DETERMINANTS OF UTILIZATION OF FREE MATERNAL HEALTH CARE IN MUHURU AND NYATIKE DIVISIONS, NYATIKE SUBCOUNTY, KENYA

BY

CHRISTINE K. MUGAMBI

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE AWARD DEGREE OF MASTER OF PROJECT PLANNING AND MANAGEMENT.

UNIVERSITY OF NAIROBI

OCTOBER, 2014

DECLARATION

This Project is my original work and has not been submitted for any award to any other university.

Signature---------- Date ----------

This Project has been submitted for examination with our approval as the university supervisors:

Signature---------- Date----------

DR. RAPHAEL ONDEKO NYONJE

SENIOR LECTURER

DEPARTMENT OF EXTRA MURAL STUDIES

UNIVERSITY OF NAIROBI

Signature---------- Date----------

Dr. JOSHUA WANJARE

LECTURER

SCHOOL OF BUSINESS ADMINISTRATION,

UNIVERSITY OF NAIROBI

DEDICATION

To my lovely family, my husband Robert Mache and my daughter Keysha Bilinga for their inspiration, support and encouragement throughout the study and my parents Mr. and Mrs. Mugambi for their support and prayers during the time of writing this report.

ACKNOWLEDGEMENT

I wish to extend my sincere thanks to my very humble but thorough supervisors: Dr. Raphael Nyonje, Senior Lecture at the department of Extra-Mural Studies, University of Nairobi and Dr. Joshua Wanjare, Lecturer, School of Business Administration, University of Nairobi who, despite their busy schedules offered me immeasurable academic guidance, mentorship and encouragement during the entire research process. A lot of thanks to Mr. Michael Ochieng a lecturer at the department of Extra-Mural Studies, University of Nairobi for his support and advice during the process of the my research proposal. Special thanks the 2012 Masters class in Project Planning and Management especially my group members Phenny, Moureen, Judith, Linda and the Late Chris who have continued to share their experiences, resource as well as intellectual criticism that has sharpened my focus.

I want to sincerely express my heartfelt gratitude to my family and friends who have supported me both financially and emotionally for their contributions towards the completion of this research project report. Their encouragement has helped me to forge a head even in difficult times.

Finally, may I at this juncture thank the entire community of the University of Nairobi for availing this wonderful chance.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

The free maternal health care was introduced in the year 2013 to improve access to maternal care for Kenya to meet the fifth millennium development goal which is to improve maternal health, to reduce maternal deaths and to make safe maternal care accessible to many people. The program however has had so many challenges that are still affecting its effective implementation to achieve its intended objectives. There is a higher rate of women seeking the services compared to the numbers that are actually served implying that there is a gap in demand and provision of the service. The study sought to explore the determinant of utilization of free maternal health care. It had four objectives namely: To establish the level at which socioeconomic factors influence utilization of free maternal health care. To assess the extent to which administration of the free maternal care influence the utilization of free maternal health care. To examine how mothers' attitude influence utilization of the free maternal health care. To examine how knowledge of mothers on free maternal health care influence the utilization of free maternal health care. To assess these objectives, the study will involve a descriptive survey design. The study involved a population of 9960 women attending post natal care and from this probability proportional to size (PPS) sampling method was used to sample the respondents to be chosen from the different health facilities a sample of 370 women, 12 CHWs in Nyatike Sub County and 5 CHWs in Muhuru division took part in the study. Split half technique was used to determine the reliability of the questionnaire. This involved administering the same questionnaire twice to mothers and Community health workers in one health facility which was excluded from the actual study. They were administered respectively to explore the determinant of utilization of free maternal health care and analyzed using descriptive statistics. Descriptive statistics included frequency tables and cross tabulation. Computer based package such as SPSS was useful in the analysis after which the findings were interpreted arrived at the conclusions and recommendation based on the study findings. The study findings established that, utilization of the free maternity care was associated with access to information on the free maternal care by the health facilities this is so because a proportion of 92.7% of the mothers who used the free maternity care had access to the information on the services from health facilities. The study shows that quality services at the health facility level influenced utilization of free maternal health care among women. Hospital physical conditions, availability of social amenities such as water supply, functional toilet and all necessary equipment also greatly influenced women decision to utilize the free maternal health care. There was also relation between cost and utilization with facility charging no extra fee registering more mother than those that charged. A significant number of women received the information through the radio in comparison to the other media of communication channels this calls for deliberate action from the service providers to target radio and put strategies to use print and other channels. It is therefore important for the health professionals to understand the barriers that hinder women from utilizing the free maternal health care as this provides evidence to address women's problems using the community strategy model rather than the medical model that only looks at the current disease map as the only problem of the client.

LIST OF ABBREVIATIONS AND ACCRONYMS

ANC- Ante Natal Care

CHMT- County Health Management Team

CHEW - Community Health Extension Workers

CHW - Community Health Workers

CSA - Central Statistical Authority

DHIS- District Health Information System

GDP- Gross domestic product

GOK- Government of Kenya

KNCHR- Kenya National Commission on Human Rights

MDG- Millennium Development Goals

MNCH- Maternal Newborn Child Health

PSI- Population Services International

SNNPR - Southern Nations, Nationalities, and People's Region

SPSS – Statistical Package for Social Scientists

TBA- Traditional Birth Attendant

USAID- United States Agency for International Development

WHO- World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

At the turn of the 21st century, 189 countries endorsed the Millennium Declaration and signed up to meeting eight goals. The fifth of these goals is to "improve maternal health" (Lancet, 2005). Several countries have come up with different strategies to meet this millennium development goal (MDG). In India for example Sonalde (2006) explains that the government has been seeking to improve the utilization of maternal care by institutionalization of child deliveries by ensuring that deliveries are taking place in the hospitals. More than 40% of child deliveries in Chhattisgarh and 79% in Madhya Pradesh were institutional in 2012, compared with 34.9% in Chhattisgarh and 76.1% in Madhya Pradesh in 2011. This was after the government started paying for prenatal and delivery care to ensure access, and saw successes in improving the number of hospital deliveries and also in reducing maternal mortality, so much so that India is cited as the major reason for the decreasing global rates of maternal mortality (Denise, 2010).

Paying for maternal care should however go along with other investments in the maternal care as observed in some countries that have successfully adopted free maternal care. For example in Australia where the maternal healthcare system is lauded as one of the best in the southern hemisphere, there is universal maternal care that is tax-funded by public insurance program and covers most medical care, including physician and hospital services and prescription drugs (Steven, 2011).Before the inception of the program, the government of Australia invested heavily on health facilities to the extent that two thirds of the entire bed spaces of hospitals in Australia are found in public hospitals, there is a proportion of 10 nurses and midwives for every 500 women and up to 9% of the GDP is spent on health (World bank, 2003).

Other studies point out that cost is just one important factor in determining utilization of maternal care. A number of socio demographic characteristics of the individual affect the underlying tendency to seek and utilize maternal care (Addai, 2000). In this regard, good examples are maternal age and parity, which have been examined as determinants of

health care use repeatedly (Adekunle et al., 2000; Celik and Hotchkiss, 2000; Leslie and Gupta, 2009). The greater confidence and experience of the older and higher parity women towards utilization of maternal care, together with greater responsibilities within the household and for child care, have been suggested as explanatory factors for their tendency to use maternal services less frequently (Kwast and Liff, 2008).

Maternal education has also been shown repeatedly to be positively associated with the utilization of maternity care services (Addai, 2000; Addai, 2008; Akin and Munevver, 2006; Beker et al., 2003; Celik and Hotchkiss, 2000; Ferdnandez, 2004; Stewart and Sommerfelt, 2001). Although, in general, women in higher socioeconomic groups tend to exhibit patterns of more frequent use of maternal health services than women in the lower socioeconomic groups, factors such as education appear to be important mediators in ensuring mothers adopt maternal care (Addai, 2000;Addai, 2008; Leslie and Gupta, 2009).

Another important determinant of utilization of maternity care services, especially in Africa, is the cultural background of the woman (Leslie and Gupta, 2009; Pelto, 2007). The cultural perspective on the use of maternal health services suggests that medical need is determined not only by the presence of physical disease but also by cultural perception of illness (Addai, 2000). In most African rural communities, maternal health services coexist with indigenous health care services; therefore, women must choose between the options (Addai, 2000). The use of modern health services in such a context is often influenced by individual perceptions of the efficacy of modern health services and the religious beliefs of individual women (Adetunji, 2001). Moreover, in many parts of Africa, women's decision making power is extremely limited, particularly in matters of reproduction and sexuality. In this regard, decisions about maternal care are often made by husbands or other family members (WHO, 2008). Availability of women's time is also important. In developing countries, women spend more time on their multiple responsibilities for care of children, collecting water or fuel, cooking, cleaning, growing food, and trade than on their own health (World Bank, 2004a).

Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries. In most rural areas in Africa, one in three women lives more than five kilometers from the nearest health facility (World Bank, 2004b). The scarcity of vehicles, especially in remote areas, and poor road conditions can make it extremely difficult for women to reach even relatively nearby facilities. Walking is the primary mode of transportation, even for women in labor (Williams et al., 2005; World Bank, 2004b). In rural Tanzania, for example, 84 percent of women who gave birth at home intended to deliver at a health facility but did not due to distance and lack of transportation (Bicego et al., 2007). Fees reduce women's use of maternal health services and keep millions of women from having hospital-based deliveries or from seeking care even when complications arise. Even when formal fees are low or nonexistent, there may be informal fees or other costs that pose significant barriers to women's use of services. These may include costs of transportation, drugs, food, or lodging for the woman or for family members who help care for her in the hospital (Gertler and van der Gaag, 2008; Gertler etal., 2008).

Kwast and Liff (2008), in their study of maternal mortality in Addis Ababa, showed that women who did not receive maternity care were often poor, illiterate, and unmarried, with limited knowledge of maternity care services. The study also showed that the risk of non attendance was higher for pregnant women who were first pregnant between the ages of 10 and 18. In a nationally representative sample survey in Ethiopia, receipt of maternity care was found to vary by age, residence, and other socio demographic factors (CSA, 2003). Another study in Addis Ababa showed that lack of time, absence of illness, and lack of awareness are the major reasons for nonattendance for antenatal care (Mesganaw et al., 2000). Mengistu and James (2006), in their study in the Arsi Zone of central Ethiopia, found maternal age, parity, lack of time, education, marital status, and women's economic status to be significant predictors of utilization of maternity care. A study in Yirgalem Town and in the surrounding Southern Nations, Nationalities, and People's Region (SNNPR) of Ethiopia showed that women's education, inadequate household income, and unwanted pregnancy were important predictors of antenatal care utilization (Belay, 2007). A large-scale community and family survey in SNNPR

concluded that although a number of socio demographic factors are important in urban areas, they are of less relevance in the rural part of the study area. Socio demographic factors including parity, age, and education appeared to influence the use of maternity care services in urban areas. In contrast, distance and travel time were identified as important factors in the rural parts of the country (Mekonnen, 2008).

Kenya has long suffered from high maternal morbidity and mortality rates. 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 (Otieno, 2013). The main reason for this state of affairs is the fact that so many births were administered by unqualified people who could not handle complications during pregnancy and at delivery and general lack of facilities to handle deliveries (Kenya National Commission on Human Rights, 2012). The free maternal health care in Kenya was introduced in the year 2013 to increase the number of hospital deliveries and reduce maternal mortality. This program however faces many challenges such as insufficient funding, little investment in new infrastructure, lack of equipment and low staffing (Kenya National Commission for Human Rights, 2013). Even with these challenges, the Director of Public Health and Sanitation in Kenya estimated a 10% increase in deliveries across the country, with increases of 50% in certain counties (PSI Kenya, 2013). According to Owino (2013), within a month of setting up the free maternal care the number of pregnant women seeking maternal care had increased by 100 per cent in the main delivery health facilities in Kenya.

