study

About half a million women lose their lives every year due to complications arising during the period of pregnancy, delivery or post-delivery. In addition, nearly 4 million newborns die within 28 days of birth (World Health Report, 2005). Jones; Mosher; Daniels (2012) assert that over the last thirty years, there has been an increased effort to improve maternal health accessibility and quality globally. Most of these initiatives have been designed with an emphasis of developing countries, especially those in the Sub-Saharan Africa. The United Nations established a set of eight Millennium Development Goals among which are the reduction of infant mortality and improvement of maternal health (United Nations, 2000). All member states are to achieve the goals by the year 2015.

Banchana (2014) explains that achieving the MDGs, especially improving maternal health has increasingly become the central focus of many multilateral and bilateral donor agencies. Although the developmental agenda emboldened in the MDGs address all countries of the world, sub-Saharan African countries (SSA) have the greatest challenges and stand to benefit most from the promotion of its principles, compared to other regions of the world. In comparison to the rest of the world, SSA countries have the highest rates of infant mortality and maternal mortality (Shaw, 2013). Katzung (2006) states that birth attendance by qualified health personnel is an effective a way of reducing maternal and infant mortality rates. In developing countries, most births are still attended by Traditional Birth Attendants (UN, 2007; Bernis *et al.,* 2003). Inadequate healthcare infrastructure is one of the factors to blame for limiting access to maternal care all over the world. A quality health care system and

quality maternal health are intertwined and one cannot be provided without the other (Maitra, Sheriff, Strachan, 2004).

The high cost of maternal care services has played a big part in limiting access to quality maternity care especially in the developing countries. (Gwatkin & Ross, 2004). In the developed countries, public or private insurance programs exist that enable people to afford quality maternity care. In addition, hospitals are abundant and well equipped to serve. Doctors and other health workers are present in good numbers in relation to the size of the population. The United States, for instance, there exist many insurance plans that cover pregnancy costs (White, 2014). In Ireland and the United Kingdom, a mother is entitled to inpatient, outpatient and casualty services free of charge in a public hospital under the Maternity and Infant Care Service program (Reid, 2007). In India, the government began to pay for prenatal and delivery care to ensure reduction of maternal and infant mortality and morbidity, and there was significant improvement, such that many researchers in the field cited India as the major reason for decreased maternal mortality globally (Green, 2012).

The ability of any given country to offer quality maternal care services is based the organization of the healthcare system in its entirety (White, 2014). For developing countries, immense challenges face the implementation of maternity services due to the poor state of their healthcare systems. A study done in South Africa identifies affordability, availability and acceptability as factors influencing accessibility of health services (Silal, 2012). It is estimated that 5500 women die each year in South Africa due to pregnancy and childbirth related complications. The maternal mortality rate is estimated at 625 deaths for every 100,000 live births (Roedde, 2012). Accessibility to the maternal programs is also limited by race, distance from hospital as well as rural-urban dynamics (Hallstrom; Eerola; Vuento,

2011). Cultural beliefs and practices also influence the delivery of quality maternal care services amongst various communities. In Uganda for example, some women prefer traditional birth attendants to hospital births. This is stemmed from the belief that delivery is a test of endurance that every woman needs to pass. As a result, there is a high incidence of home deliveries which are characterized by a high occurrence of childbirth related complications (Kyomuhendo, 2003).

The maternal mortality rate in Kenya stands at 488 per 100,000 live births (KNBS, 2013). This high statistic is thought to be partly because most women could not afford to have a skilled health worker birth them. Statistics show that 40% of births in Kenya were at a hospital, 28% were attended by a traditional birth attendant while 22% were assisted by friends or family (KNBS, 2013). The safe motherhood conference of 1987 drew attention to Maternal Mortality (MM) and this issue of MM has since remained an international agenda. Evidence gathered from 1997 to 2012, indicates progress in reducing maternal mortality in Kenya, but public health services are still constrained by resource and staff shortages, especially in rural areas (Bray & Jones, 2014).

The free maternity services program was introduced in Kenya from the 1st of June, 2013 when President Uhuru Kenyatta announced that all women will have access to free maternity services countrywide in public hospitals. Before then, the cost of maternity services was unaffordable to many Kenyan women. Budgetary arrangements were made by the government to ensure free maternity care services to mothers (Mwaura, 2013). Many observers from within the healthcare system have expressed concern that these commitments will not be adequate to meet the additional demand placed on healthcare facilities and staff due to the free maternity health policy. Oyugi (2013) questions the feasibility and the

appropriateness of the policy altogether and warns that it might lead to a decline in the quality of services. Oyugi further argues that it could further increase reproductive health inequalities across the country.

Amongst the challenges facing the delivery of free maternity services in Kenya are long distances to health facilities and inadequate transport services especially in the rural areas. In some remote places such as Marsabit, the average distance to a health center is 60km (White, 2014). According to the 2009 Census, 42% of women who gave birth in a home set up cited long distance and lack of transport to hospital as the reason. In the Northern Eastern province, 68.8% of women could not reach the hospital because it is far away compared to 4.9% who did not because it was too expensive (KNBS, 2013). Some cultural practices have also played a role in limiting the accessibility of maternity care. In some communities, birthing at home with a traditional birth attendant is the accepted form of delivery. Cultural practices such as female genital mutilation also restrict access to maternity care. A woman who has undergone the practice would prefer birthing by a traditional birth attendant to a health center (Bishai; Darwish; Adam, 2009) if the two options are presented. Most women in the northern region of Kenya desist from seeking maternal care in health facilities where services are delivered by male health workers (Byford-Richardson et al., 2012).

Though many factors contribute to maternal mortality, health experts from around the world have identified three main factors leading to high maternal mortality rates. These are the three ‘D’s’; delay in taking the decision to seek medical assistance, delay in accessing the appropriate care and the delay of care at health facilities. Lack of access to medical care, poor health education and the low socioeconomic status of women have contributed to the prevalence of high maternal and infant mortality (White, 2014). While the free maternity

services initiative in Kenya has been received enthusiastically, questions have also been raised on its long term viability (Githaiga, 2013).

1.2 Statement of the problem

The free maternity services program was been established by the government of Kenya in a bid to increase access to maternal care and hence reduce maternal and infant mortality in the country. In spite of the improved access, there is limited capacity in most public hospitals to deliver free maternity services. The poor state of healthcare infrastructure, inadequate healthcare financing as well as the chronic shortage of healthcare personnel poses a great challenge towards the delivery of free maternity services program in Kenya. It is notable that only 36% of maternity centers in public hospitals had the required basic equipment for delivery (Mwaura 2013).

The doctor to population ratio in Kenya is 1 doctor for every 17000 people compared to the recommended WHO ratio of 1:1000. This sharply contrasts with the developed countries like Canada where the ratio is 2.2:1000. In general there is a serious shortage of all cadres of healthcare personnel across Kenya (Turan; Miller; Bukusi, 2008). The amount of funds allocated for the free maternity services program is inadequate. A matron working at Pumwani Maternity Hospital, gave a good example, when she noted that while the hospital used to charge Sh10,000 for a caesarian section and Sh5,000 for normal deliveries, the government only reimbursed them Sh5,000 per delivery, which is the usual flat rate, and this creates a huge financial gap (Mwaura, 2013).

According to recent data, there has been a considerable increase in the number of maternal care patients that Chuka General Hospital has received in the past one year after the introduction of the free maternity services program. Although the program has contributed to

high numbers of deliveries in the facility, there are many challenges facing its successful implementation. Unless these challenges are overcome, the population may not fully benefit from the services offered under the free maternal care program. It is for these reasons that this study sought to find out the factors influencing the quality of free maternity services, a case of Chuka General Hospital, Tharaka Nithi County.

1.3 Purpose Of The Study

The purpose of this study was to find out the factors influencing the quality of free maternity services, a case of Chuka General Hospital-Tharaka Nithi County.

1.4 Objectives of the study

i. To determine the influence of human resource capacity on the quality of free maternity services in Chuka General Hospital
ii. To establish the influence of healthcare financing on the quality of free maternity services in Chuka General Hospital
iii. To determine the influence of healthcare infrastructure on the quality of free maternity services in Chuka General Hospital

1.5 Research Questions

i. How does human resource capacity influence the quality of free maternity services in Chuka General Hospital?
ii. To what extent does healthcare financing influence the quality of free maternity services in Chuka General Hospital?
iii. In what ways does healthcare infrastructure influence the quality of free maternity services in Chuka General Hospital?

1.6 Significance Of The Study

This study has brought to light the factors that influence the quality of free maternity services in Chuka General Hospital which serves as the referral hospital for Tharaka Nithi County. It provided information and insights that will assist the government to come up with strategies needed to enhance the delivery of free maternal care services not only in Tharaka Nithi County but also the whole country at large. The study focused on the need for additional infrastructure and health personnel in order to offer quality care for the growing number of patients. The study has also add to the existing body of knowledge pertaining to the delivery of free maternity services.

1.7 Delimitation Of The Study

This study was conducted in Chuka General Hospital which is the referral hospital for Tharaka Nithi County. The study focused on the departments involved in the delivery of free maternity services. These departments include: antenatal care, maternity ward, maternity theatre, postnatal care, laboratory, pharmacy and medical records. Therefore, the study population was the healthcare workers serving in these departments.

1.8 Limitations Of The Study

The respondents were contacted during their working hours and hence this may have limited the amount of time available for providing adequate participation. To overcome this problem, the researcher liaised with the heads of various departments so as to secure some time for the data collection exercise. In addition, the researcher provided a meal incentive over lunchtime during which the respondents participated in the data collection exercise.

1.9 Assumptions Of The Study

Firstly, all the respondents were expected to cooperate and provide reliable information. Secondly, the hospital management was expected to grant access to relevant information pertaining to the delivery of free maternity services. In addition, the sample chosen was expected to be a true representative of the population. Finally, the findings were expected to be a general reflection of the prevalent situation in most public hospitals across Kenya.

1.10 Definitions of significant terms

Antenatal:

The period during pregnancy before birth.