1.2 Statement of the Problem

Several researches have been done on utilization of maternal health care and factor determining it. Laura et al (2012) explored the barriers to access of maternity care in Kenya. Laura et al (2012) only focused on the attitude of women towards access of maternity in Kenya. She did not investigate how socioeconomic factors of the women, administration of the maternity care and knowledge of the mothers were affecting access to maternity in Kenya. Mwaniki (2004) explored the socio economic factors affecting utilisation of maternity care in Mbere District in Kenya, he found maternal age, parity, lack of time, education, marital status, and women's economic status to be significant

predictors of utilization of maternity care. He however fails to explore the influence of attitude of women and administration of maternal care on the utilization of maternity care. These studies also did not explore the determinants of utilization of free maternity which was introduced by the jubilee government. Whereas free maternal services are free and available in all public hospitals (dispensaries and health facilities in Kenya, each hospital operates according to its own localized framework and conditions of services depending on the available resources. Mothers who are expected to go for maternity services at any hospital of their choice during delivery vary by socio-economic backgrounds, levels of awareness and knowledge and the manner the maternal care is administrated by the various facilities. However, the proportion of women seeking the free maternal care has been increasing at a higher rate, according to Owino (2013) who found out that within a month of setting up the free maternal care the number of pregnant women seeking maternal care had increased by 100 per cent in the main delivery health facilities in Kenya. However, there is great concern about the number of women who do not have access to skilled labor and emergency care.

In Nyatike sub county out of a possible 2180 pregnant women mapped out by the CHWs only 916 women attended the (WHO) recommended 4 ANC visit before delivery, only 58% percentage of the women delivered with a skilled birth attendant (health facility report, DHIS 2013) leaving a significant number of births having taken place at home or under the watchful eye of the traditional birth attendants (TBA) who in most case do not have the proper skill to conduct deliveries hence resulting to increase in maternal deaths and child mortality which would be averted if women utilized the free maternal service available. In the 17 health facility serving a population of 163,377 the number of health care personnel is wanting with only one facility in charge and one nurse manning the faculties in most facility this affect the administration health care services to women in the study area. This gap needs to be investigated to ensure increase in utilization of the free maternal health care among mothers hence decrease in child mortality and improvement in maternal care.

"Therefore, determinant of utilization of free maternal health care should be investigated.

1.3 Purpose of the Study

The purpose of the study was establish the determinant of utilization of free maternal health care in Muhuru and Nyatike, Nyatike Sub County

1.4 Objectives of the study

The following were the objectives of the study;

i. To establish the level at which socioeconomic factors influence utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County.
ii. To assess the extent to which administration of the free maternal care influence the utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County.
iii. To examine how mothers' attitude influence utilization of the free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County.
iv. To examine how knowledge of mothers on free maternal health care influence the utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County.

1.5 Research Questions:

This study was guided by the following questions;

i. At what level does socioeconomic factor influence utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County?
ii. To what extent does administration of the free maternal health care influence the utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County?
iii. How does mother's attitude influence utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County?
iv. How does knowledge of mothers on free maternal health care influence utilization of free maternal care in Muhuru and Nyatike Division, Nyatike Sub County?

1.6 Significance of the Study

It was envisaged that the findings of this study would be important to stakeholders in the health sector such as the ministry of health, the facility health management teams and donor partners in establishing the key determinant of utilization of the free maternal care. Knowing these factors would be important in possibly establishing the barriers that hinder effective utilization of this important program or the factors that promote its utilization. With knowledge of the barriers and promoters of the program the stakeholders would know what factors to include and address in the free maternal care policy to make it a success.

It was hoped that the findings of the study would be important to the mothers who would use or are planning to use the free maternal care program as they would know the determining factors that affect its effective utilization so as to know its benefits, administration and challenges. With this important information, the mothers would be informed of it in fact they should adopt it and how they can contribute to make the program a success.

It was also hoped that the findings of this study would be of great importance to the fathers and men on maternal issues hence ensuring their full participation and support to women during the period.

It was also hoped that the findings of this study would contribute to the body of knowledge by providing important literature on determinants of the utilization of the free maternal care program. Considering that this is still a new program that has not been widely explored, the findings of this study will be very important to future researchers because they will have documented findings from this research on that topic.

1.7 Assumptions of the Study

The following were the assumptions of the study; the respondents would be aware of the state and operations of the free maternal care in Nyatike. The quality of infrastructure in the different health facilities in Nyatike is not significantly different. The qualification of

the health workers in the different health facilities in Nyatike is uniform. All the health facilities in Nyatike have an equal probability of administering deliveries.

1.8 Limitations of the Study

This study had the following limitation: some health workers were out of session at the time of conducting the study due to leaves or off. This was addressed by the researcher replacing the missing respondents with their colleagues who work in the same section.

The other limitation that affected the study was that some health facilities more so in Muhuru area, were inaccessible due to poor roads or bad weather. This was minimized by starting the research early in the day and making up for days that were interrupted by having additional days for data collection.

The study was limited by some respondents – the mothers - were uncooperative and did not complete the questionnaires as required. This was dealt with by explaining to the respondents the importance of the study before collecting the data and the researcher sought the consent from them for voluntary participation in the study.

1.9 De- limitation of the study

The study was delimited to health facilities in Muhuru and Nyatike Divisions, Nyatike Sub County. The study was conducted over the year 2014. The respondents involved in the study were health facilities in-charge, the Community Health Extension Workers (CHEWs), Community Health Workers (CHWs) and the mothers. The study was also restricted to Muhuru and Nyatike, Nyatike Sub County. Finally the study was delimited to use of questionnaires and interviews as the main approaches for collecting data.

1.10 Definitions of Significant Terms used in the Study

Mortality – Incidences or new cases of deaths from maternal deliveries

Maternal care - Maternal health refers to refers to the health of women during pregnancy, childbirth and the postpartum period.

Knowledge - refers to a state of awareness of free maternal health care.

Utilization of service - refers to use of free maternal care by women during pregnancy.

Utilization of free maternal health care- Use of free delivery services by women during pregnancy at the public health facilities.

Maternal health - Maternal health refers to the well being of a mother during pregnancy and after pregnancy.

Postnatal care - Postnatal care is the assistance given to a mother for a period of six weeks from the time of delivery.

Postnatal services - Postnatal services comprise of physiotherapy, physical examination, immunizations, family planning, and healthcare education on childcare, breast-feeding, treatment and counselling services.

Skilled birth attendant- refers to people with midwifery skills including doctors, midwives, clinical officers or other trained health workers

1.11 Organization of the study

This document is organized into five chapters: chapter one – introduction, chapter two – literature review, chapter research methodology, chapter four data analysis and interpretation and chapter five summary of the findings and recommendations. Chapter one covers the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, basic assumptions of the study, limitations of the study, delimitations of the study, definitions of significant terms used in the study and organization of the study. Chapter two provides a review of

literature related to the study thematically as per the research objectives, the theoretical framework, the conceptual framework as well as the summary of literature reviewed. Chapter three focused on the research methodology discussed under the following sub-headings; Research design, target population, sample size, sample selection, research instruments, pilot testing of the instruments, validity of research instruments, reliability of research instruments, data collection procedures, data analysis technique and ethical issues in research. Chapter four provides the data analysis and presentation of the study finds as per the four study objectives. Finally chapter five focuses on the summary of the findings, discussions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, the conceptual framework and literature on the topic of study is reviewed. The conceptual framework provided is based on the utility function which is an economic concept of in production. The theory explains that the utilization of a commodity and the consequent satisfaction incurred from using the input depends on various inputs that make up the product (Chung, 2012).The literature shows the role of free maternal health care and also outlines some of the factors found to influence utilisation of maternal health services in the various studies carried out in the different countries.

2.2 Socioeconomic factors and utilization of free maternal care

Studies indicate that one thing that determines the extent of utilization of free maternal care and by extension, medical care is the socioeconomic factors (Adekunle et al., 2000; Celik and Hotchkiss, 2000; Leslie and Gupta, 2009). A number of socio economic characteristics of the individual determine the underlying tendency to seek maternal care (Addai, 2000). In this regard, good examples of socio economic factors that determine extent of utilization of care include the maternal age and parity of the mother, which have been examined as determinants of maternal health care and repeat use; the age of mothers – there is greater confidence and experience of the older people on maternal care; higher parity women; greater responsibilities within the household by the women for child care increases their level of utilization of maternal care (Kwast and Liff, 2008).

Studies also indicate that maternal education has also been shown repeatedly to be positively associated with the utilization of free maternity care services (Addai, 2000; Addai, 2008; Akin and Munevver, 2006; Beker et al., 2003; Celik and Hotchkiss, 2000; Ferdnandez, 2004; Stewart and Sommerfelt, 2001). In the United States of America, it was found that when women are well educated on the maternal care services, they are

most likely going to adopt it. Level of education of the women also increases their ability to understand the maternal education. Women of higher level of education exhibit increased ability to understand the information passed to them by the health institutions and consequently are able to take up the maternal care services (Leslie and Gupta, 2009). Although, in general, women in higher level of income tend to exhibit patterns of more frequent use of maternal health services than women in the lower socioeconomic groups, factors such as education appear to be important mediators (Addai, 2000; Addai, 2008; Leslie and Gupta, 2009).

Another important determinant of utilization of free maternity care services, especially in Africa, is the cultural background of the woman (Leslie and Gupta, 2009; Pelto, 2007). The cultural perspective on the use of maternal health services suggests that medical need is determined not only by the presence of the health facilities but also by cultural perception of maternity (Addai, 2000). In most South African rural communities, maternal health services are done traditionally with indigenous health care services with the help of midwives (Addai, 2000). In areas where, such culture is entrenched the uptake of health center maternal care services is low due to the cultural barrier (WHO, 2008). In some cases, the use of modern health services in such a context is often influenced by individual perceptions of the efficacy of modern health services, the religious beliefs of individual women and influence by opinion shapers and community leaders (Adetunji, 2001). Moreover, in many parts of Africa, the decision of the utilization of maternal care is determined to a great extent by the opinion of the husband or household head. In such cases, women's decision making power is extremely limited, particularly in matters of reproduction and sexuality. In this regard, decisions about maternal care are often made by husbands or other family members (WHO, 2008). Availability of women's time is also important. In developing countries, women spend more time on their multiple responsibilities for care of children, collecting water or fuel, cooking, cleaning, growing food, and trade than on their own health (World Bank, 2004a). Such women are less likely to take up the health care maternal care services for fear of being restrained for days in the health centers. Instead, they will prefer the traditional approaches that will take less days and free them to attend to other responsibilities (Hotchkiss, 2000).

Accessibility of health services has been shown to be an important determinant of utilization of health services in developing countries. In most rural areas in Africa, one in three women lives more than five kilometers from the nearest health facility (World Bank, 2004b). The scarcity of vehicles, especially in remote areas, and poor road conditions can make it extremely difficult for women to reach even relatively nearby facilities. Walking is the primary mode of transportation, even for women in labor (Williams et al., 2005; World Bank, 2004b). In rural Tanzania, for example, 84 percent of women who gave birth at home intended to deliver at a health facility but did not due to distance and lack of transportation (Bicego et al., 2007). Fees reduce women's use of maternal health services and keep millions of women from having hospital-based deliveries or from seeking care even when complications arise. Even when formal fees are low or nonexistent, there may be informal fees or other costs that pose significant barriers to women's use of services. These may include costs of transportation, drugs, food, or lodging for the woman or for family members who help care for her in the hospital (Gertler and van der Gaag, 2008; Gertler et al., 2008).