Cesarean Section:

A surgical operation for delivering a child by cutting through the wall of the mother's abdomen.

Delivery:

The process of giving birth.

Family Planning:

The voluntary planning and action taken by individuals to prevent, delay or achieve a pregnancy.

Infant Mortality:

The death of a baby before his or her first birthday.

Intrapartum:

The period lasting from the beginning to the end of the process of childbirth.

Maternity:

The state of being a mother; a hospital facility designed for the care of women before and during childbirth and for the care of newborn babies.

Maternal Health:

This refers to the health of women during pregnancy, childbirth and the postpartum period.

Maternal Mortality:

The death of a woman due to pregnancy related complications during the period of the pregnancy, childbirth or within 42 days after delivery.

Maternity Services:

Medical care accorded to women during the period of pregnancy, childbirth and within 42 days after delivery.

Postnatal Services:

Medical care given to mothers and their newborns after childbirth and lasting up to 42 days after delivery.

Postpartum:

The period that begins immediately after childbirth or delivery and extends for 42 days.

1.11 Organization Of The Study

Chapter one gives the background of the research and introduces the problem statement. It outlines the purpose of the study and its objectives as well as its research questions. The

significance, delimitation, limitations and assumptions of the study are also explained. Significant terms used are have been operationally defined. Chapter two presents a review of literature and relevant research associated with the problem addressed in this study. Chapter three presents the methodology and procedures used for data collection and analysis. Chapter four contains an analysis of the data and presentation of the results. Finally, chapter five offers a summary and discussion of the findings, implications for practice and recommendations for future research.

CHAPTER TWO :
LITERATURE REVIEW

2.1 Introduction

The literature reviewed presents an overview on maternal healthcare services and discusses the trends in maternal and infant healthcare over time. Various aspects of maternity services programs have been discussed with emphasis on free maternal care programs. The challenges surrounding the delivery of free maternity services have been brought to the fore. Theoretical and conceptual frameworks that guided the study are also presented.

2.2 Overview on maternal health

Global health leaders have put increased attention on the challenges facing the delivery of maternal services over the past two decades while simultaneously strengthening initiatives to alleviate the number of maternal deaths. Some of these initiatives include the 1987 Safe Motherhood Initiative, the 1994 International Conference on Population and Development, and most notably the development of the United Nations Millennium Development Goal number five (MDG 5), whose main objective is to reduce the maternal mortality ratio (MMR) by three-quarters from 1990 to 2015 (Obaid, 2009; Ronsmans & Graham, 2006; Starrs, 2006; United Nations General Assembly, 2000).

Maternal morbidity and mortality within sub-Saharan Africa (SSA) is an area of great concern, despite the global attention which aims to improve maternal health care outcomes (Jonge, 2009). Pregnancy and childbirth are generally times of joy for parents and families. Pregnancy, birth, and motherhood in an environment that respects and values women can powerfully affirm women's rights and their social status without endangering their health. The enabling environment for safe motherhood and childbirth depends primarily on the care and attention given to pregnant women and infants by communities and families, the insight

of skilled health personnel, and the availability of adequate health-care facilities, equipment and medicines (McKenzie, 2006). The direct causes of maternal deaths are attributed to obstetric complications during labor and postnatal period including hemorrhage, sepsis, eclampsia, obstructed labor, and abortion complications. High maternal mortality rates are reported to be mainly due to the first two of the three possible delays in reaching care namely; delay in recognizing complications, delay in reaching care and delay in receiving appropriate care (UNICEF, 2013).

In order to alleviate these problems in low resource settings, predominantly in SSA countries, it is widely recognized that access to skilled delivery care at health facilities is key to reducing maternal and perinatal mortality and morbidity (Meda et al, 2008; Ofori-Adjei, 2007; WHO, 2009). As such, various strategies have focused on getting women support before, during and after childbirth to prevent avoidable maternal and infant mortality, emphasizing the importance of skilled care provision. Consequently, the provision of adequate maternal and reproductive health presents major challenges for female populations, since both women's resources and needs are inherently varied with diverse economic, geographical, cultural and religious factors constantly changing throughout the reproductive life span of the individual (WHO, 2009).

Kenya has experienced high maternal morbidity and mortality rates for quite a long time. The most recent estimates set the maternal mortality rate at 488 deaths per 100,000 live births, well above the MDG target of 147 per 100,000 by 2015 (Bourbonnais, 2013). For each woman who dies in childbirth in Kenya, approximately another 20-30 women suffer serious injury or disability due to complications during pregnancy or delivery. These escalated rates have been persistent despite other health indicators over the past few decades (Owino, 2013).

Maternal health outcomes are a crucial indicator of societal development where low maternal mortality translates to better social services and higher rates of development (WHO, 2009). Nonetheless, there is a growing disparity in maternal health outcomes between developed and developing countries creating noticeable inequalities in health outcomes (MOH, 2009). The number of women who die each year has risen to 260,000, during pregnancy and child birth; with 99% of these deaths happening in developing nations. Buckley (2009) suggest that SSA holds a disproportionate burden of the world's maternal deaths, ranging from 400-750 maternal deaths per 100 000 live births (WHO, 2012) as cited by Buckley (2009) representing globally the highest regional maternal mortality rate. This is mainly attributed to the challenges women face in accessing quality maternal services offered by skilled health personnel. In Kenya for instance, only 44% of births are delivered under the supervision of a skilled birth attendant, well below the target of 90% of deliveries by 2015. Traditional birth attendants continue to assist with 28% of births, relatives and friends with 21%, and in 7% of births, mothers receive no assistance at all (Bourbonnais, 2013).

The Kenyan government introduced the free maternity services program on 1st June, 2013. This was a strategic step aimed at improving access to maternal care services in public health facilities across the nation. Soon after its introduction, most health facilities began to feel the impact of the program. Pumwani Maternity Hospital located in Nairobi County registered a record of 100 births on the day of the announcement. By July, the Director of Public Health and Sanitation had estimated a 10% increase in deliveries across the country, with increases of 50% in certain counties. According to Kenyatta National Hospital (KNH) representatives, the number of women seeking maternal care had drastically increased by 100 per cent (Bourbonnais, 2013).

2.3 Rights Framework For Maternal Health

The framework for free maternal services is provided for under several local, regional, and international legal and policy frameworks. Article 43(1) (a) of the Constitution of Kenya 2010 states that:

Every person has the right to the highest attainable standard of health, which includes the right to health care services, including reproductive health care.

The framework is ambitious and demanding. It recognizes the need to strengthen the contribution of maternity care to giving all children the best start in life through protecting and promoting the health and wellbeing of the mother and family. Reproductive health is extensively recognized to include family planning, antenatal, delivery, and postnatal health services. The Kenyan constitution further postulates that a person has the right to emergency treatment (Article 43(2)), the right to inherent dignity and the right to have that dignity respected and protected (Article 28), and the right to access information pertaining to their health (Article 35). The Kenya National Patients' Rights Charter (2013) outlines the right to access health care, the right to receive emergency treatment in any health facility irrespective of ability to pay, the right to the highest attainable quality of health care products and services, the right to be treated with respect and dignity, the right to information, and the right to complain, among others (Bourbonnais, 2013).

Convention to Elimination of All Forms of Discrimination against Women (CEDAW) needs countries to ensure women have appropriate services in connection with pregnancy, childbirth, and postnatal care, including family planning and emergency obstetric care. Kenya has also committed to accomplishing the Millennium Development Goals to reduce the maternal mortality ratio by three quarters and achieve universal access to reproductive

health. In recent years, several African countries (including Burundi, Zambia, Burkina Faso, Liberia, Niger, and Sudan) have enacted policies to make deliveries and/or health care for mothers and children free or nearly free in order to fulfill these mandates. Kenya's new free maternal services policy is a potentially positive step in this direction. However, in order to comply with Kenya's international, regional, and local obligations, implementation of this policy must not override or diminish other rights provided by these frameworks (Kelly, 2013).

There are many expected challenges in translating this refreshed framework into practice. These implementation challenges range from; constrained public service resources in the short to medium term, workforce planning and development needs, to information and data issues. Strengthening the role of maternity care services in promoting and supporting improvements in maternal and infant wellbeing is the key aim of this framework. However, improvements in maternal health and wellbeing need to happen before pregnancy begins and maternity care is needed (Owino, 2013).

2.4 The Spectrum Of Maternal Healthcare Services

Maternal health care encompasses the spectrum of services ranging from antenatal care, delivery/intrapartum care as well as postpartum/postnatal care. Each of these phases of care is characterized by varying levels of attendance by patients. The challenges facing the delivery of services in each of these phases are also different (MOH, 2014).

2.4.1 Antenatal Care

The main objectives of antenatal care are to deliver effective and appropriate screening, preventive and treatment interventions during the period of pregnancy before childbirth. Effective use of antenatal care contributes to better maternal health outcomes and a safer birth since those who attend antenatal care optimally are more likely to seek skilled care at birth. Antenatal care provides an opportunity for assisting the women to make a birth and an emergency preparedness plan. (Souza; Gulmezogulu; Lumbiganon, 2010). During ANC it is possible to detect risk factors for illnesses in both the mother and fetus early enough to effectively manage them. Antenatal care has a three pronged approach: assessment of mother and fetus, provision of preventive and curative health care as well as counseling and patient education (Tritten, 2012).

The number of ANC visits recommended by WHO is a minimum of four visits for the entire period of pregnancy. One can attend more than four times depending on their health status or as determined by their healthcare giver (Dixon, 2013). Despite the introduction of free maternal services in many countries around Africa including Kenya, antenatal care services are still largely underutilized since most women do not realize they are pregnant until the second trimester, making early ANC impossible (Gross, Alba, Glass, Schellenber, Obrist, 2012) The health seeking behavior of women with is dependent upon a number of factors including their social and economic status as well as their religious and cultural practices. The availability and accessibility of services are also important factors that influence the utilization of ANC services Women of lower socio-economic, of lower education especially in the rural centers are less likely to utilize ANC to the full capacity. Further, teenagers who become pregnant are unlikely to utilize ANC services because they are either unaware of the

symptoms of pregnancy or are afraid of the prejudices directed to them from sections of the society (Arthur, 2012).

2.4.2 Intrapartum Care

The quality of care for the mother and her newborn during the process of delivery is dependent on the skillfulness of the attendant(s) and the environment in which the childbirth takes place. A well-equipped health facility with well qualified health personnel is the most ideal location in which childbirth should take place. These personnel are well trained to take handle normal deliveries, assisted deliveries as well as caesarean section deliveries (Myer & Harrison, 2003). However, due to disparities in access to health facilities and a limited number of health professionals, women in Kenya, especially in the rural regions are often unable enjoy quality intrapartum care. The huge geographical distance to the nearest health facility coupled with the patients' cultural beliefs and practices have led many women to give birth under the care of traditional birth attendants (Owino, 2013). In addition the level of education of the mother and her level of awareness about the benefits of a hospital birth influence her choice of caregiver during childbirth. On top of that, it has been shown that antenatal care attendance and a woman's power and ability to make well informed decisions greatly influences the environment in which she chooses to deliver her newborn (Witter, Adjei, Armar-Klemesu, Graham, 2009).

Inadequate access to and underutilization of quality maternal health care services have been key reasons for poor health of the women in the developing countries. Thus, the risk of maternal death may be significantly reduced if the women utilize skilled health personnel for maternal health care services. This serves to ensure that the birth process is handled competently and any complications that arise are dealt with comprehensively (Bourbonnais,

2013). There are programs being implemented in Kenya to prevent maternal and infant mortality, and these are: strengthening of national policies and guidelines in support of increasing skilled care for antenatal care, delivery care and postnatal care; introduction of comprehensive emergency obstetric care services at all the county and national hospitals, and basic emergency obstetric care in some health centers (Jonge, 2009).

2.4.3 Postnatal Care

The postnatal period which is defined as the first six weeks after birth, is critical to the health and survival of a mother and her newborn. The most vulnerable time for both is during the hours and days after birth. The woman is expected to stay under supervision for 24 to 72 hours after delivery. Lack of care in this time period may result in death or disability as well as missed opportunities to promote healthy practices affecting women, newborns and children. Women who deliver in a facility are more than twice as likely to have a postnatal check-up within the first two days of delivery compared to women who delivered outside of a facility (Warren; Njuki; Abuya; Ndwiga, 2013). Half of all postnatal maternal deaths occur during the first week after the baby is born, and the majority of these occur during the first 24 hours after childbirth. The leading cause of maternal mortality in Africa accounting for 34% of deaths is hemorrhage, the majority of which occurs during the post pregnancy period. Sepsis and infection claim another 10% of maternal deaths, virtually all during the postnatal period. HIV-positive mothers are at greater risk of postnatal maternal death than HIV-negative women (Turan et al, 2008).

Sub-Saharan Africa has the highest rates of neonatal mortality in the world and has shown the slowest progress in reducing newborn deaths, especially deaths in the first week of life. Each year, at least 1.16 million African babies die in the first 28 days of life and 850,000 of

these babies do not live past the week they are born (Byford-Richardson et al, 2013). At least one in four child deaths occur during the first month of life. These deaths often take place happen before child health services begin to provide care whereas they could be significantly reduced through the provision of quality postnatal care. Low coverage of care in the postnatal period negatively influences other maternal, newborn, and child health programs along the continuum of care. For example, the lack of support for healthy home behaviors, such as breastfeeding, can have ongoing effects for the child in terms of under nutrition (National Institute for Health and Care Excellence, 2006).

During the postnatal period, the woman benefits from family planning services as well as education on how to care for her newborn. Women who don't receive postnatal care are more likely to have unplanned and poorly spaced pregnancies. Newborns of mothers who attend postnatal clinics are more likely to be healthier and have higher chances of survival during their first year of life. The number of postnatal visits is dependent of the health status of the mother and newborn. It has been shown that women who deliver in a health facility are more likely to seek and benefit from postnatal services compared to those who deliver outside a health facility or under a traditional birth attendant (Leone; Padmadas; & Matthews, 2008).

2.5 Factors Influencing The Quality Of Free Maternity Services

Public health facilities in Kenya have experienced many challenges especially after the introduction of the free maternity services program. Bourbonnais (2013) indicates that only 36% of public health facilities offering delivery services had all the basic delivery room infrastructure and equipment needed, with most of the rural areas and lower level facilities particularly unequipped.

2.5.1 Human Resource Capacity And Quality Of Free Maternity Services

Estimates by the Kenya Health Sector Strategic & Investment Plan (2012-2018) show that current staff levels meet only 17% of minimum requirements needed for effective operation of the health system (Bourbonnais, 2013).

Bourbonnais (2013) notes that Kenya has only 7 nurses per 4,000 residents, half the number the World Bank recommends. Furthermore, the doctor to population ratio in Kenya is 1 doctor for every 17000 people compared to the recommended WHO ratio of 1:1000. These health workers are also unevenly distributed across the country, with noticeable bias in the marginalized areas in the North Eastern and Northern Rift regions. These problems have been escalated by the initiation of free maternal services. Many hospitals within the country have reported increased overcrowding in maternity wards, with some mothers forced to leave the hospital early to make room for others due to bed shortage. Nurses and doctors have also been relentlessly complaining about being overburdened due to the new policy, with most of them working overtime and as few as three nurses and one doctor aiding 30 mothers at a time. Although the Government of Kenya has committed funds to increase staffing, according to Dr. John Ong'ech (Head of Reproductive Health at Kenyatta National Hospital), the promise to increase doctors and nurses in every county has become a challenge (Mangera & Ingati, 2014).

Demographic, epidemiological, technological, economic and political changes have created huge human resource challenges. Research done by the World Bank and World Health Organization has indicated that proper training and motivation of frontline service providers can be just as important, if not more important, than increased financing in attaining human development goals (Silal, 2012). When workforce is properly and continuously trained,

accountability relationships between policymakers, frontline service providers, and users of services are strong hence better results are realized. A highly trained, qualified and effective maternity service workforce, working collaboratively, to use increasingly scarce respective resources efficiently, is the key to developing and sustaining quality maternity services. Education and training for maternity service providers is currently organized and administered separately in Kenya, and there is scope for improvement in interdisciplinary collaboration in this area. There are concerns about whether the current training environment provides adequate and appropriate training for contemporary, evidence informed and emerging collaborative models of care (Warren et al, 2013).

Attrition among health workers and low productivity are attributed to poor and delayed payments in the public sector, lack of promotion, scarce training opportunities and career progression especially under the County Governments. In addition, poor leadership accompanied with harassment and lack of transparency, lack of decent accommodation and poor working conditions has contributed to poor delivery of services. These prevailing circumstances pose a significant threat to effective implementation of the free maternity services program (Mangera & Ingati, 2014).

2.5.2 Health Care Financing and Quality Of Free Maternity Services

The government of Kenya committed Sh3.8 billion to fund the free maternal health care program, with an additional Sh700 million for free access to health centers and dispensaries, Sh3.1 billion for recruitment of 30 community nurses per constituency, Sh522 million for recruitment of 10 community health workers per constituency and Sh 1.2 billion for provision of housing units to health care workers, within its overall allotment of Sh10.6 billion for health care in the 2013/14 national budget. Sh60 billion has also been allotted to

county governments to be used on health, leading to a total of Sh95 billion for health overall. This greatly falls short of the World Bank recommendation that at least 15% of a country's overall budget should be used to fund healthcare. Doctors and other stakeholders have voiced their concerns that the Sh60 billion allotted to county governments will not be used entirely on health, given other priorities like infrastructure, salaries, and local development funds (Akwiri, 2014). Lack of enough funds could seriously endanger the success of the free maternal health program. Slow distribution or insufficient funds that are available for the program could also be problematic. Although some facilities have reportedly been given extra money to cover the influx of deliveries, others face the daunting task of learning to balance the new policy to provide free care with their need to cover costs (Oyugi, 2013).

A matron working at Pumwani Maternity Hospital, gave a good example, when she noted that while the hospital used to charge Sh10,000 for a caesarian section and Sh5,000 for normal deliveries, the government only reimbursed them Sh5,000 per delivery, which is the usual flat rate, and this creates a huge financial gap. According to documentation in other countries that have implemented free delivery services, such as Ghana and Malawi; these funding and implementation gaps, can create serious friction between communities and health staff and between facility managers and higher levels of the health system (Bourbonnais 2013).

2.5.3 Health Care Infrastructure and Quality Of Free Maternity Services

Ensuring well-coordinated, high-quality health care requires the establishment of a supportive health system infrastructure. High-performance health systems require a well-distributed workforce, information systems for data collection, quality improvement analysis, and clinical communication support, as well as the organizational capacity to support

competent services and ongoing improvement efforts (Kyomuhendo, 2003). In order to ensure the success of the free maternity services program, healthcare facilities must be well equipped with the essential equipment that will help facilitate quality basic as well specialized care. Some of the equipment needed for basic care include a well-equipped medical laboratory, fetal and maternal monitors, basic surgical tools, delivery couches and hospital beds. To offer specialized maternal care, a health facility needs specialized imaging equipment and a well-equipped maternity theatre with the right surgical tools. At both the basic and specialized levels of care, there has to be a dependable supply of the required medications (Akwiri, 2014).

The situation in most public health facilities in Kenya is bleak since the required medications and equipment are either in short supply or completely unavailable. This has posed a serious challenge towards the successful implementation of the free maternity services program. The quality of the referral system is crucial to enhancing the quality of maternal care. The hierarchy of maternal facilities only becomes a functioning unit if the referral hospital is efficient and effective. Efficiency and effectiveness of a referral system is largely dependent on the availability and functionality of a well organised ambulance and transport system. Unfortunately, these requirements have not been attained in the public health system in Kenya (Oyugi, 2013).