In Ethiopia, in a study of maternal mortality in Addis Ababa, it was established that women who did not receive maternity care were often poor, illiterate, and unmarried, with limited knowledge of maternity care services. The study also showed that the risk of nonattendance was higher for pregnant women who were first pregnant between the ages of 10 and 18. In a nationally representative sample survey in Ethiopia, receipt of maternity care was found to vary by age, residence, and other socio economic factors (CSA, 2003). Another study in Nairobi Kenya showed that lack of time, absence of illness, and lack of awareness are the major reasons for nonattendance for antenatal care (Van et al., 2006). Mwaniki (2004), in his study in the Mbere District in Kenya, found maternal age, parity, lack of time, education, marital status, and women's economic status to be significant predictors of utilization of maternity care. A study in Suba, in Homabay County showed that women's education, inadequate household income, distance to the health care centers and unwanted pregnancy were important predictors of antenatal care utilization (Turan, 2008).

2.3 Administration of the free maternal care and utilization of maternal health care

A review of literature reveals that the nature of administration and management of free maternal care has an influence on the utilization of the maternal care (Champagne et al, 2006). In Canada for example maternal care is provided by Medicare according to a broad set of principles laid out in the Canada Health Act and in accordance with any intergovernmental funding agreements. Medicare is financed through general taxation and is for provided for free for all the citizens, much of which is distributed by the federal government to the provinces via transfer payments. Recently the policy focuses not just on providing free maternal care but also on strengthening primary care, and broadening the adoption of health information technology. With this, most mothers have preferred this health care system to the extent that two thirds of the mothers are using it compared to a third who are still using the private care system (Alter et al, 2004). Denmark provides tax-financed maternal care to all mothers (Field, 2004). Moreover, hospital and primary care are free of charge. The maternal care of Denmark is however not adopted fully by most residents because it doesn't cover some critical areas (Villadsen, 2004). For instance, roughly two in five mothers have complementary private insurance to cover cost-sharing and services not fully covered by the state, such as physiotherapy, and one in five residents has supplementary insurance that covers access to private-care providers and facilities. This partial financing of the maternal care has led to the citizens not to fully adopt the maternal care as in the case of Canada (Wiegers, 2003).

Heneck (2003) in an developing a model that could help explain the utilization of maternal care in the Japan Asia using factor analysis found that there were ten underlying factors that could help explain the utilization of maternal care. They were the availability of free maternal care, effectiveness of the free maternal care, attitude of the women towards the free maternal care, resource management in the maternal care, capacity building of the staff working for the free maternal care and the accessibility to getting to the maternal care. Heneck (2003) did the study in Hokkaido province of Japan and studied a total of 545 mothers in the postnatal care.

In Africa, utilization of maternal care also depends to a large extent on the health care administrators ensuring that it is uniformly spread even to the rural areas. In Egypt for example Koblinsky (2003) explains that there is a huge disparity in provision of antenatal and postnatal care in the rural and urban areas. In most rural areas of Egypt there is few obstetrics, doctors and hospitals. This leads to congestion of the few facilities and resources available that some mothers fail to utilize them making them inaccessible considering the high population in the urban areas. On the other hand, in the urban areas of Egypt, there has been a remarkable increase in investments in maternal care since the year 2005. With investment in the number of hospitals to the number of health care professionals the utilization of maternal care in the public hospitals in the urban areas has increased significantly (Yount, 2004).

Ensuring the availability of hospitals, staff and medical facilities is not enough to guarantee utilization of the maternal care (Champagne, 2008). A case in point is South Africa which is credited for having the highest per capita investment on maternal care in Africa according to **(**Myer, 2003**)**. South Africa however is still recording low indicators of performance by having high mortality rates in the maternal care sector because of women and communities are not empowered to contribute actively to improving maternal care, there is no clear legislation and policy to support the free maternal care strategy and the general illiteracy by the women in rural South Africa (Chopra et al, 2003).

In the east African region, Uganda is credited for having the best administration of maternal care (Champagne, 2008). The government of Uganda has since the year 2006 been strengthening maternal health care through improving access to medical supplies such as medicine and equipment, increasing the number of health care facilities and improving on the community engagement in decision making in the health sector (Tann, 2007). This however does not mean that the maternal care of Uganda is devoid of challenges. The program still grapples with the challenge of limited funding to cater for the needs of the growing population. This explains why in Uganda midwives are empowered and recognized to carry out deliveries.

They are also supported with training on Emergency obstetric care, Skills of birth attendance and family planning (Kiwuwa, 2008).

Kenya has long suffered from high maternal morbidity and mortality rates. 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 (Otieno, 2013). The main reason for this state of affairs is the fact that so many births were administered by unqualified people who could not handle complications during pregnancy and at delivery and general lack of facilities to handle deliveries (Kenya National Commission on Human Rights, 2012). The free maternal health care in Kenya was introduced in the year 2013 to increase the number of hospital deliveries and reduce maternal mortality. This program however faces many challenges such as insufficient funding, little investment in new infrastructure, lack of equipment and low staffing (Kenya National Commission for Human Rights, 2013).

2.4 Attitude of mothers and the utilization of the free maternal care

Studies reveal that the attitude of mothers has a bearing on the utilization of free maternal care. For example Salam et al (2013) points out that mothers attitude towards the health care is determined by the experience of the women with the health care or what they observe other mothers going through in the maternal care. For example in the Canada, most mothers had a very good perception of the public maternal care financed by Medicare (Bilszta et al, 2011). This was because the policy focuses not just on providing free maternal care but also on strengthening primary care, and broadening the adoption of health information technology. With these good perceptions more mothers in Canada preferred the use of the public health maternal care service to the extent that two thirds of the mothers are using it compared to a third who are still using the private care system (Alter et al, 2004). The rate of maternal mortality in Canada is also very low due to the proper adoption of the maternal care services to as low as 0.7% due to the good administration of the maternal care in Canada. Such facts have led to improved attitude and consequently utilization of the maternal care in Canada (Hogan et al, 2010).

The positive relationship between attitude and utilization of maternal health care is also experienced Japan, Heneck (2003) explained that in Japan there was effective free

maternal care, proper management of maternal resources and well trained staff to administer the maternal care services, this has seen in improvement in the number of women preferring to use the free maternal care due to the good perception that has been created as a result of the good administration of the maternal care. The opposite is true, poor attitude by women translates to low utilization of the maternal care. In Bangladesh where there maternal mortality rate is the highest standing at 3.2 per 1,000 live births, there has been inadequate maternal healthcare services, poor awareness, improper maintenance and dysfunctional systems (Persson et al, 2012). With these low levels of the indicators of health, the maternal health and reducing child mortality have been observed. This has led to poor attitude by the citizens and consequently low utilization of the maternal care services (Labrique, 2013).

A cross-sectional survey was carried out on a representative sample of 423 slum mothers having children aged 0-12 month(s). Data were collected in 4 slums located in 2 wards of Dhaka City Corporation under the administrative Zone. Cross-tabulation and unilabiate statistical techniques were applied in the study (Kagaranza, 2005). Perceptions and practices towards antenatal care, safe delivery, and postnatal care were the main outcome variables. It was found that utilization of consultation of antenatal care, antenatal visits from healthcare facilities of their locality and use of the health facilities for deliveries was associated with the attitude of the women towards the maternal care services. Moreover, in the urban slum, women had better attitude towards maternal care services compared to the rural slum and this explained why a large proportion (70%) of the mothers still delivered their babies using the health care facilities in the urban slum as compared to 26% in the rural slum. For treatment of delivery-related complications, 87% of the women in the urban slum preferred hospital care compared to 15% in the rural slum that preferred hospital care but practically they did visit the facilities (Karaganza, 2005).

In most African countries, maternal health issues which include family planning, pregnancy and childbirth have long been regarded exclusively women's affairs (Choi, 2012). Although the health of mothers is determined by many factors including the attitude of the mothers towards the maternal care, this is one important factor that has

been neglected according to Choi, (2012). Women's attitude is crucial in determining their level of adoption of the maternal care services. Factors responsible for determining the women's attitude include culture, religion, and ignorance, the observation of the operations of the maternal health care and socio-economic factors. It has been observed that women who had a good attitude towards the maternal health care issues were more likely to adopt the maternal services is a promising strategy for promoting maternal health (Hosseinpoor, 2011) observed that involving husband/partner and encouraging joint decision-making among couples may provide an important strategy in achieving women's empowerment; this will ultimately result in reduced maternal morbidity and mortality. It has also been observed that women's attitude is shaped by the opinion and behavior of their husband towards the maternal health care services and consequently their utilization of maternity care. The study established that the attitude of women could be improved by supporting the health facilities with better infrastructure, helping pregnant women to stay healthy, arranging for skilled care during delivery, avoiding delays in seeking maternity care, helping after the baby is born, and having responsible fathers with good attitude (Bertrand, 2013).

In Uganda Champagne (2008) reports that since the year 2006 the government had been strengthening maternal health care through improving access to medical supplies such as medicine and equipment, increasing the number of health care facilities and improving on the community engagement in decision making in the health sector credited for having the best administration of maternal care. In areas where such developments have been achieved the perception of women in the maternal care services has been improved in a great way making the women to adopt the maternal care services by 15% as compared to areas where adoption has been low. In Kenya National Commission for Human Rights (2013) reports that in Pumwani, which is the biggest maternity hospital in Kenya, there has been a massive pressure on the hospital facilities due to the very high number of women who try to assess the hospital for deliveries each day. This has led to a deteriorating of services in the hospital coupled with the general lack of facilities to handle deliveries. This has led to poor attitude by the women in Nairobi towards the hospital. Despite these challenges, the hospital still experiences high number of women

seeking maternity services despite the many challenges such as insufficient funding, little investment in new infrastructure, lack of equipment and low staffing, due to lack of reliable alternatives.

2.5 Knowledge of mothers on maternal care and the utilization of maternal care

A review of past published literature reveal that knowledge on maternal education has a positive association with the utilization of maternity care services (Addai, 2000; Addai, 2008; Akin and Munevver, 2006; Beker et al., 2003; Celik and Hotchkiss, 2000; Ferdnandez, 2004; Stewart and Sommerfelt, 2001). In the United States of America, it was found that when women who were well educated on the maternal care services, they are most likely going to adopt the maternal health care practices. Level of education of the women also increases their ability to understand the maternal education. Women of higher level of education exhibit increased ability to understand the information passed to them by the health institutions and consequently are able to take up the maternal care services in the institutions (Leslie and Gupta, 2009).

There is a strong positive correlation between knowledge of mothers on maternal issues on the utilization of maternal health care. In a study in Australia that explored the characteristics of women who utilized and preferred to use the government funded maternal care it was found that all of them knew the meaning of maternal care, knew what it meant by normal delivery, recognized the complications that were likely to be experienced when delivery was administered using unqualified personnel and knew where to refer to in case of problems arising during pregnancy. On the other hand women who did not utilize the maternal care services on the other hand had a low understanding of these issues (Teate, 2011).

In Africa studies show that a high literacy rate of the respondents on maternity issues and a high level of awareness of antenatal care among the respondents were associated with adoption of maternal care services. In a study by Fatusi (2009), more than two third of the respondents who had adopted the maternal care services had good knowledge on the activities carried out in the provision of antenatal care. This is different to the findings of Fatusi and Babalola in Ileife, Nigeria where a lesser proportion (60.3%) of the

respondents attended antenatal care (Fatusi, 2009) and shows that client Knowledge is related to the utilization of health services. This is also supported by a study carried out by Nigussie et al (2004) in which maternal education was a strong predictor of preference for a place of delivery and mothers whose educational status was secondary high school and above were about 11 times more likely to give birth at health institutions than women with other levels of education in Ethiopia (Tomkinson, 2011).

In the east Africa a study conducted in Tanzania on the knowledge attitude and practices on maternal and newborn health in Tanzania revealed that there was a strong positive association between knowledge on the importance of pregnancy care, antenatal care and hospital deliveries and postnatal care on practices like seeking the best hospital for doing deliveries, were engaged in good breast feeding practices and regularly sought postnatal care services (Chung, 2013). In Kenya, a study explored the effects of 'Kangaroo Mother Care' training on knowledge, attitude and practice of health care providers in selected district hospitals in North Rift Region, Kenya. The study was conducted in Koibatek, Iten, Nandi North and Nandi South district. The study found that with increase in knowledge about the Kangaroo mother care services training, women were engaged more in breast feeding and other postnatal care services such as regular visiting of the clinics (USAID, 2011).