2.6 Theoretical Framework

This study is grounded on the Andersen healthcare utilization model. This model helps to demonstrate the factors that influence the use of healthcare services. In this study, the model is used to situate women's perspective on free maternal services among an array of characteristics which shape access and utilization Women's maternal health seeking behavior

cannot be isolated to individual decisions. Rather, it is shaped by the socioeconomic, religious, cultural, political and physical environments in which they live. Hence this theoretical framework brings to the fore key issues which shape health outcomes.

2.6.1 Andersen Health Utilization Model

The Andersen health utilization model was developed by Andersen in 1968 to help understand individuals' health use. It is stemmed from the earlier behavioral model whose focus was initially on the family rather than the individual. Andersen and Aday modified the health utilization model in 1995 to increase health seeking knowledge pertaining to vulnerable populations (Rishworth, 2014). This model assists in understanding not only an in-depth perspective of the women's health seeking behavior but also other fundamental components of this study. According to this framework, the usage of health services is determined by three main dynamics namely: predisposing factors, enabling factors and need factors.

Predisposing factors are those socio-cultural characteristics that act at an individual level to determine a person's choices with regard to the use of healthcare services. Predisposing factors are broadly classified to include the social structure, health beliefs and demographic characteristics (Aday, Andersen, 1995). The social structure includes aspects like the level of education, one's occupation, ethnicity, social networks, social interactions and culture. Health beliefs are the attitudes, values and knowledge that people have concerning and towards the healthcare system. Demographic characteristics include the age and gender of persons within the population. Enabling factors are those determinants which influence someone's capability to seek healthcare. They include the ability to afford health services due to one's economic ability, health insurance or favorable government policy. Enabling factors

also include the attractive and desirable characteristics of the healthcare system like the quality of services offered, availability of qualified health personnel and the length of waiting time (Andersen, 1995). Need factors are the most immediate cause of health service use including functional and health problems that generate the need for health services. Need factors represent both the actual and perceived need for healthcare services. Perceived need is how people view their own general health and functional state as well as how they experience symptoms of illness, pain and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional help. Actual or evaluated needs represent true professional judgement about people's health status and their need for medical care (Andersen, 1995).

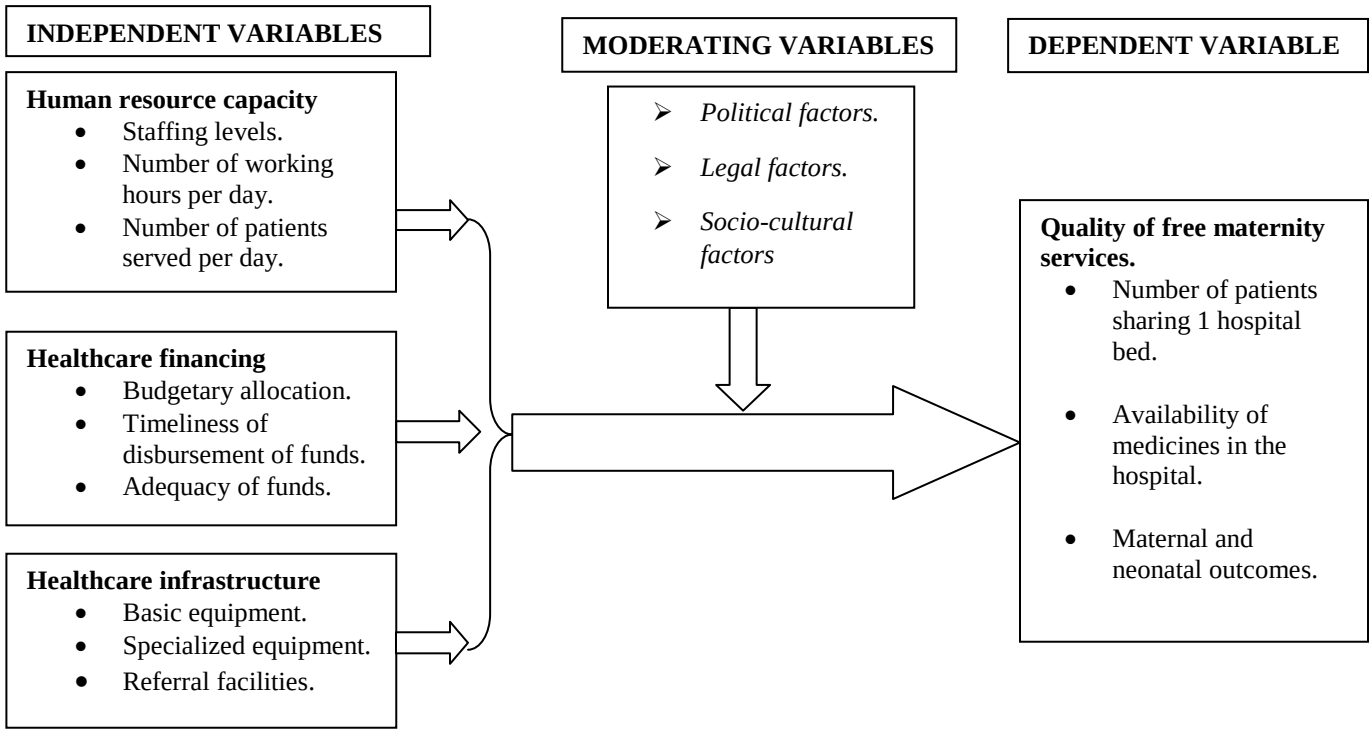
The Andersen framework offers measures of access including potential and realized access as well as equitable and inequitable access. Potential access is the presence of enabling resources allowing the individual to seek care if needed whereas realized access is the actual use of care by the population. Equitable access is characterized by the availability and utilization of healthcare services by all persons of all walks of life without any limitation or hindrance. Inequitable access on the other hand is characterized by skewed and uneven levels of healthcare service availability and utilization amongst different persons in the population. This difference in access is dependent on the socioeconomic structure, health beliefs as well as the presence of enabling resources (Choi, 2010). Andersen also introduces the concept of mutability of the various factors affect health seeking behavior. Factors with high mutability are those that can be easily changed and vice versa. Andersen therefore argues that policy would be justified if it results in the use of resources on factors with high mutability rather than those with low mutability. The model extends the discussion of health by providing the

capacity to link an individual's health decisions to the broader social and political macro environments in which they are situated (Rocheleau, 2008).

2.8 Conceptual Framework

In this study the dependent variable is the quality of free maternity services while the dependent variables are human resource capacity, healthcare financing and healthcare infrastructure. The moderating variables in the relationship between the dependent and independent variable are political factors, legal factors and socio-cultural factors. The indicators for the dependent variable are the number of patients sharing one hospital bed, availability of medicines in the hospital, average waiting time as well as maternal and neonatal outcomes. The conceptual framework is illustrated in Figure 1.

Figure 2.1: The conceptual framework



2.9 Knowledge gaps

Reviewed literature has provided an in depth insight on the components of maternal health care services namely antenatal care, intrapartum care and postnatal care. The challenges facing the provision and utilization of maternal healthcare services have also been discussed in detail. However, limited literature exists on the quality free maternity services programs provided by the government of Kenya within public health facilities. Therefore, this study will go a long way to address the existing knowledge gap on the factors influencing the quality of free maternity services in Chuka General Hospital. These findings will address the existing gap in the body of knowledge. In addition, they will help in the improvement of services not only in the hospital and Tharaka Nithi County but also in the entire country at large.

2.10 Summary of the reviewed literature

The reviewed literature gives an overview on the issues surrounding maternal healthcare. It outlines the global as well as regional and local trends in the state of maternal and infant health. The rights framework for maternal health has been discussed. In addition the factors influencing the quality of free maternity services have been highlighted. The Andersen health utilization model which provides the theoretical framework for this study has also been brought out in the reviewed literature. Furthermore, an elaborate conceptual that guided this study has been illustrated. The literature reviewed emanates from various sources of information and provides a firm foundation of knowledge for the study.

CHAPTER THREE:
RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research procedure and technique employed in this study. Described herein in is the research design, the target population, the sample and sampling techniques, data collection methods as well as data analysis and data presentation methods employed in the study.

3.2 Research design

Research design is defined as a blue print or as a framework for carrying out research efficiently. It details procedures that are considered necessary for data collection and analysis to be used for the study. For a research design to be considered good, bias should be minimized and accuracy of data obtained maximized, ensuring there are very few errors. It should also provide information that is adequate to ensure the research objective's analysis is carried out extensively without losing perspective (Yin, 2013). In view of this, a descriptive survey design was used for this research. A descriptive design is best suited for collecting information that helps to demonstrate relationships and describe the phenomenon under study as they are (Saunders et al (2011).

The study utilized both quantitative and qualitative approaches. According to Stangor (2014), quantitative methods derive conclusions from quantifying data and the use of controlled variables in an empirical approach. On the other hand, qualitative methods derive conclusions from opinions, feelings and subjective reports of the individuals involved. Sreejesh et al (2014) reckons that the results of qualitative methods are not statistically based, but depend on case studies, observations and the consideration of the opinions and views of the individuals involved.

3.3 Target Population

Population is defined as the members of a real or hypothetical set of people, events or objects that the researcher wishes to generalize the results of the research. The target population in this study was approximately 40 health workers who work in the various departments that are involved in the delivery of free maternity services.

3.4 Sampling size and sampling procedure

A sample size of 36 respondents was derived from the population of 40 health workers rendering free maternity services at Chuka district hospital. This sample size was derived using the Krejcie and Morgan table (1970). The 36 respondents were purposively selected from the various departments involved in offering free maternity services. These departments are: Reproductive health clinic (offering ANC & PNC), maternity ward, maternity theatre, radiology department, pharmacy department, medical records department and laboratory department.

3.5 Data collection instruments

The instruments employed in the data collection exercise included questionnaires for the healthcare workers and an interview for the hospital administrator. The questionnaires contained both open and close ended questions. The questionnaires captured the entire phenomenon under study and were administered to 36 health workers. In addition, an interview was conducted for the hospital administrator. He provided information relating to all the variables.

3.5.1 Pilot testing of the data collection instruments

A pilot study was conducted in the reproductive health clinic at Chuka General Hospital before the commencement of the data collection exercise. This helped to streamline the data collection instruments and increased their appropriateness for the data collection exercise. The pilot study went a long way to ensure that the data collection instruments were suitable for application in the research.