2.6 Theoretical framework

The theory that guided the study was the utility function which is a economic concept of in production. The theory explains that the utilization of a commodity and the consequent satisfaction incurred from using the input depends on various inputs that make up the product (Chung, 2012). The satisfaction from its use increases at a decreasing rate with the increase in the input that influences the function. In this study the research will explore the utilization of the free maternal care. The inputs that influence utilization of free maternal care are socioeconomic factors, administration, mothers' attitude and knowledge. The utility function can be symbolically presented as:

$U = F (S, A, M, K…)$

Where U represents the Utilisation of the free maternal care and is an input of variables include S (Socio Economic factors), A (Administration), M (Mothers attitude), K (Knowledge).

The utility function will be presented as follows.

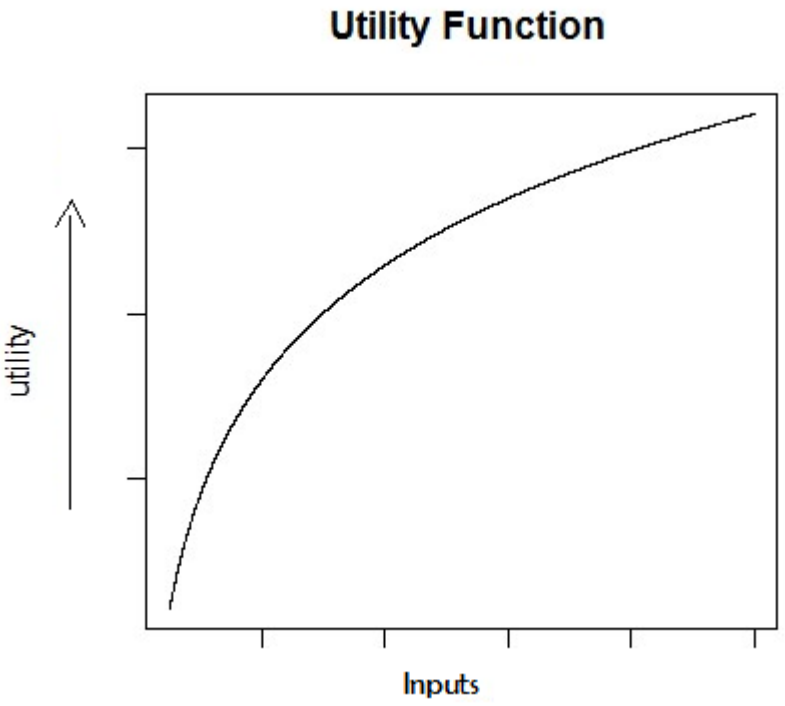


Figure 2.1: Utility function ***Source: Chung 2012***

2.7 Conceptual framework

Conceptual Framework is a diagrammatic explanation of the research problem hence an explanation of the relationship among several factors that have been identified as important to the study.

Perceived Conceptual Framework

Figure 2.2 conceptual framework

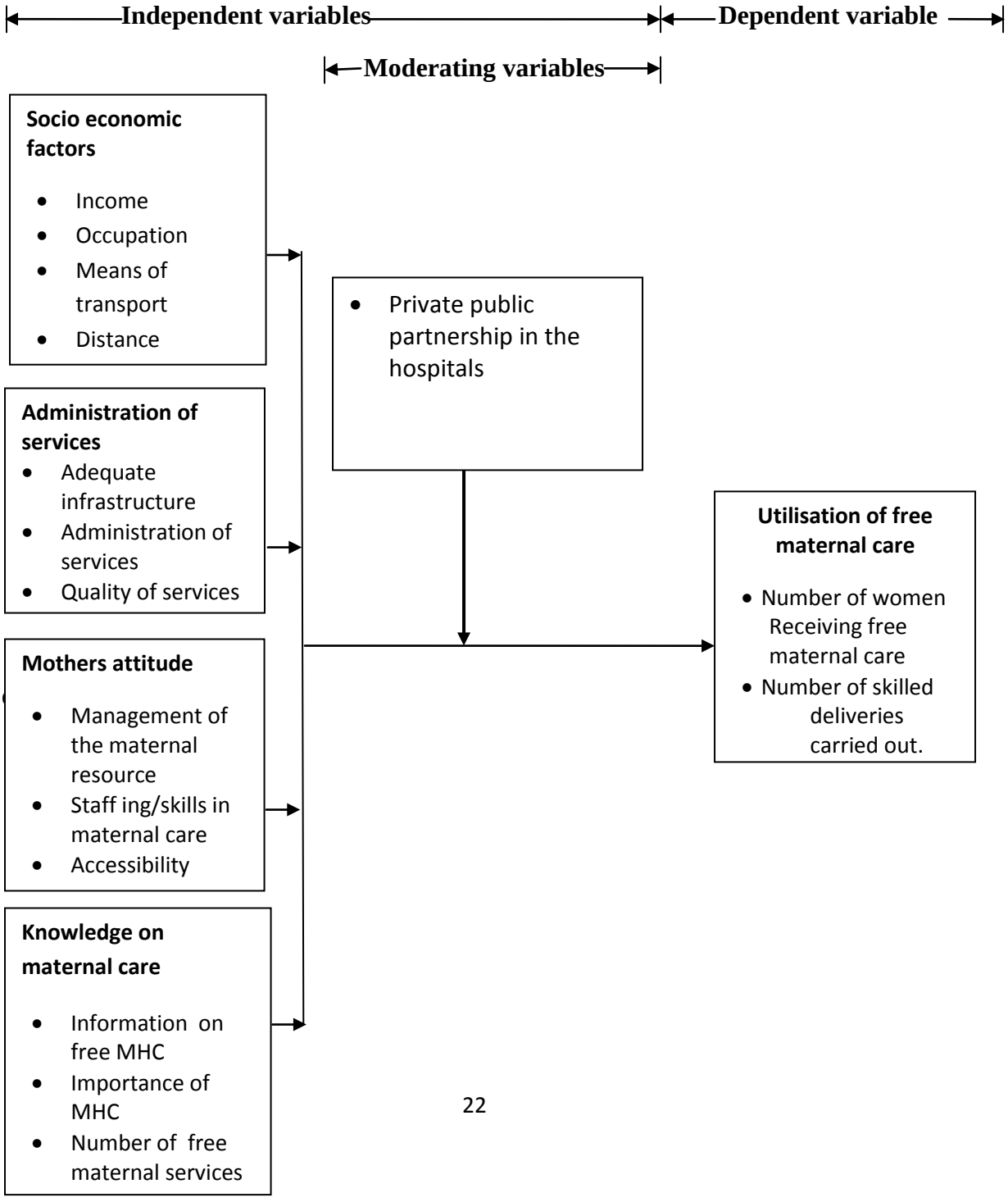


Figure 2.2 shows the determinants of utilization of maternal health care in Muhuru and Nyatike divisions. The factors are socio demographic factors, administration, the mothers' attitude and awareness of maternal care. In the socio demographic factors, it is expected that education, culture, income and distance to hospital facilities will have an influence on the mothers' ability to access and utilize the maternal health care services. For the administration of free maternal care, it is expected that well administered free maternal care services will lead to improved utilization of the free maternal health care while poor administration of the free maternal care will lead to low utilization of the free maternal care. Mothers' attitude will also be expected to have an influence on the adoption and use of the free maternal health care. It will be expected that mothers who will have a good attitude towards the free maternal health care will adopt it more easily compared to mothers who will have poor attitude. Mothers who are well aware of the free maternal care will be expected to adopt and utilize the program. On the other hand donor support in terms of financial support, capacity building activities gear to create more awareness among mother and support of outreach and health promotion at the health facilities will enhance the utilization of the free maternal care among mothers. Lastly public private partnership in the hospital will enhance or discourage mothers from access the free maternal care.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a description of the research methodology that will be used to conduct the study. This includes the research design, target populations, sample size and sampling procedures, data collection instruments and data analysis techniques and ethical considerations.

3.2 Research Design

This study adopted descriptive survey design. Descriptive survey design focuses attention on the formulation of objectives, design of data collection instruments, collection of data, processing and analyzing data and reporting findings (Mugenda and Mugenda, 2008). The design was suitable for this research since it provided qualitative and quantitative data collection methods of selecting samples to analyze and discover occurrences (Oso and Onen, 2009). Survey design also yields maximum information and provide an opportunity for considering many different aspects of the problems (Kothari, 2004)

3.3 Target population

This study population comprised of all women who delivered under the free maternal health care in the last one year at Muhuru and Nyatike Divisions, Nyatike Sub County. Muhuru and Nyatike divisions were chosen purposely out of the other divisions in the county since they had the highest number of health care facilities that had been administering free maternity services in the sub county therefore it was anticipated that these hospitals would provide the required sample size for the study as well as the wanting maternal and child health indicators in the area. Nyatike and Muhuru divisions have a population of 163,377 (GOK, 2009) out of which 9960 comprise of women attending maternal health care in the last one year who comprised the target population for the study. Nyatike Comprises of eight locations namely North Kadem, North East Kadem, South East Kadem, South Kadem, Central Kadem, West Kadem, East Kadem and Kaler locations. Nyatike is served by twelve health facilities namely: Kombato

Dispensary, Namba Kodero Dispensary, Wath Onger Dispensary, Kituka Dispensary, Agenga Dispensary, Kabuto Dispensary, Lwanda Dispensary, Ndiwa Dispensary, Thim Lich, Nyandago Dispensary, Bande Dispensary, Olasi Dispensary and Yago Dispensary. Muhuru division has five locations namely: West Muhuru, Central Muhuru, East Muhuru and South East Muhuru. It is served by five health facilities namely Tagache Health Center, Winjo Dispensary, Otho Dispensary, Got Kachola Dispensary and Aneko Dispensary. The following table shows the number of women attending postnatal care in a year in Nyatike Sub County.

Table 3.1: Population

Nyatike Sub County	Number	Sample	Percentage
Nyatike division	8095	287	81%
Muhuru	1865	66	19%
Total	**9960**	**353**	**100%**

Source: GOK 2009

3.4 Sample size and sampling Procedure

The section discusses sample size and sampling procedure

3.4.1 Sample size

The study involved a total sample of 370 respondents, this sample size was derived from Krejcie (1970) 353 women attending maternal care, 12 CHEWs in Nyatike SubCounty and 5 CHEWs in Muhuru Division sampled from the 17 health facilities in Nyatike and Muhuru Divisions.

3.4.2 Sampling procedure

The study involved a probability proportional to size (PPS) sampling method which was used to sample the respondents chosen from the different health facilities. Gupta (2007) defines PPS as the statistical method of selecting a sample size of size **n**, from a population of size **N**, by selecting sampling units that are equally spaced from each other in randomized units from the population. To select the sample from each health facility

birth registers/CHEWs reporting tool, a list of all the names of mothers who delivered under the free maternal health care in the last one year along with their contact addresses was obtained. Out of these lists, a convenient sample of 353 mothers was obtained. The total number of women who had delivered in each facility as determined in the CHW reporting tool/register was **N**. for a sample size of **n** from a particular facility the researcher then determined the study internal **k** as follows.

$K = N/n$

After establishing the sampling interval **k**, the researcher first randomized the CHW reporting tool, later one mother was selected at random as the first respondent. The researcher then counted the sampling interval **k** and got the other respondents until the sample size of n was arrived at. Questionnaires were distributed at the homes of only the mothers who had accepted to participate in the study. It was anticipated that this sample size was representative to the entire study population.

3.5 Research instruments

Research instruments according to (Oso & Onen, 2009) are the tools used to collect data. This research study used questionnaires for mothers who used free maternal health care services as well as interviews. A questionnaire being the main research tool for this study was selected based on the nature of the study, time and objectives of the study. The items on the questionnaire were developed on the basis of the objectives of the study. Section A of the questionnaire gave questions concerning personal data of the respondents; this provided elaborate information on the demographic characteristic of the respondents Section B provided information on the effects of socio demographic factors in the utilization of free maternal care .Section C of the questionnaire provided effect of administration of the free maternal care on the utilization of the free maternal care. Section D of the questionnaire gave questions concerning influence of knowledge of the mothers on utilization of free maternal care while Section E on the other hand looked at the influence of attitude of women towards the utilization of free maternal care. The interviews were used to collect information from the nursing officers and CHWs on the

determinant of utilisation of free maternal care, its challenges and possible ways of improving it for increased uptake by mothers and women of reproductive age.

Kombo et al., (2009) noted that, the use of questionnaire an instrument of research normally gives the respondents adequately time to provide well thought responses in the questionnaire items and enables large samples to be covered within a short time. Gupta (2007) explains that interviews are reliable when a study seeks to get in-depth information from the key respondents on a specific phenomenon under study.

3.5.1 Piloting of the instrument

Piloting of the instrument involved pre-testing the research instrument on a small sample of respondents which was done on a sample of ten respondents with the same characteristics as the sample taken during the study (Mulusa, 1990). In piloting the instruments of this study, thirty seven questionnaires, representing 10% of the total sample, were administered to women in post natal care in the nearby Rongo Sub County slum and the findings were used to refine the instrument for increased reliability of the instrument used in Nyatike and Muhuru. During piloting of the instrument, attention was focused to the questions that made the respondents uncomfortable hence making them unambiguous and straight forward so as to reduce the respondents fatigue during the administration of the questionnaire.

3.5.2 Validity of the instrument

Validity is defined as the degree to which a test measures what it is supposed to measure (Mugenda and Mugenda 2008). It is an indicator of the extent to which study results can be accurately interpreted and generalized to other populations (Oso and Onen, 2009). To ensure validity of the research instruments, the questionnaire was given to two experts who are lecturers at the University of Nairobi to evaluate each element in relation to the objectives and assess if the instrument was answering the research questions. They also explored whether all the aspects in the conceptual and theoretical framework reflect the objectives of the study. The items in the questionnaires were also assessed to check whether they were written in simple English language that could be easily understood.

Their advice was used to make necessary corrections to ensure that the instruments measured what they intended to measure (Mugenda & Mugenda, 2008).

3.5.3 Reliability of the instrument

Reliability is the extent to which research results are consistent and replicable (Amin, 2005; Kothari, 1990). Split half technique will be used to determine the reliability of the questionnaire. This involved administering the same questionnaire twice to mothers and Community health extension workers in one health facility which was excluded from the actual study. The first set of questionnaire administration was done during the piloting and the second questionnaire administration was done one week after the first administration. After administering the questionnaires, a correlation coefficient was calculated to indicate the relationship between the two set of scores. Computation of Pearson correlation coefficient between scores of the two halves of the tests was employed using Statistical Package for Social Science SPSS. Pearson product moment correlation coefficient was used to determine the correlation coefficient (Γ^1_x). The reliability of the entire instrument was obtained through $\Gamma^1_{xx} = 2\Gamma_{xx} / (1 + \Gamma_{xx})$, where Γ_{xx} was the correlation between the two tests.

3.6 Data collection Procedures

Immediately the research proposal was presented and approved by the University's Research Panel, a permit for data collection was first sought from National Council for Science and Technology; this was preceded with a letter introducing the researcher from the University of Nairobi Campus Administrator. The two documents were presented to the local county administration as well as the County Health Management Teams (CHMT) to help gain access to the facility in charges and the CHWs within the area of study. Five research assistants were then recruited and trained on various aspects of this research and data collection techniques so as to understand research objectives, muster research tools, ethical consideration in research and to plan approaches to data collection.

3.7 Data analysis Techniques

Kombo (2004) defines data analysis techniques as the examination of what has been collected in a research and making deductions and inferences. Data analysis therefore is

to present data that has been collected from the field in a more easy way that it can be easily interpreted by the intended users. Bryman and Cramer (2011) noted that data analysis seeks to fulfill research objectives and provide answers to research questions.

The questionnaires were checked for completeness and consistency of information at the end of every field data collection day and before storage. Data capturing was done using Excel software. The data from the completed questionnaires was cleaned, re-coded and entered into the computer using the statistical package for social sciences (SPSS) for Windows for analysis. Descriptive statistics research employed both qualitative and quantitative techniques of analysis. Bryman (2011) observes that by combining the two techniques, social scientists balance the strengths and weaknesses of the two and hence achieving a higher degree of reliability and validity compared with the use of only one.(i.e. Frequency analysis) was be computed. The percentages of the demographic characteristics, socioeconomic factors, administration of maternal health care, mothers' attitude and knowledge of mothers on free maternal health care were computed to compare the responses of the mothers who attended and those who did not attend any maternal services. Percentages were estimated to compare the responses of the women between the various hospitals. The findings were there after interpreted to arrive at the conclusions and recommendation based on the study findings.

3.8 Ethical consideration

Despite the high value of knowledge gained through research, knowledge cannot be pursued at the expense of human dignity (Osoo and Onen, 2009).Throughout this study, the ethical issues was up held to ensure the dignity of the participants was maintained. Major Ethical issues of concern in this study included informed consent, privacy and confidentiality, anonymity and conduct of the individual researcher. The researcher and his assistants' maintained approachable attitude during the data collection exercise and where clarification were sought by the respondents, they were assisted accordingly.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the data, analyzes, and interprets the findings of the study. The chapter also discusses the findings in light of earlier findings of empirical studies. The presentation, analyses interpretation and discussion of the findings follow the four major themes.

4.2 Questionnaire response rate

This section presents the questionnaire response rate of the respondents. The study demonstrated a response rate of 76.47% (n=287). According to Linder & Wingenbach (2002), surveys that have high response rates provide a measure of reassurance that the findings obtained can be projected to the population from which the sample is drawn. The success of the response rate can be attributed to the fact that the completion and return of the questionnaires was well supervised. The study had two categories of respondents. They include: mothers and CHWs, table 4.1 shows the response rate.

Table 4.1: Questionnaire response rate

Respondents	**Targeted**	**Obtained**	**Response rate**
Mothers	353	274	77.62
CHWs	17	13	76.47
Total	**370**	**287**	**77.57**

From table 4.1, out of the 353 respondents targeted in the study, the study managed to get the views of 274 mothers which was a response rate of 77.62%. In the category of CHWs, the study targeted 17 CHWs and managed to find the views of 13, this was a questionnaire response rate of 76.47%. In general, the study targeted a total of 370 respondents and found the views of 287, which translated to about 76.47%.

4.3.0 Respondents socioeconomic status and utilization of free maternal health care

The first objective of the study explored the level at which socioeconomic factors influence utilization of free maternal care in Muhuru and Nyatike Sub County. The study explored several socio economic activities which included: the level of income, Occupation of respondents, means of transport, difficulty of finding money and time taken to walk to hospital.

4.3.1 Effect of respondents income on utilization of free maternal care.

The study started by exploring the effect of income on utilization of free maternal care in Muhuru and Nyatike sub counties. The level of utilization of free maternal care was explored using a question asking the mothers the extent to which they utilized free ANC services, deliver, post natal care and provision of ITNs. The mothers' responds were classified as very high extent, high extent, average extent, low extent and very low extent. Table 4.2 shows the results of their response.

Table 4.2 Influence of income on utilization of free maternal care

Level of income	**Extent of utilisation**					
	High extent		**Very high extent**		**Total**	
Less than 5000	148	82.68	91	95.79	239	87.23
6000 – 10000	23	12.85	2	2.11	25	9.12
11000 – 15000	4	2.23	2	2.11	6	2.19
Above 15000	4	2.23	0	0	4	1.46
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.2, out of the 274 respondents, 239(87.23%) respondents were earning less than 5000, 25(9.12%) respondents were earning between 6000 and 10000 shillings, 6(2.19%) respondents were earning between 11000 and 15000 shillings. In the category of 179 respondents whose extent of utilization of the free maternal care services was high extent, 148(82.68%) were earning less than 5000, 23(21.85%) respondents were earning between 5000, 10000 shillings, 4(2.23%) respondents were earning between 11000 and 15000 shillings and lastly 4(2.23%) respondents were earning above 15000 shillings. In

the category of mothers who said that their extent of utilization of the free maternity care was very high, a total of 91(95.79%) respondents were earning less than 5000, this directly explain the reason why these respondents utilized the free maternity care as being free with no cost implication to them. 2(2.11%) were earning between 6000 and 10000 on average this group of respondents would be able to bear the cost of maternal care in private facility due to their income hence some might have opted of private facility same as 2(2.11%) respondents were earning more than 15000 shillings in a month.

From the above, findings shows that among the mothers who utilized the free maternal care to a very high extent, there was a higher proportion of respondents who earned lower income of less than 5000 shillings a month compared to those who utilized free maternal care to a high extent, i.e. 95.79% compared to 82.68%. On the other hand among the respondents who earned the highest income of above 15000 shillings there were more who respondents utilized the free maternity care to a high extent compared to those who utilized it to a very high extent, i.e. 2.23% compared to 0%. These mothers can afford to access other forms of maternal services from private hospitals or any other place of their choice. The finding of a strong education and income effect is consistent with findings from elsewhere in the World (Letamo, 2003; Stephenson, 2006; Navaneetham, 2002). There are a number of explanations for why education and income are a key determinant of health service use. Education is likely to enhance female autonomy so that women develop greater confidence and capability to make decisions about their own health (Caldwell, 1981; Raghupathy, 1996). It is also likely that educated women seek out higher quality services and have greater ability to use health care inputs that offer better care (Celik and Hotchkiss, 2000) unlike their counterparts who can only rely on government to supplement or introduce free maternal health care.

4.3.2 Occupation status of the respondents and utilization of the free maternal care

The study went on to explore the influence of the occupation of mothers on the extent of utilization of the free maternal care and presented the findings in table 4.3.

Table 4.3: Occupation of respondents and utilization of the free maternal care

Occupation	Extent of utilisation				Total	
	High extent		Very high extent			
Housewife	54	30.17	42	44.21	96	35.04
Self employed	83	46.37	43	45.26	126	45.99
Central Government employee	2	1.12	3	3.16	5	1.82
Local government employee	4	2.23	0	0	4	1.46
Farmers	36	20.11	7	7.37	43	15.69
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.3, out of the 274 respondents, 96(35.04%) were housewives, 126(45.99%) were self-employed, 5(1.82%) were employed with the central government, 4(1.46%) were employed with the local county government and 43(15.69%) were farmers. Among the 179 respondents who rated the extent of utilization of free maternal care as being to a high extent, 54(30.17%) were housewives, 83(46.67%) were self-employed, 2(1.12%) were central government employees and 36(20.11%) were farmers. In the category of 95 respondents who rated their extent of utilization of the free maternity care as very high 42(44.21%) were housewives, 43(45.26%) respondents were self-employed, 3(3.16%) were employees of the central government and 7(7.37%) were farmers.

From these findings, a higher proportion of housewives were adopting the utilisation of free maternity care to a very high extent compared to those who had adopted it to a high extent. Respondents who were farmers or self employed had adopted the utilisation of free maternal care to a lower extent. Findings show that women with low as well as a high status are more likely to seek maternal health care services. Cost constraints have been found to be a barrier in seeking maternal health services (Letamo, 2003; Stanton et al, 2007; Houweling, 2007) and hence high income has a positive impact on utilization of

maternal health services since women from rich households are able to afford transport, registration and any other costs related to the health services and also pay for private health insurance. This explains why the free maternal health care is higher among mothers from the low income levels.

4.3.3 Means of Transport and its impact on utilization of free maternal care.

The study explored the influence of the means used to get to hospital on the extent of utilization of free maternity care and presented the findings in table 4.4.