3.5.2 Validity of the data collection instruments

Validity is the degree to which a test measures what it purports to measure (Stangor, 2014). Validity is judged by the ability of a tool to measure accurately what it ought to measure. Validity is classified as content, criterion and construct validity. Criterion validity refers to the likelihood that a question will be misunderstood or misconstrued. Pretesting is a good way to increase criterion validity. Content validity will be used to measure the degree to which the items will represent specific areas covered by the study. A measure possesses construct validity to the degree that it confirms to predict correlations with other theoretical propositions (Yin, 2013). Criterion validity was used to establish the validity of the data collection instruments. This was done by pre-testing the instruments amongst 6 health workers working in the reproductive health clinic. Further guidance was sought from my supervisor.

3.5.3 Reliability of the data collection instruments

Reliability is defined as a measure of the degree to which a research instrument yields consistent results or data after repeated trial (Mugenda & Mugenda, 1999). It is the degree to the degree to which the test scores are free from measuring errors. The first method that was be used to test the reliability of the instruments was the test-retest method whereby a pilot

study was conducted in the reproductive health clinic. Secondly, the internal consistency technique was employed. Internal consistency reliability is the extent to which items in a single test are consistent among themselves and the test as a whole. This was done using the Cronbach's Alpha Coefficient. Mugenda and Mugenda (1999) recommend a threshold level of 0.7 for acceptable reliability

3.6 Data Collection Procedures

The researcher collected primary data. The primary data was collected through self-administered questionnaires to the health care workers in the various departments. In addition, primary data was also collected during a personal interview of the administrator in charge of the health facility.

3.7 Data Analysis Method

The method used in data analysis depends on the research design used, the nature of data collected and the measurement methods used. Since this study was a descriptive survey, descriptive data analysis method was most suitable. Descriptive analysis describes a phenomenon in statistical terms as it happens or in an ex-post-facto sense. Data obtained was quantitative and qualitative. It was measured on ratio, ordinal and nominal scales. The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 20.

The data was cleaned and coded accordingly. Qualitative data analysis was used to summarize information gathered from the interview into relevant themes according to the research questions. Quantitative data was analyzed using descriptive statistics calculated as proportions, frequencies and percentages. Pearson correlation was used to determine the strength and direction of association between the variables under study.

3.8 Operational definition of variables

Objectives	Variables	Indicators	Scale	Method of data	Data analysis
To determine the influence of human resource capacity on the quality of free maternity services in Chuka General Hospital.	Quality of free maternity services.	i) Number of patients sharing 1 bed. ii) Availability of medicines	Ratio Nominal	Questionnaires, Interview.	Mean, Mode, Percentages, Frequencies, Correlations, SPSS.
	Human resource capacity.	i) Staffing levels. ii) Number of working hours per day.	Ordinal Ratio	Questionnaires Interview.	
To establish the influence of healthcare financing on the quality of free maternity services in	Healthcare financing.	i) Budgetary allocation. ii) Timeliness of disbursement	Ratio Nominal	Interview, Questionnaires.	
To determine the influence of healthcare infrastructure on the delivery of free	Healthcare infrastructure.	i) Basic equipment. ii) Specialized equipment.	Nominal Nominal	Questionnaires Interview	

Table 3.1: Operational definition of variables

3.9 Ethical Considerations

Information obtained from other sources or authors is acknowledged in the references. A permit was sought from the Commission for Science & Research prior to the commencement of data collection. An adequate and clear explanation on the purpose of the study was provided to each respondent so as to enable them give an informed consent. The participation of the respondents was purely on a voluntary basis. All the participants were assured of absolute confidentiality. The information obtained from the respondents was and will used for purposes of academic research only. The study upheld beneficence for all participants and the whole society at large hence the findings from this study will not have any negative effect to the participants.

CHAPTER FOUR :

DATA ANALYSIS, PRESENTATION AND INTERPRETATION.

4.1 Introduction

This chapter discusses the interpretation and presentation of the findings obtained from the field. The chapter presents the background information of the respondents and the findings of the analysis based on the objectives of the study. Descriptive and inferential statistics have been used to discuss the findings of the study. The questionnaire return rate for this study was 100 percent. This response rate was satisfactory and representative enough to make conclusions for the study. According to Mugenda and Mugenda (1999), a response rate of 50 percent is adequate for analysis and reporting; a rate of 60 percent is good and a response rate of 70 percent and over is excellent. Based on the assertion, the response rate was considered to excellent.

4.2 Demographic Information

4.2.1 Job Cadre of the Respondents

The study sought to determine the job cadre of the respondents. The results are presented in table 4.2

Table 4.2: Job Cadre of the Respondents

Job	Frequency	Percent
Doctor	3	8.3
Clinical officer	4	11.1
Nurse	12	33.3
Laboratory technologist	4	11.1
Pharmacist	2	5.6
Sonographer	2	5.6
Records officer	2	5.6
Nutritionist	3	8.3
Counselor	4	11.1
Total	**36**	**100.0**

From the study findings, most of the respondents indicated that they were nurses as shown by 37.8%, 16.2% of the respondents were clinical officers, 13.5% of the respondents were laboratory technologist and 8.1% of the respondents were counselors. Doctors, sonographer, records officers and nutritionist each took up 5.4% of the respondents, while 2.7% of the respondents were pharmacists. These findings show that respondents were drawn from all job cadres.

4.2.2 Respondents by Department

The study sought to determine the departments in which the respondents were working. The results are presented in table 4.3

Table 4.3: Respondents by Department

Department	Frequency	Percent
Reproductive health clinic (ANC/PNC)	11	29.7
Maternity ward	9	24.3
Maternity Theatre	7	18.9
Pharmacy	1	2.7
Laboratory	5	13.5
Medical records	2	5.4
Imaging/Radiology	2	5.4
Total	**37**	**100.0**

From the study findings, most of the respondents were working in the reproductive health clinic (ANC/PNC) as shown by 29.7%, 24.3% of the respondents were working in the maternity ward, 18.9% of the respondents were in the maternity theatre, 13.5% of the respondents were in the laboratory, 5.4% of the respondents worked in the medical records and imaging/radiology department and 2.7% of the respondents worked in the pharmacy department. These findings depict that all the departments were represented in the study.

4.2.3 Years of Experience

The study further requested the respondents to indicate their years of experience. The results are presented in table 4.4

Table 4.4: Years of Experience

Years	Frequency	Percent
1-5	8	22.2
6-10	25	69.4
11-15	3	8.3
Total	**36**	**100.0**

The study findings revealed that majority of the respondents had worked for 6 to 10 year as shown by 69.4%, 22.2% of the respondents had worked for 1 to 5 years while 8.3% of the respondents had worked for 11 to 15 years. These findings show that the respondents had worked for long enough in their areas of specialization and thus would give credible information related to the study.

4.2.4 Years of Work at Chuka General Hospital

The study requested the respondents to indicate the number of years they had worked in Chuka general hospital. The results are presented in table 4.4

Table 4.5: Years of Work at Chuka General Hospital

Years	Frequency	Percent
[1-5]	31	86.1
[6-10]	5	13.9
Total	**36**	**100.0**

From the study findings, majority of the respondents indicated that they had worked in Chuka general hospital for between 1 to 5 years as shown by 86.1% whereas 13.9% of the

respondents indicate that they had worked there for 6 to 10 years. These findings depict that the respondents had worked for long enough in the hospital to understand it well and thus would give credible information related to the study.

4.3 Human Resource Capacity

The study sought to determine from the respondents the level of staffing. The results are presented in table 4.6

Table 4.6: Level of Staffing

Level	Frequency	Percent
Very inadequate	2	5.6
Inadequate	31	86.1
Adequate	2	5.6
Very adequate	1	2.8
Total	**36**	**100.0**

The findings revealed that majority of the respondents indicated that there was inadequate staffing as shown by 86.1%, 5.6% of the respondents indicated that staffing was very inadequate and adequate in each case, while 2.8% of the respondents indicated that very adequate. These findings reveal that Chuka general hospital had inadequate staffing.

The study requested the respondents to indicate the number of hours they work in a day.

Table 4.7: Average Number of Hours of Work Per Day

Hours	Frequency	Percent
4-6	4	11.1
7-9	10	27.8
10-12	14	38.9
13-15	6	16.7
16-18	2	5.6
Total	**36**	**100.0**

From the study findings, most of the respondents indicated that they work for between 10 to 12 years in a day as shown by 38.9%, 27.8% of the respondents indicated 7 to 9 hours a day, 16.7% of the respondents indicated 13 to 15 hours, while 11.1% of the respondents indicated 4 to 6 hours while 5.6% of the respondents indicated 16 to 18 hours.

The study sought to determine whether the number of working hours per day had increased since the introduction of free maternity services. The study finding are presented in table 4.8

Table 4.8: Increased Hours of Work per Day

Opinion	Frequency	Percent
Yes	22	61.1
No	14	38.9
Total	**36**	**100.0**

The study established that majority of the respondents agreed that the number of working hours per day has increased since the introduction of free maternity services as shown by 61.1% whereas 38.9% of the respondents were of a contrary opinion. These findings show that the number of working hours per day has increased since the introduction of free maternity services in Chuka general hospital.

The study further requested the respondents to indicate the average number of patients they attend to in one day. The study findings are presented in table 4.9.

Table 4.9: Average Number of Patients

Number	Frequency	Percent
25 to 50	5	13.9
51 to 75	8	22.2
76-100	7	19.4
101-125	2	5.6
126-150	6	16.7
>150	8	22.2
Total	**36**	**100.0**

Most of the respondents indicated that they attend 51 to 75 and more than 150 patients in a day as shown by 22.2% of the respondents in each case, 19.4% of the respondents indicated 76 to 100 patients, 16.7% of the respondents indicated 126 to 150 patients, 13.9% of the respondents indicated 25 to 50 patients, while 5.6% of the respondents indicated 101 to 125 patients per day.

The study also requested the respondents to indicate whether there has been a significant increase in the number of patients they attend to per day since the introduction of the free maternity services program.

Table 4.10: Increase in the Number of Patients

Opinion	Frequency	Percent
Yes	34	94.4
No	2	5.6
Total	**36**	**100.0**

The study findings revealed that majority of the respondents agreed that there has been a significant increase in the number of patients they attend to per day since the introduction of

the free maternity services program as shown by 94.4% whereas 5.6% of the respondents were of a contrary opinion. These findings show that there has been a significant increase in the number of patients attended to per day in Chuka general hospital since the introduction of the free maternity services program.

The study further requested the respondents to quantify the increase in the number of patients. The results of the study are presented in table 4.11

Table 4.11: Degree of Increase in the Number of Patients

Number	Frequency	Percent
10 to 20	1	2.8
21 to 30	8	22.2
31 to 40	9	25.0
>50	18	50.0
Total	**36**	**100.0**

The study findings revealed that majority of the respondents indicated that the number of patients have increased by more than 50 as shown by 50.0%, 25.0% of the respondents indicated 31 to 40, 22.2% of the respondents indicted 21 to 30 while 2.8% of the respondents indicated 10 to 20 increase in the number of patients in Chuka general hospital since the introduction of the free maternity services program.

The study also sought to find out whether the respondents had undertaken any training to improve their skills within the last two years. The results of the study are presented in table 4.12.

Table 4.12: Training to Improve Skills

Opinion	Frequency	Percent
Yes	15	41.7
No	21	58.3
Total	**36**	**100.0**

From the study findings, majority of the respondents indicated that they had not undertaken any training to improve their skills within the last two years as shown by 58.3% whereas 41.7% of the respondents were of a contrary opinion.

4.4 Healthcare Financing

The study requested the respondents to indicate whether there was adequate financing directed towards the free maternity services. The results are presented in table 4.13

Table 4.13: Adequacy of Financing

Opinion	Frequency	Percent
No	34	94.4
I don't know	2	5.6
Total	**36**	**100.0**

From the study findings, majority of the respondents indicated that there was inadequate financing directed towards the free maternity services as shown by 94.4% whereas 5.6% of the respondents indicated that they do not know. These findings depict that there is inadequate financing directed towards the free maternity services in Chuka general hospital.

The study further sought to establish the respondents' level of agreement on whether the funds meant to finance the free maternity services program are availed in good time.

Table 4.14: Timely Availability of Funds

Opinion	Frequency	Percent
Strongly agree	2	5.6
Agree	2	5.6
Disagree	27	75.0
Strongly disagree	5	13.9
Total	**36**	**100.0**

From the study findings, majority of the respondents disagreed that the funds meant to finance the free maternity services program are availed in good time as shown by 75.0%, 13.9% of the respondents strongly disagreed while 5.6% of the respondents either agreed or strongly agreed. These findings depict that the funds meant to finance the free maternity services program in Chuka general hospital are not availed in good time.

4.5 Healthcare Infrastructure

The study requested the respondents to indicate their opinion on the adequacy of some basic equipment needed to provide free maternity services.

Table 4.15: Adequacy of Basic Equipment

Equipment	Very Adequate	Adequate	Inadequate	Very Inadequate	Mean	Std. Deviation
Maternity ward beds	0	0	0	36	4.000	2.000
Delivery couches.	0	0	3	33	3.917	1.796
Blood pressure machines	0	0	35	1	3.028	1.441
ANC profile machines	0	0	25	11	3.306	1.017
Fetoscopes	0	0	32	4	3.111	1.277
Drip stands	0	1	19	16	3.417	0.958

From the study findings, majority of the respondents indicated that the following equipment were very inadequate; Maternity ward beds, as shown by a mean of 4.000 and Delivery couches, as shown by a mean of 3.917. Majority of the respondents indicated that the following equipment were inadequate; Drip stands, as shown by a mean of 3.417; ANC profile machines, as shown by a mean of 3.306; Fetoscopes, as shown by a mean of 3.111; and Blood pressure machines, as shown by a mean of 3.028. These findings reveal that basic equipment needed to provide free maternity services in Chuka general hospital are inadequate.

The study further requested the respondents to indicate the availability and adequacy of some specialized equipment. The study findings are presented in table 4.16.

Table 4.16: Adequacy of Specialized Equipment

Equipment	Available & Adequate	Available But Inadequate	Unavailable	Mean	Std Deviation
Ultrasound machine(s)	0	35	1	2.028	0.959
Sonic aid(s)	0	1	35	2.972	1.449
Maternal-Fetal monitor(s)	0	1	35	2.972	1.449
Neonatal Rescucitaire (s)	0	28	8	2.222	0.737
Maternity theatre(s)	0	36	0	2.000	1.000
Referral ambulance(s)	27	9	0	0.500	0.250

From the study findings, majority of the respondents indicated that the following specialized equipment were unavailable; sonic aid(s), as shown by a mean of 2.972 and maternal-Fetal monitor(s), as shown by a mean of 2.972. Majority of the respondents further indicated that the following specialized equipment were available but inadequate; neonatal rescucitaire(s), as shown by a mean of 2.222, ultrasound machine(s), as shown by a mean of 2.028 and maternity theatre(s), as shown by a mean of 2.000. However, majority of the respondents indicated that referral ambulance(s) are available and adequate as shown by a mean of 0.500. These findings depict that most of the specialized equipment are unavailable and inadequate in Chuka general hospital.

4.6 Quality of Free Maternity Services

The study sought to find out the level of agreement on whether the free maternity services program has contributed to improvement in the quality of maternal care at Chuka district hospital.

Table 4.17: Improvement in the Quality of Maternal Care

Opinion	Frequency	Percent
Agree	2	5.6
Disagree	27	75.0
Strongly disagree	7	19.4
Total	**36**	**100.0**

The study findings revealed that majority of the respondents disagreed that free maternity services program has contributed to improvement in the quality of maternal care at Chuka district hospital as shown by 75.0%, 19.4% of the respondents strongly agreed while 5.6% of the respondents agreed. These findings show that free maternity services program has not contributed to improvement in the quality of maternal care at Chuka district hospital.

The study requested the respondents to rate the quality of free maternity services in Chuka general hospital. The study findings are presented in table 4.18.

Table 4.18: Rating the Quality of Free Maternity Services

Rating	Frequency	Percent
Very poor	3	8.3
Poor	33	91.7
Total	**36**	**100.0**

The study findings revealed that majority of the respondents rated the quality of free maternity services in Chuka general hospital as poor as shown by 91.7% whereas 8.3% of the respondents rated it as very poor. These findings reveal that the quality of free maternity services offered at Chuka general hospital is poor.

The study further sought to find out the bed to in-patient ratio in the maternity ward. The results are presented in table 4.19

Table 4.19: Bed to In-Patient Ratio

Ratio	Frequency	Percent
1:3	4	11.1
1:4	26	72.2
1:5 or more	6	16.7
Total	**36**	**100.0**

From the study findings, majority of the respondents indicated that the bed to in-patient ratio in the maternity ward is 1:4 as shown by 72.2%, 16.7% of the respondents indicated that it the ratio is 1:5 or more and 11.1% of the respondents indicated that the ratio is 1:3.

The study further sought to find out from the respondents on the availability of medicines prescribed to patients receiving free maternity services.

Table 4.20: Availability of Medicines

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Std Deviation
Medicines are available all the time	0	0	1	35	3.972	1.931
Medicines are available most of the time	0	0	30	6	3.167	1.181
Medicines are available sometimes	3	31	2	0	1.889	0.837
Medicines are hardly available	2	34	0	0	1.889	0.944
Medicines are never available	0	0	4	32	3.889	1.729

The study revealed that majority of the respondents strongly disagreed that medicines are available all the time, as shown by a mean of 3.972 and that medicines are never available, as shown by a mean of 3.889. Majority of the respondents disagreed that medicines are available most of the time, as shown by a mean of 3.167. The findings also revealed that majority of the respondents agreed that medicines are available sometimes and that medicines are hardly available as shown by a mean of 1.889 in each case. These findings depict that medicines are not always available in Chuka general hospital.

The respondents were asked to indicate their level of agreement on whether the free maternal services program has contributed to improvement in maternal and infant outcomes in Chuka General Hospital.

Table 4.21: Improvement in Maternal and Neonatal Outcomes

Opinion	**Frequency**	**Percent**
Agree	1	2.8
Disagree	33	91.7
Strongly disagree	2	5.6
Total	**36**	**100.0**

The study findings revealed that majority of the respondents disagreed that free maternal services program has contributed to improvement in maternal and infant outcomes in Chuka General Hospital as shown by a mean of 91.7%, 5.6% of the respondents strongly disagreed while 2.8% of the respondents agreed. These findings depict that free maternal services program has not contributed to improvement in maternal and infant outcomes in Chuka General Hospital.

4.7 Regression Analysis

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 20) to code, enter and compute the measurements of the multiple regressions.

Table 4.22: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.852[a]	.725	.709	1.22931

Adjusted R squared is the coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the above table the value of adjusted R squared was 0.709, an indication that there was variation of 70.9 percent on quality of free maternity service due to changes in human resource capacity, health care financing and health infrastructure at 95 percent confidence interval . This shows that 70.9 percent changes in quality of free maternity service could be accounted to changes in human resource capacity, health care financing and health infrastructure. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.852.

Table 4.23: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.39	3	4.130	3.717	.020[b]
	Residual	35.552	32	1.111		
	Total	47.942	35			

From the ANOVA statistics in Table 4.23, the processed data, which is the population parameters, had a significance level of 2% which shows that the data is ideal for making a conclusion on the population parameters as the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value (3.717> 2.901) an indication that human resource capacity, health care financing and health infrastructure significantly influence quality of free maternity service. The significance value was less than 0.05 indicating that the model was significant.