Table 4.4 Means of getting to hospital on utilization of free maternal care

Means	**Extent of utilization**				**Total**	
	High extent		**Very high extent**			
Walk	146	81.56	77	81.05	223	81.39
Public transport	29	16.2	18	18.95	47	17.15
Bicycle	2	1.12	0	0	2	0.73
Private vehicle	2	1.12	0	0	2	0.73
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.4, 223(81.05%) respondents walked to hospital, 47(17.15%) respondents used public transport to hospital, 2(0.73%) respondents used bicycle to move to hospital and 2(0.73%) respondents used private vehicle to move to hospital. In the category of 179 respondents who utilized free maternity care to a high extent, 146(81.57%) walked to the hospital, 29(16.2%) used public transport, 2(1.12%) respondents used bicycles to the hospital and 2(1.12%) respondents used private vehicles to hospital. In the category of 95 mothers who were utilizing free maternal care to a very high extent, 77(81.05%) walked to hospital and 18(18.05%) respondents shared passenger transport service which is available for use by the general public/ community and require one to pay an amount of money to access the services (public transport) to get to the hospital. This can be in form of local Public Service Vehicle or motorcycle. Respondents preferred this type of transport due to the cheap cost associated with it, the availability of the means in

comparison with the other means and also their social economic status. In agreement with other studies the study

From these findings, it is clear that no mother who used private vehicle was using the free maternity care to a very high extent. There was high proportion of respondents who used public transport among the mothers who utilized the free maternal care to a very great extent. The study went on to explore the influence of difficulty in finding money to get to the hospital on the extent of utilization of the free maternity care and presented the findings in table 4.5.

Table 4.5: Influence of ease of finding money on utilization of the free maternity care

Difficulty in finding money	High extent		Very high extent		Total	
	Freq.	%	Freq.	%	Freq.	%
Very difficult	120	67.04	66	69.47	186	67.88
Quite difficult	47	26.26	27	28.42	74	27.01
Not difficult	12	6.7	2	2.11	14	5.11
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.5, 186(67.88%) respondents find it very difficult to find money facilitate their going to the hospital, 74(27.01%) respondents found it quite difficult to find money and 14(5.11%) respondents did not find it difficult to find money to facilitate their going to the hospital. Out of the 179 respondents who utilized the utilization of the free maternity care to a high extent, 120(67.04%) found it very difficult to find money, 47(26.26%) respondents found it quite difficult in finding money and 12(6.7%) respondents did not find it difficult in any way finding money. In the category of 95 respondents who accessed the free maternity care to a very high extent, 66(69.47%) found it very difficult in finding money to access the free maternity care, 27(28.42%) respondents found it quite difficult to find money and 2(2.11%) didn't find it difficult at all when finding money.

4.3.4 Distance taken by respondents to get to hospital

The study explored the time taken to walk to hospital and its influence of the extent of utilization of the free maternity care and presented the findings in table 4.6.

Table 4.6: Time taken to walk to hospital and utilization of free maternal care

Duration	High extent		Very high extent		Total	
	Freq.	%	Freq.	%	Freq.	%
Less than 30 mins	91	50.84	22	23.16	113	41.24
30 mins – 1 hour	49	27.37	45	47.37	94	34.31
1 hour – 2 hours	28	15.64	24	25.26	52	18.98
Over 2 hours	11	6.15	4	4.21	15	5.47
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.6, 113(41.24%) respondents took less than 30 minutes to get to hospital, 94(34.31%) respondents took between 30 and 1 hour to get to hospital, 52(18.98%) respondents took between 1 to 2 hours to get to hospital and 15(5.47%) mothers took over 2 hours to get to hospital. in the groups of 179 respondents who accessed the free maternity care to a high extent, 91(50.84%) respondents took less than 30 minutes to get to hospital, 28(15.64%) respondents took between 1 hour and 2 hours to get to hospital and 11(6.15%) respondents took over 2 hours to get to hospital. in the category of mothers who accessed the free maternity care to a very high extent, 22(23.16%) respondents took less than 30 minutes to get to hospital, 45(47.37%) respondents took between 30 minutes and 1 hour to get to hospital and lastly 24(25.26%) respondents took between 1 hour and 2 hours to get to hospital and 4(4.21%) respondents took over 2 hours to walk to hospital.

From these findings, most respondents who accessed the free maternity care to a very high extent were taking between 30 minutes and 1 hour to get to hospital and most of the

mothers who were accessing the free maternity care to a high extent were taking less than 30 minutes to walk to the hospital. These findings show that utilization of the free maternity care was associated with less time of walk to the hospital.

The study triangulated the findings from the mothers on the socio economic status of the mothers, the study interviewed the administrators to get their views of the socio economic status of the mothers seeking the free maternal care. This is what one of the administrators had to say that there was as a close relationship between the income of mother and their health seeking behaviors, women's employment was found to be a significant factor in the utilisation of maternal services and women who had an income were more likely to use services most. This because these women not only have better financial status and ability to use quality health services but also gain empowerment to take part in the decision making process about healthcare in the family (Kalmuss & Fennelly, 1990) in comparison to the other. In this study a great number of women who used the free maternal service represented the women whose income was below Ksh.5000 due to the affordability this means that if the maternal care was not free these women would not afford the cost in the private/public hospitals .

4.4 Administration of the free maternal care and utilization of free maternal health care

The second objective explored the extent to which administration of the free maternal care influenced the utilization of the free maternal care in Muhuru and Nyatike division in Nyatike Sub County.

4.4.1 Adequate infrastructure on the extent of utilization of free maternal care

The study explored the influence of the condition of the building where the health facility was located on the extent of utilization of the free maternal care by the mothers and presented the findings in the cross tabulation in table 4.7.

Table 4.7: The health facility is located in a building with good condition

	Extent of utilisation					
	High extent		Very high extent		Total	
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Yes	172	96.09	82	86.32	254	92.7
No	7	3.91	13	13.68	20	7.3
Total	**179**	**100**	**95**	**100**	**274**	**100**

The study established that 254(92.7%) respondents were sampled from health facilities with good condition and 20(7.3%) respondents were sampled from health facilities that were not in good condition. In the category of 179 respondents who utilized the free maternal care to a high extent, 172(96.09%) respondents were sampled from health facilities with good condition and the other 7(3.91%) respondents were sampled from health facilities that were not in good condition. In the other category of 95 respondents who said that they accessed the free maternity to a very high extent 82(86.32%) respondents were sampled from health facilities with good condition and the other 13(13.68%) mothers were sampled from health facilities that were not in good condition.

The study went on to explore the influence of health facility having regular water supply, functional toilets and all necessary equipment and its influence on utilization on utilization of free maternal care and presented the findings in table 4.8.

Table 4.8: Health facility has regular water supply, functional toilet and all necessary equipment

	Extent of utilisation				Total	
	High extent		Very high extent			
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Yes	156	87.15	74	77.89	230	83.94
No	23	12.85	21	22.11	44	16.06
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.8, 230(83.94%) respondents were of the view that there was regular water supply, functional toilet and all necessary equipment and 44(16.06%) respondents said that there was no regular water supply, functional toilets and necessary equipment. In the category of 179 respondents who utilized the free maternal care to a high extent, 156(87.15%) respondents were of the view that there was regular water supply, functional toilet and all necessary equipment and the other 23(12.85%) respondents said that there was no regular water supply, functional toilets and necessary equipment. In the other category of 95 respondents who said that they accessed the free maternity to a very high extent 74(77.89%) respondents were of the view that there was regular water supply, functional toilet and all necessary equipment and the other 21(22.11%) respondents said that there was no regular water supply, functional toilets and necessary equipment. According to Timyan et al. (1993), healthcare that is considered inappropriate will not be used. Although the findings in this study cannot be regarded as trivial, more attention should be paid to the quality of services provided.

4.4.2 Mothers response on Administration of free maternal health.

The study started by asking the mothers the person who attended to them in the health facility and presented the findings in table 4.9.

Table 4.9: Personnel who attended to you at the health facility

Officer	Freq.	Percent
Doctor	119	43.43
Nurse	153	55.84
CHW	2	0.73
Total	**274**	**100**

From table 4.9, 119(43.43%) respondents were attended to by doctors during delivery, 453(55.84%) respondents were attended to by nurses and lastly 2(0.73%) respondents were attended to by CHWs. The study explored the influence of the time it took before doctors came to see the respondents on the extent of utilization of the free maternity care and presented the findings in table 4.10.

Table 4.10: Duration taken before attended to.

	High extent		Very high extent		Total	
Duration	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Took less than 1hr	25	13.97	32	33.68	57	20.8
Took one hour	44	24.58	17	17.89	61	22.26
Took more than 1 hour	110	61.45	46	48.42	156	56.93
Total	**179**	**100**	**95**	**100**	**274**	**100**

Out of the 274 respondents, 57(20.8%) respondents took less than 1 hour before the doctor came to attend to them, 61(22.26%) respondents took an hour before the doctor came to attend to them and 156 (56.93%) respondents took more than an hour before the doctors attended to them. In the category of 179 respondents whose extent of utilization

of the free maternal care services was high extent, 25(13.97%) respondents took less than 1 hour before the doctor came to attend to them, 44(24.58%) respondents took an hour before the doctor came to attend to them and lastly 110(61.45%) respondents took more than an hour before the doctors attended to them. In the category of 95 respondents who said that their extent of utilization of the free maternity care was very high, a total of 32(33.68%) respondents took less than 1 hour before the doctor came to attend to them, 17(17.89%) respondents took an hour before the doctor came to attend to them and lastly 46(48.82%) respondents took more than an hour before the doctors attended to them. Various determinants of user perceptions of health service quality have been highlighted in the literature, which include short waiting times (Aldana et al., 2001; Singh et al, 2010), availability of drugs and staff competence (Fomba et al., 2010) as important determinant of utilization of maternal health care this is also evidence in the findings where facilities where mother did not wait for long period recording higher numbers of mothers.

4.4.3 Quality of the free maternal services offered.

Quality of free maternal services is defined as a total of what happens to the mother once she arrives at a health facility. Poor care would be expected to negatively influence women's discussion to visit a health facility. However, when the demand for the services is high, quality may not be a crucial factor influencing the utilisation of maternal services. Timyan et al. (1993) reported inadequate quality as a primary cause of women's under utilisation of health services, though these authors recommend more field studies to be done before this variable can be concluded. (95.99%) of the respondents in this study had a positive view about the quality of services that were provided at the local level facilities offering free maternal health care with only (4.01%) view the services has of low quality. This shows a relationship between quality and utilization of the free maternal health care.

Table 4.11: Satisfaction levels of respondents with the services.

	Extent of utilisation					
	High extent		Very high extent		Total	
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Yes	171	95.53	92	96.84	263	95.99
No	8	4.47	3	3.16	11	4.01
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.11, 263(95.99%) respondents were satisfied with the examination check-up done and available at the health facility and 11(4.01%) respondents were not satisfied with the services they received. In the category of 179 respondents who utilized the free maternal care to a high extent, 171(95.53%) respondents were satisfied with the services they received for the free maternal care services and the other 8(4.47%) %) respondents were not satisfied with the services they received. In the other category of 95 respondents who said that they accessed the free maternity to a very high extent 92(96.43%) respondents were satisfied with the services they received for the free maternal care services and the other 3(3.16%) respondents were not satisfied with the services they received.

Table 4.12: Satisfaction levels with the services available at the health facility.

Response	Extent of utilisation				Total	
	High extent		Very high extent			
	Freq.	%	Freq.	%	Freq.	%
Yes	173	96.65	92	96.84	265	96.72
No	6	3.35	3	3.16	9	3.28
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.12, 265(96.72%) respondents were satisfied with the services that are available at the health facility and 9(3.28%) respondents were not satisfied with the services available at the health facility. In the category of 179 respondents who utilized the free maternal care to a high extent, 173(96.65%) respondents were satisfied with the services provided at the health facility and the other 6(3.35%) respondents were not satisfied with the services they received. In the other category of 95 respondents who said that they accessed the free maternity to a very high extent 92(96.43%) respondents were satisfied with the services provided at the health facility and the other 3(3.16%) respondents were not satisfied with the services they received at the health facility.