Table 4.24: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.731	.211		3.464	.000
	Human resource capacity	.693	.169	.416	4.101	.012
	Healthcare financing	.511	.144	.336	3.549	.047
	Healthcare infrastructure	.529	.162	.422	3.265	.031

From the data in the above table the established regression equation was

$Y = 0.731 + 0.693 X_1 + 0.511 X_2 + 0.529 X_3$

From the above regression equation it was revealed that holding human resource capacity, healthcare financing and healthcare infrastructure to a constant zero , quality of free maternity service would be at 0.731. A unit increase in human resource capacity would lead to increase in quality of free maternity service by a factor of 0.693. A unit increase in health care financing would lead to an increase in quality of free maternity service by a factor of 0.511 while a unit increase in health care infrastructure would lead to an increase in quality of free maternity service by a factor of 0.529.

At 5% level of significance and 95% level of confidence, healthcare financing had a 0.047 level of significance; healthcare infrastructure showed level of significance of 0.031, while human resource capacity showed a level of significance of 0.012. Therefore, the most significant factor is the human resource capacity. Human resource capacity had the greatest effect on the quality of free maternity service, followed by health care infrastructure while health care financing had the least effect on the quality of free maternity service. All the variables were significant ($p<0.05$).

CHAPTER FIVE:
SUMMARY OF FINDINGS, DICUSSION, CONCLUSIONS AND RECOMMENDATIONS.

5.1 Introduction

This chapter presented the discussion of key data findings, conclusions drawn from the findings highlighted as well as the subsequent recommendations. The conclusions and recommendations drawn were focused on addressing the objective of the study. The researcher had intended to determine the influence of human resource capacity on the quality of free maternity services in Chuka General Hospital; to establish the influence of healthcare financing on the quality of free maternity services in Chuka General Hospital; and to determine the influence of healthcare infrastructure on the quality of free maternity services in Chuka General Hospital.

5.2 Discussion

5.2.1 Human Resource Capacity

The study sought to determine from the respondents the influence of human resource capacity on the quality of free maternity services in Chuka General Hospital. The study revealed that Chuka general hospital had inadequate staffing. In addition, it was shown that the number of working hours per day had increased since the introduction of free maternity services in Chuka general hospital. The study further revealed that there has been a significant increase in the number of patients attended to per day in Chuka general hospital since the introduction of the free maternity services program. Most member of staff indicated that they had not undertaken any training to improve their skills within the last two years.

These findings concur with Mangera & Ingati (2014) that such prevailing circumstances pose a significant threat to effective delivery of quality free maternity services.

5.2.2 Healthcare Financing

The study sought to determine the influence of healthcare financing on the quality of free maternity services in Chuka General Hospital. The study revealed that there is inadequate financing directed towards the free maternity services in Chuka general hospital. In addition, it was also revealed that the funds meant to finance the free maternity services program in Chuka general hospital are not availed in good time. This had greatly limits the success of the free maternal health program. These findings are consistent with those of Oyugi, (2013) that although some facilities have reportedly been given extra money to cover the influx of deliveries, most face the daunting task of learning to balance the new policy to provide free care with their need to cover costs.

5.2.3 Healthcare Infrastructure

The study further sought to establish the influence of healthcare infrastructure on the quality of free maternity services in Chuka General Hospital. The study revealed that basic equipment needed to provide free maternity services in Chuka general hospital were inadequate. The study further revealed that most of the specialized equipment were unavailable and inadequate in Chuka general hospital. This has hampered the hospital's capability to offer quality free maternity services. The findings concur with those of Kyomuhendo (2003) who argued that high-performance health systems require a well trained and distributed workforce, adequate financing to support continuous quality improvement, as

well as the infrastructural capacity to support competent services and ongoing improvement efforts.

5.3 Conclusion

The study revealed that Chuka general hospital had inadequate staffing and that the number of working hours per day has increased since the introduction of free maternity services. The study thus concludes that due to inadequate staff, the hospital was unable to effectively offer quality free maternity under the free maternity services program.

The study further revealed that funds meant to finance the free maternity services program in Chuka general hospital were not only inadequate but also not availed in good time. Therefore, the study concludes that due to the challenges surrounding adequacy & timeliness of financing, the hospital was thus unable to offer quality free maternity services.

The study draws further conclusions that poor healthcare infrastructure and inadequate specialized facilities had to a great extent negatively affected the quality of free maternity services offered in Chuka General Hospital.

5.4 Recommendations

The study thus recommends that the government should employ more staff so as to be able to effectively implement the free maternity services program. The healthcare personnel should also be facilitated to undertake regular training so as to enhance their capacity to deliver quality services.

The study recommends that funds meant to finance the free maternity services program in hospitals should be availed in good time so as to increase effectiveness in the process of

delivering quality free maternity services in hospitals. In addition consideration should be made towards increasing the amount of funds allocated towards supporting the program.

The study further recommends that government should ensure that specialized equipment need in the maternity services should be adequately provided as inadequacy in these equipment results in putting the life of patients at risk.

5.5 Recommendations For Further Research

This study sought to find out factors influencing the quality of free maternity services in Chuka General Hospital-Tharaka Nithi County. The recommendations for further research drawn from this study include the following:

1. The challenges facing the implementation of free maternity services program.
2. The impact of the Beyond Zero Campaign on the implementation of the free maternity services program.
3. The impact of healthcare devolution on the implementation of the free maternity services program.

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APPENDICES

Appendix I : Introductory Letter

UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES
NAIROBI EXTRA-MURAL CENTRE

Your Ref:
Our Ref:
Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
NAIROBI

22nd October 2014

REF: UON/CEES//NEMC/19/194

TO WHOM IT MAY CONCERN

RE: MWITI KIAMBI MAKATHIMO - REG NO L50/65945/2013

This is to confirm that the above named is a student at the University of Nairobi College of Education and External Studies, School of Continuing and Distance Education, Department of Extra- Mural Studies pursuing Master of Arts in Project Planning and Management.

He is proceeding for research entitled **"factors influencing the quality of free maternity services;** A case of Chuka General Hospital, Tharaka Nithi County.

Any assistance given to him will be highly appreciated.

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EXTRA MURAL CENTRE

UNIVERSITY OF NAIROBI
P. O. Box 30197
NAIROBI
NAIROBI EXTRA-MURAL CENTRE

Appendix II: Statement of Introduction

I am carrying out a research on "Factors influencing the quality of free maternity services; a case of Chuka General Hospital, Tharaka Nithi County." This is in partial fulfillment of the requirements for the award of a Master of Arts degree in Project Planning & Management of the University of Nairobi.

I kindly request you to assist me by responding to all questions in this questionnaire/interview frankly and precisely to the best of your knowledge. All the information will be treated confidentially and will be used for the purpose of the research project only. The overall findings of this research may be availed to the participants upon request.

Thank you for your kind assistance and cooperation.

Yours sincerely,

Mwiti Kiambi Makathimo,

Masters student, UoN.

Appendix III: Questionnaire for Healthcare workers

This questionnaire will help to gather information about **the factors influencing the quality of free maternity services in Chuka General Hospital.** You are required to fill the questionnaire with information that is truthful and accurate to the best of your knowledge and in accordance with the instructions provided herein. All the data picked from this questionnaire will be used for academic purposes only and will be treated confidentially. Interested participants will be given feedback on the overall findings of this academic research upon request. Please respond to each question by providing a tick on the most correct option or by filling in the relevant information as may be appropriate.

Part A: General Information:

1. What is your job cadre? (Tick one that applies to you amongst the options provided)

   [Doctor] [Clinical officer] [Nurse] [Laboratory technologist] [Pharmacist] [Sonographer] [Records officer] [Nutritionist] [Counselor] [Other](Specify)…….

2. In which department do you work? (Tick alongside one most appropriate from the list provided below).

   a. Reproductive health clinic (ANC/PNC).

   b. Maternity ward

   c. Maternity Theatre

   d. Pharmacy

   e. Laboratory

   f. Medical records

   g. Imaging/Radiology

3. How many years of experience do you have in your area of specialization?

   [<1] [1-5] [6-10] [11-15] [16-20] [>20]

4. Out of the years of the total number of years given in 3 above, for how many years have you worked at Chuka General Hospital?

   [<1] [1-5] [6-10] [11-15] [16-20] [>20]

Part B: Human resource capacity:

5. With regard to the number of personnel in your department, which of the options given below best describes the level of staffing? (Tick one appropriate answer).

   [Very inadequate] [Inadequate] [Adequate] [Very adequate]

6. a) What is the average number of hours you work in a day?

   [1-3] [4-6] [7-9] [10-12] [13-15] [16-18] [>18]

   b) Has the number of working hours per day increased since the introduction of free maternity services? [Yes] [No]

7. a) What is the average number of patients you attend to in one day? (Tick one appropriate response from the options provided below)

   [<25] [25 to 50] [51 to 75] [76-100] [101-125] [126-150] [>150]

   b) Has there been a significant increase in the number of patients you attend to per day since the introduction of the free maternity services program? [Yes] [No]

   c) If your response is NO in question **7b** above, go to question 8, if YES, please quantify the increase by ticking the most applicable option from those provided below & proceed to question 8.

   [<10] [10 to 20] [21 to 30] [31 to 40] [41 to 50] [>50]

8. Have you undertaken any training to improve your skills within the last two years?

   [Yes] [No]

Part C: Healthcare Financing.

9. In your opinion, is there adequate financing directed towards the free maternity services program? [Yes] [No] [I don't know]

10. Please give one short explanation for your response in question 9 above.

    ……
    ……
    ……

11. The funds meant to finance the free maternity services program are availed in good time. (Please respond by ticking the most appropriate option from those provided below)

    [Strongly agree] [Agree] [Disagree] [Strongly disagree]

Part D: Healthcare infrastructure.

12. Regarding the adequacy of basic equipment needed to provide free maternity services, please indicate your opinion by ticking in the appropriate box in the tabular options provided below. Give one response for each type of equipment.

	Very adequate	Adequate	Inadequate	Very inadequate
Maternity ward beds				
Delivery couches.				
Blood pressure machines				
ANC profile machines				
Fetoscopes				
Drip stands				

13. Concerning the specialized equipment indicated in the table below, indicate whether they are: (i) available & adequate, (ii) available but inadequate or (iii) unavailable.