4.4.4 Staff/Personnel attitude on utilization of free maternal care

The study explored the influence of the attitude of the personnel for the free maternity on the utilization of the free maternity care and presented the findings in table 4.13.

Table 4.13: Satisfaction level with the personnel attitude on the free maternity.

	High extent		Very high extent		Total	
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Yes	175	97.77	92	96.84	267	97.45
No	4	2.23	3	3.16	7	2.55
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.13, 267(97.45%) respondents were satisfied with the attitude of personnel for the free maternity and 7(2.55%) respondents said that they were not satisfied with the attitude of personnel for the free maternity. In the category of 179 respondents who utilized the free maternal care to a high extent, 175(97.77%) respondents were satisfied with the attitude of personnel for the free maternity and the other 4(2.23%) respondents said that they were not satisfied with the attitude of personnel for the free maternity. In the other category of 95 respondents who said that they accessed the free maternity to a very high extent 92(96.84%) respondents were satisfied with the attitude of personnel for the free maternity and the other 3(3.16%) respondents said that they were not satisfied with the attitude of personnel for the free maternity. According to Abramson (1990), and Webster (2001) clients' satisfaction with staff attitude might contribute to the use of services positively. According to Starfield (1992), patient satisfaction can be improved by more overall communication, especially by social conversation, positive feelings, partnership-building conversation and positive talks with the patients. This author also noted that conveying negative feelings/attitude or information to the patients can reduce patient satisfaction. This is because patients are more likely to accept advice and instructions when the service providers endow them with more information, more positive feedback and less negative feedback.

The study capped the objective by exploring the influence of the opinion of mothers on deliveries through midwives on the extent of utilization of free maternal care and presented the findings in table 4.14.

Table 4.14: Respondents opinion on deliveries through midwives

	High extent		Very high extent		Total	
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Excellent	61	34.08	13	13.68	74	27.01
Very good	83	46.37	40	42.11	123	44.89
Good	12	6.7	27	28.42	39	14.23
Poor	11	6.15	6	6.32	17	6.2
Very poor	12	6.7	9	9.47	21	7.66
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.14 74(27.01%) respondents viewed deliveries through midwives as excellent, 123(44.89%) viewed the deliveries through midwives as very good, 39(14.23%) respondents viewed deliveries through midwives as good, 17(6.2%) respondents in the study viewed deliveries by midwives as poor and 21(7.66%) respondents believed that deliveries through midwives as very poor. In the category of 179 respondents who rated their utilization of the free maternal care as being to a high extent, 61(34.08%) respondents viewed deliveries through midwives as excellent, 83(46.37%) viewed the deliveries through midwives as very good, 12(6.7%) respondents viewed deliveries through midwives as good, 11(6.15%) respondents in the study viewed deliveries by midwives as poor and 12(6.7%) respondents believed that deliveries through midwives as very poor. A total 95 respondents who rated their extent of utilization of the free maternal care as very high, 13(13.68%) respondents viewed deliveries through midwives as excellent, 40(42.11%) viewed the deliveries through midwives as very good, 27(28.42%) respondents viewed deliveries through midwives as good, 6(6.32%) respondents in the study viewed deliveries by midwives as poor and 9(9.47%) respondents believed that deliveries through midwives as very poor.

4.5 How Attitude of mothers influence the utilization of the free maternal care

The third objective explored how mothers' attitude influences utilization of the free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County. The study explored the attitude of the mothers using a likert scale where the respondents were to respond as either strongly agree which had a score of 5, agree which had a score of 4, neutral had a score of 3, disagree which had a score of 2 and strongly disagree which had a score of 1and undecided which had a score of 1, for positive statements. For negative statements, strongly agree had a score had a score of 1, agree had a score of 2, neutral had a score of 3, strongly disagree had had a score of 4 and strongly disagree had a score of 5. The scores for the response of each question were summed up and devided by the total number of responses to give a mean. A mean score greater than 3.5 greater, meant that the mothers were having a positive attitude towards the aspect being explored in the statement. A mean score ranging between 2.5 and 3.5 meant that the respondents were having a neutral attitude and a mean score less than 2.5 meant that the respondents were having a negative attitude.

4.5.1 Mothers response on Management of the free maternal services

The study explored the opinion of the respondents on the general management of the free maternal service as shown in table 4.15

Table 4.15: Attitude of mothers towards the free maternal care

Response		Strongly Agree	Agree	Disagree	Strongly Disagree	Mean
Paid for some maternal health care service during deliver	Freq.	19	66	55	134	2.401
	%	6.93	24.09	20.07	48.91	
Facility administers the services for free regardless of the clients' status	Freq.	162	63	15	34	4.164
	%	59.12	22.99	5.47	12.41	
Paid money other than fee for registration and purchase of the card	Freq.	47	37	94	96	2.777
	%	17.15	13.5	34.31	35.04	
Provided with free medicines at the hospital	Freq.	148	83	14	29	4.172
	%	54.01	30.29	5.11	10.58	
Religion and culture hinder me from utilizing the free maternal health care	Freq.	29	13	111	121	2.376
	%	10.58	4.74	40.51	44.16	
Very important for women to utilize the free maternal health care but my culture does not allow	Freq.	94	43	78	59	3.412
	%	34.31	15.69	28.47	21.53	
The health facility has medicines and equipment for safe delivery**.**	Freq.	155	54	58	7	4.277
	%	56.57	19.71	21.17	2.55	
No medicines and equipment necessary for safe deliver	Freq.	29	68	76	101	2.723
	%	10.58	24.82	27.74	36.86	
Health workers at the health facility are not adequately skilled	Freq.	24	17	116	117	2.383
	%	8.76	6.2	42.34	42.7	
Health workers are adequately skilled	Freq.	164	81	24	5	4.456
	%	59.85	29.56	8.76	1.82	
Services offered in the hospital are of high quality	Freq.	132	127	15		4.427
	%	48.18	46.35	5.47		1.616
Not recommend the facility to other women due to the poor services offered there	Freq.	34	4	88	143	2.164
	%	12.41	1.46	32.12	52.19	0.79

The study explored the opinion of the respondents on whether they had to pay for some maternal health care service during deliver at the facility. A total of 19(6.93%)

respondents strongly agreed, 66(24.09%) respondents agreed, 55(20.07%) respondents disagreed and 134(48.91%) respondents strongly disagreed. The mean response was 2.401, this meant that on average the respondents disagreed that they had to pay for some health services during the delivery process.

The study explored the opinion of the respondents on whether the facility administers the maternal health care services for free regardless of the clients' status. A total of 162(59.12%) s respondents strongly agreed, 63(22.99%) respondents agreed, 15(5.47%) respondents disagreed, 34(12.41%) respondents strongly disagreed. The mean response was 4.164; this means that on average the respondents agreed the facility administers the maternal health care services for free regardless of the clients' status.

The respondents were asked whether they had been asked for money by the doctor, nurse or other staff other than fee for registration and purchase of the card. A total of 47(17.15%) respondents strongly agreed, 37(13.5%) respondents agreed, 94(34.31%) respondents disagreed and 96(35.04%) respondents disagreed. The mean response was found to be 2.777; this shows that the mothers were divided on whether or not they were asked to pay for other fees other than for registration and purchase of the card.

The respondents were asked whether they have been provided with free medicines from the hospital. A total of 148(54.01%) respondents strongly agreed, 83(30.29%) respondents agreed, 14(5.11%) respondents disagreed and 29(10.58%). On average the mean score was 4.172; this means that on average the mothers agreed that they were provided with free medicine form the hospitals.

The respondents were asked whether their religion and culture did not allow them to access and utilize the free maternal health care. A total of 29(10.58%) respondents strongly agreed, 13(4.74%) respondents agreed, 111(40.51%) respondents disagreed and 121(44.16%) respondents strongly disagreed. The mean response was 2.376; this means that on average the respondents disagreed that the religion and culture did not allow them to access and utilize the free maternal health care.

When the respondents were asked whether it is very important for women to utilize the free maternal health care but my culture does not allow for the same. A total of 94(34.31%) respondents strongly agreed, 43(15.69%) respondents agreed, and 78 (28.47%) respondents disagreed, and 59(21.53%) strongly disagreed. The mean response was 3.412; this means that on average the mothers were divided on whether or not it was very important for women to utilize the free maternal care.

The respondents were asked whether they believed all health workers are adequately skilled to deliver the free maternal health care. A total of 24(8.76%) respondents strongly agreed, 17(6.2%) respondents agreed, 116(42.34%) respondents disagreed and 117(42.7%) respondents strongly disagreed. The mean response was 2.383, this showed that on average the respondents disagreed that all health workers were adequately skilled to deliver the free maternal care.

From table 4.15, most of the respondents on average were having a positive attitude towards the free maternity care as they were positive towards its benefits, provision of medicine and implementation.

The study went on to explore the attitude of the mothers towards the utilization of the free maternity care. The respondents were asked to state how they felt about free maternity care in general. They were to respond as very positive, positive, neutral, negative and very negative. This was cross-tabulated with extent of utilization and presented in table 4.16.

Table 4.16: Influence of attitude on utilization of free maternity care

Rate	Extent of utilization				Total	
	High extent		Very high extent			
	Freq.	%	Freq.	%	Freq.	%
Very positive	74	41.34	50	52.63	124	45.26
Positive	65	36.31	31	32.63	96	35.04
Neutral	40	22.35	14	14.74	54	19.71
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.16, out of the 179 respondents who were of the view that they used the free maternity care to a high extent, 74(41.34%) were having a positive attitude towards the free maternity care, 65(36.31%) respondents were having a positive attitude towards the free maternity care and 40(22.35%) respondents were having a neutral attitude towards the free maternity care. On the other hand among the mothers who were of the view that they used the free maternity care to a very high extent, 50(52.63%) had a very positive attitude, 31(32.63%) respondents had a positive attitude and 14(14.74%) respondents were having neutral attitude.

4.5.2 Staffing and staff skills on the extent of utilization of free maternal care

The study went on to explore the influence of staffing in the maternity health care on the extent of utilization of the free maternity care and presented the findings in table 4.17.

Table 4.17: staffing and utilization of free maternity care

	High extent		Very high extent		Total	
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Very adequate	68	37.99	16	16.84	84	30.66
Adequate	69	38.55	29	30.53	98	35.77
Not adequate	40	22.35	47	49.47	87	31.75
Don't know	2	1.12	3	3.16	5	1.82
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.17, out of the 179 respondents who utilized the free maternity care to a high extent, 68(37.99%) were sampled from health facilities that were very adequately staffed, 69(38.55%) were sampled from hospitals that were adequately staffed, 40(22.35%) respondents were sampled from hospitals that were not adequately staffed and 2(1.12%) didn't know the level of staffing in the hospitals. In the category of 95 respondents who utilized the free maternity care to a very high extent, 16(16.84%) respondents were sampled from health cares that were very adequately staffed, 29(30.53%) were sampled from hospitals that were adequately staffed, 47(49.47%) respondents were sampled from hospitals that were not adequately staffed and 3(3.16%) didn't know the level of staffing in the hospitals.

4.5.3 Accessibility of maternal services on utilization of the free maternal care

The study explored the influence of the level of accessibility of the free maternity care on the level of utilization of the free maternity care and presented the findings in table 4.18.