	Available & Adequate	Available but inadequate	Unavailable
Ultrasound machine(s)			
Sonic aid(s)			
Maternal-Fetal monitor(s)			
Neonatal Rescucitaire(s)			
Maternity theatre(s)			
Referral ambulance(s)			

Part E: Quality of free maternity services.

14. The free maternity services program has contributed to improvement in the quality of maternal care at Chuka district hospital (Please respond to this statement by ticking the most appropriate response from the options given below)

    [Strongly agree] [Agree] [Disagree] [Strongly disagree]

15. How would you rate the quality of free maternity services on a scale of 1 to 5 as given below? (Please tick one most appropriate response)

    1-[Very poor] 2-[Poor] 3-[Good] 4-[Very good]

16. What is the bed to in-patient ratio in the maternity ward? (Give your response by selecting one of the options given below)

    [1:1] [1:2] [1:3] [1:4] [1:5 or more]

17. With regard to the availability of medicines prescribed to patients receiving free maternity services, select (tick) one most appropriate response (either 1,2,3 or 4) for each of the five availability options provided.

	1.Strongly agree	2.Agree	3.Disagree	4.Strongly disagree
Medicines are available all the time				
Medicines are available most of the time				
Medicines are available sometimes				
Medicines are hardly available				
Medicines are never available				

18. The free maternal services program has contributed to improvement in maternal and infant outcomes in Chuka General Hospital. What is your response to this statement? (select/tick the most appropriate response)

    [Strongly agree] [Agree] [Disagree] [Strongly disagree]

19. In your opinion, mention one most significant measure that can be taken to help enhance the quality of free maternity services.

    ……..

    Thank you for your participation.

Appendix IV : Interview Schedule for the Hospital Administrator

Opening of the interview:

Greetings. My name is Mwiti Makathimo, a postgraduate student from the University of Nairobi. I am conducting a study on the factors influencing the quality of free maternity services in Chuka General Hospital. This is in partial fulfillment of the requirements for the award of a Master of Arts degree in Project Planning & Management. Thank you for agreeing to be interviewed. The information collected will be used for academic purposes only. All matters of confidentiality will be adhered to and you will not be quoted directly in any report of this study unless with your permission. I will be writing down your answers as the interview progresses. The interview will take about 30 minutes. Are you comfortable to proceed with the interview?

1. Let's start with some background information:
    a. What position do you hold in the hospital?
    b. For how long have you worked in the hospital?
    c. Have you held any other positions in the hospital previously?
    d. What is your area of professional specialization?
2. Regarding the free maternity services program, impact has it had on service delivery in this hospital? Benefits? Challenges?
3. Which hospital department(s) is/are involved in offering the free maternity services?
4. About the human resource capacity in the department(s) outlined in question 3 above:
    a. How many doctors/nurses/other cadres are there?
    b. Is the number of staff in line with the recommended norms on staffing level? Please explain.

c. Have there been additional members of staff after the introduction of the program?

d. What training opportunities are there for these members of staff?

e. What is your take on the working conditions of these members of staff?

f. In your opinion, what needs to be done with regard to the human resource so as to enhance their capacity to deliver services efficiently & effectively?

5. About the financing of the free maternity services at the hospital:

   a. Has the free maternity services program received adequate financing? Please explain.

   b. What partners have helped to fund the program?

6. About the hospital infrastructure used to offer free maternity services:

   a. Please outline the basic & specialized equipment that is available at the hospital and the general working condition.

   b. What referral facilities does the hospital have?

   c. Has any equipment (basic/specialized/referral been acquired since the introduction of the free maternity services program? Who financed this?

   d. Is the existing infrastructure adequate? Please explain.

   e. In your opinion, what infrastructural improvements need to be done to facilitate better service delivery?

7. Regarding the quality of free maternity services offered in this hospital:

   a) How would you grade the quality of services offered?

   b) Has the quality of maternal care changed since the introduction of free maternity services program? If Yes, how?

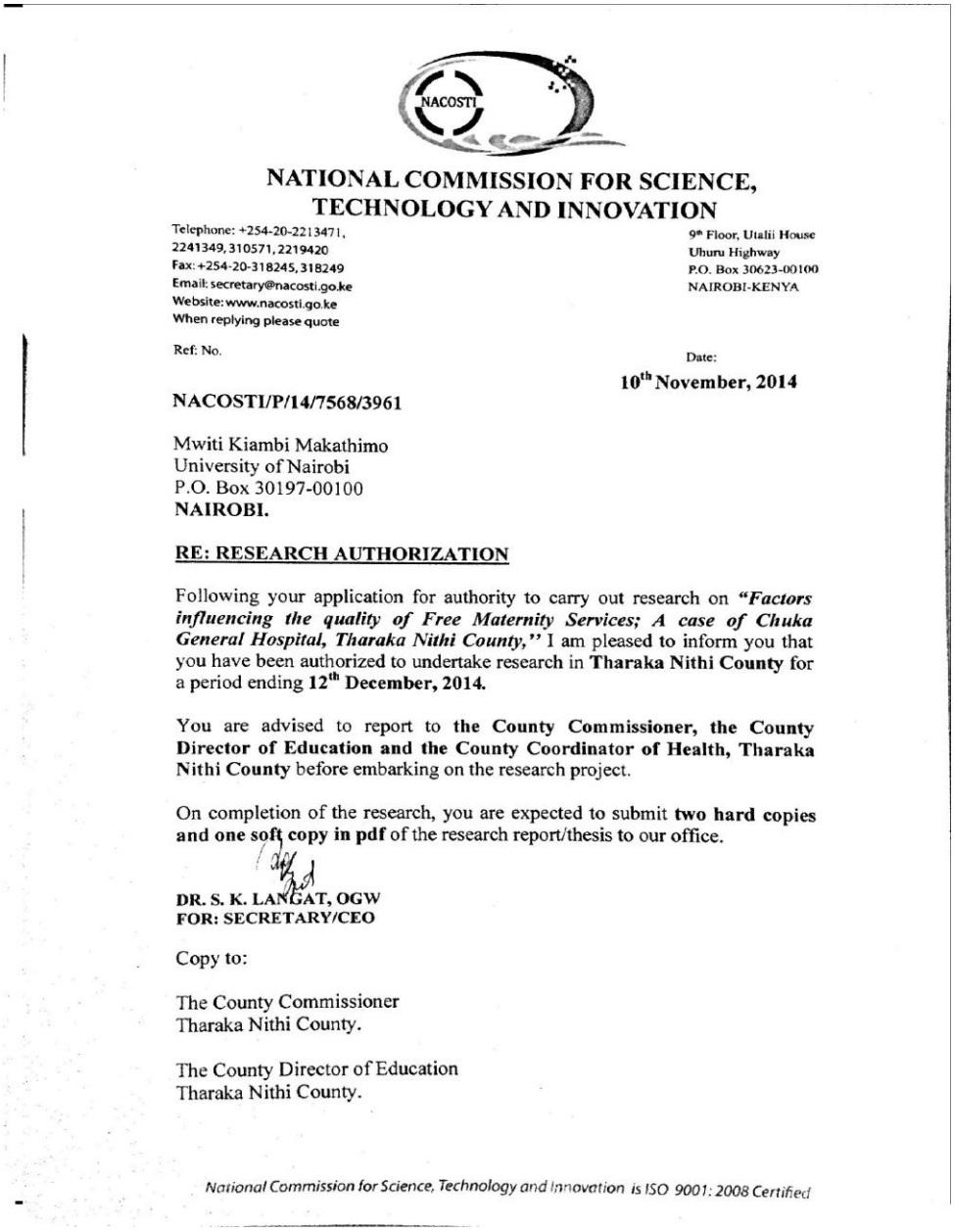
c) What characteristics of care given under this program best describe the quality of the services provided?

8. What do you believe should be done to enhance the quality of the care offered under the free maternity services program?
9. Do you have any other comments about the free maternity services program?

End of interview questions.

Thank the interviewee for his/her time.

Appendix V: Research Permit.



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9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:
10th November, 2014

NACOSTI/P/14/7568/3961

Mwiti Kiambi Makathimo
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Factors influencing the quality of Free Maternity Services; A case of Chuka General Hospital, Tharaka Nithi County,"*** I am pleased to inform you that you have been authorized to undertake research in **Tharaka Nithi County** for a period ending **12th December, 2014.**

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

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

DR. S. K. LANGAT, OGW
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
Tharaka Nithi County.

The County Director of Education
Tharaka Nithi County.

National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified

Appendix VI: Research Approval Letter.

MINISTRYOF HEALTH
OFFICE OF THE COUNTY DIRECTOR OF HEALTH
THARAKA NITHI

CELL: 0722 304 901
Fax:

When replying please quote
Ref: GEN/CD/TNI/VOL.1/98

OFFICE OF THARAKA NITHI COUNTY
HEALTH DIRECTOR
P.O. Box 8
THARAKA NITHI

Date: 17th November, 2014

The Secretary /C.E.O
National Commission for Science, Technology& Innovation
P.o Box 30623-00100
Nairobi –Kenya

Dear Sir/Madam

RE: MWITI KIAMBI MAKATHIMO: L50/65945/2013; M.A.P.P.M;UON

In reference to your research authorization letter **Ref: NACOSTI/P/14/7568/3961** dated 10th November 2014,the above named student of the University of Nairobi has been allowed to undertake a research on "***Factors Influencing the Quality of Free Maternity Services; A case of Chuka General Hospital, Tharaka Nithi County.***"

He will be accorded any necessary assistance needed to facilitate the research.

Thank you.

COUNTY DIRECTOR OF HEALTH THARAKA NITHI COUNTY

DR.J.E THIONGO
COUNTY DIRECTOR OF HEALTH
THARAKA NITHI COUNTY
C.c:
County Commissioner
Tharaka Nithi County

County Director of Education
Tharaka Nithi County

Medical Superintendent
Chuka General Hospital

Appendix VII: Krejcie & Morgan table

TABLE 1
Table for Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.
S is sample size.