Table 4.18: Level of accessing free maternal health care

	High extent		Very high extent		Total	
Rate	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Excellent	56	31.28	22	23.16	78	28.47
Very good	71	39.66	31	32.63	102	37.23
Good	36	20.11	36	37.89	72	26.28
Poor	7	3.91	4	4.21	11	4.01
Very poor	9	5.03	2	2.11	11	4.01
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.18, out of the 179 respondents who level of accessibility to the free maternity care was high, 56(31.28%) respondents rated their accessibility of the free maternal care as excellent, 71(39.66%) respondents rated their level of accessibility of the free maternal care as very good, 7(3.91%) respondents rated their accessibility of the free maternal care as poor and 9(5.03%) respondents rated their accessibility of the free maternal care as very poor. In the category of 95 respondents who rated their level of utilization of the free maternal care as to a very high extent, 22(23.16 respondents %) rated their accessibility of the free maternity care as excellent, 31(32.63%) respondents

rated their accessibility of the free maternal care as very good, 36(37.89%) respondents rated their accessibility of the free maternal care as good, 4(4.21%) respondents rated their accessibility of the free maternity care as poor and 2(2.11%) respondents rated their accessibility of the free maternity care as very poor.

4.6 How Knowledge of mothers on free maternal care influence the utilization of maternal care

The fourth objective explored how knowledge of mothers on free maternal health care influence the utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County.

4.6.1 Respondents source of Information on free maternal health care

The study started by exploring the source of information of the mothers on the free maternal care and presented the findings in table 4.19.

Table 4.19: Source of information on free maternal care

Source of information	Frequency	Percentage
Community health worker	102	37.27
Radio	72	26.28
Hospital / health center	48	17.52
NGO	37	13.50
Community meeting	6	2.19
Religious leader	5	1.82
Husband	4	1.46
Total	**274**	**100**

From table 4.19, 102(37.27%) respondents received information on the free maternal care from the community health worker, 72(26.28%) respondents received information of the free maternal care from the radio, 48(17.52.04%) respondents received information on the free maternal care from hospital / health center, 37(13.5%) respondents received information from NGOs, 6(2.19%) respondents received from information from a

community meeting, 5(1.82%) respondents received information on free maternal care from religious leader and 4(1.46%) respondents received the information from their husbands.

The study explored the influence sharing of information on free maternity care on extent of utilization of the free maternity care and presented the findings in table 4.20.

Table 4.20: Sharing of information on free maternal health by the facility.

	High extent		Very high extent		Total	
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Yes	169	94.41	85	89.47	254	92.7
No	10	5.59	10	10.53	20	7.3
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.20, 254(92.7%) respondents received information on free maternity care from the health facility and 20(7.3%) respondents didn't receive information of free maternity care. In the category of 179 respondents who utilized the free maternity care to a high extent, 169(94.41%) respondents received information on the free maternity care from the health centers and 10(5.59%) respondents did not receive any information of the free maternity. In the group of 95 respondents who utilized the free maternity care to a very high extent, 85(89.47%) respondents received information of the free maternity care from the health facilities and 10(10.53%) respondents didn't receive information from the hospitals.

From these finding, utilization of the free maternity care was associated with access to information on the free maternal care by the health facilities this is so because a

proportion of 92.7% of the respondents who used the free maternity care had access to the information on the services from health facilities. Maternal information has a positive impact on the utilisation of healthcare services (Kogan & Leary, 1990; Elo, 1992; Nwakoby, 1994; Delvaux, 2001; Chakraborty etal., 2002). According to these authors, this phenomena increases women understanding about maternal morbidities and child mortality and enhances women's knowledge about the availability of healthcare services. Maternal information may also enable mothers to seek proper medical care whenever necessary.

The study went on to explore the influence of regular visiting of the health facilities staff for identification of pregnant women and its influence on extent of utilization of the free maternity care and presented the findings in table 4.21.

Table 4.21: Health facility visit to pregnant women for counselling services

	Extent of utilization				Total	
	High extent		Very high extent			
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Yes	151	84.36	85	89.47	236	86.13
No	28	15.64	10	10.53	38	13.87
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.21, 236 (86.13%) respondents were from villages where the health facility staff regularly visited for household identification of pregnant women for counselling services. In the category of 179 respondents who utilized the free maternity care to a high extent, 151(84.36%) respondents were from villages where the health facility staff regularly visited for household identification of pregnant women for counselling services. On the other hand in the category of respondents who were from villages where mothers utilized free maternity to a very high extent, 85(89.47%) were from villages where the health facility staff supported the community health workers to visit all households with the intension of identifying all pregnant women for the WHO recommended targeted counseling during pregnancy where mother are counseled on the importance of ANC visits, hospital delivery, Danger signs in pregnancy among others. This has helped in the reduction of complications and maternal deaths among mothers.

From these finding utilisation of the free maternal care to a high or very high extent was associated with regular visiting of the health facility staff for household identification of pregnant women for counselling services.

4.6.2 Importance of maternal health care

The study explored the opinion of the respondents on for what reason they preferred in the health facilities and presented the findings in table 4.22.

Table 4.22: Reasons for delivering in the health facility

Response	Frequency	Percentage
Safe to deliver	82	29.92
Skilled care from health workers	122	44.53
Health facility is near	48	17.52
Recommended by relatives	22	8.03
Total	**274**	**100**

From table 4.22, 82(29.92%) respondents preferred that free maternity care because it was safe to deliver using the method compared to the mid wives. A total of 122(44.53%) respondents preferred the free maternal care because of the skilled care from health workers, 48(17.52%) respondents preferred the free maternal care services because the health facility was near and lastly 22(8.03%) respondents preferred the free maternal care services because it was recommended by relatives.

The study went on to explore the influence of health facility organizing monthly health days of ANC and other maternal care services on the extent of utilization of free maternity care services. Table 4.23 shows the analysis in a cross-tabulation.

Table 4.23: Organization of monthly health days for ANC

	Extent of utilisation				Total	
	High extent		Very high extent			
Response	**Freq.**	**%**	**Freq.**	**%**	Freq.	%
Yes	37	20.67	5	5.26	42	15.33
No	142	79.33	90	94.74	232	84.67
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.23, 42(15.33%) respondents experienced monthly health days of ANC and other maternal health care and 232(84.67%) respondents didn't experienced monthly health days of ANC and other maternal health care. In the category of 179 mothers who utilized the free maternal care to a high extent, 37(20.67%) respondents experienced monthly health days of ANC and other maternal health care and the other 142(79.33%) didn't respondents didn't experienced monthly health days of ANC and other maternal health care. In the other category of 95 respondents who said that they accessed the free maternity to a very high extent 5(5.26%) experienced monthly health days of ANC and the other 90(94.74%) respondents didn't experienced monthly health days of ANC.

4.6.3 Number of free maternal services offered.

The study explored the free maternal services offered from the view of the mothers and presented the findings in table 4.24.

Table 4.24: Free maternal services offered

Response	Frequency	Percentage
Immunization services	**122**	**44.53**
Post natal care	**16**	**5.84**
Normal delivery	**114**	**41.60**
Family planning	**22**	**8.03**
Total	**274**	**100**

From table 4.24, 122(44.53%) respondents reported that one of the free maternal care services was the immunization services, 16(5.84%) respondents said that post natal care services was a free service offered in free maternal care services, 114(41.60%) respondents said that they received free normal delivery, 22(8.03%) respondents said that family planning was the other free maternal care service offered. The study explored the influence of CHEW on the extent of utilization of the free maternity care and presented the findings in table 4.25.

Table 4.25: Counselling on care during pregnancy provided by CHEW

	High extent		Very high extent		Total	
Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Yes	156	87.15	93	97.89	249	90.88
No	23	12.85	2	2.11	25	9.12
Total	**179**	**100**	**95**	**100**	**274**	**100**

From table 4.25, a total of 249(90.88%) respondents received counseling from the CHEW during the pregnancy period and 25(9.12%) respondents received no counselling on care

during pregnancy. In the category of 179 respondents who rated their utilization of the free maternal care as to a high extent, a total of 156(87.15%) respondents received counseling from the CHEW during the pregnancy period and 23(12.85%) respondents received no counselling on care during pregnancy. In the category of 95 respondents who rated their utilization of the free maternal care as to a very high extent, a total of 93(97.89%) respondents received counseling from the CHEW during the pregnancy period and 2(2.11%) respondents received no counselling on care during pregnancy.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this section the sub topics were discussed as: Summary of findings, conclusions of the study and recommendations for future research for policy and contribution to the body of knowledge.

5.2 Summary of the Study Findings

The study had four major themes: Socioeconomic factors and utilization of maternal care, administration of the maternal care and utilization of maternal health care, attitude of mothers and the utilization of maternal care and knowledge of mothers on maternal care and the utilization of maternal care.

The first objective for this study was to establish the level at which socioeconomic factors influence utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County. The finds shows that mothers who utilized the free maternal care to a very high extent, there was a higher proportion of mothers who earned lower income of less than 5000 shillings a month compared to those who utilized free maternal care to a high extent, i.e. 95.79% compared to 82.68%. The findings also indicate a higher proportion of housewives were adopting the utilisation of free maternity care to a very high extent compared to those who had adopted it to a high extent. Mothers who were farmers or self-employed had adopted the utilisation of free maternal care to a lower extent. From these findings, there were a high proportion of mothers among those who accessed the free maternity care to a very high extent who didn't pay any extra fees. On the other hand, among those who accessed the free maternity care to a high extent there was a high proportion who paid extra fees. This shows that payment of extrea frees reduced the chances of accessing free maternity care by women. From the findings, most mothers who accessed the free maternity care to a very high extent were taking between 30 minutes and 1 hour to get to hospital and most of the mothers who were accessing the

free maternity care to a high extent were taking less than 30 minutes to walk to the hospital thus the findings show that utilization of the free maternity care was associated with less time of walk to the hospital.

The second objective for this study was assess the extent to which administration of the free maternal care influence the utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County. From these finding, utilization of the free maternity care was associated with access to information on the free maternal care by the health facilities this is so because a proportion of 92.7% of the respondents who used the free maternity care had access to the information on the services from health facilities. 179 respondents who utilized the free maternal care to a high extent, 171(95.53%) respondents were satisfied with the services they received for the free maternal care services and the other 8(4.47%) %) respondents were not satisfied with the services they received. In the other category of 95 respondents who said that they accessed the free maternity to a very high extent 92(96.43%) respondents were satisfied with the services they received for the free maternal care services and the other 3(3.16%) respondents were not satisfied with the services they received. This shows that quality services influenced utilization of free maternal health care among women. Hospital physical conditions, availability of social amenities such as water supply, functional toilet and all necessary equipment greatly influence women decision to utilize the free maternal health care

The third objective for this study to examine how mothers' attitude influence utilization of the free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County. The findings shows that 267(97.45%) respondents were satisfied with the attitude of personnel for the free maternity and 7(2.55%) respondents said that they were not satisfied with the attitude of personnel for the free maternity. Out of the 179 respondents who were of the view that they used the free maternity care to a high extent, 74(41.34%) were having a positive attitude towards the free maternity care, 65(36.31%) respondents were having a positive attitude towards the free maternity care and 40(22.35%) respondents were having a neutral attitude towards the free maternity care.

On the other hand among the mothers who were of the view that they used the free maternity care to a very high extent, 50(52.63%) had a very positive attitude, 31(32.63%) respondents had a positive attitude and 14(14.74%) respondents were neutral

The fourth objective explored how knowledge of mothers on free maternal health care influence the utilization of free maternal health care in Muhuru and Nyatike Division, Nyatike Sub County. The study indicate that a significant number of women receive the information through the radio in comparison to the other medias of communication.

5.3 Conclusions

This chapter has provided the possible recommendations that could be used by the Ministry of Health, the hospitals' management committees and the service providers to improve the free maternal health care in the Nyatike and Muhuru Sub County. It is important however for the health professionals to understand the barriers that hinder women from utilizing the free maternal health care as this provides evidence to address women's problems using the community strategy model rather than the medical model that only looks at the current disease map as the only problem of the client.

5.4. Recommendations

In order to improve access to the free maternal health care, government should locate health services as close as possible to the community where the people live. This could be done by training more midwives as well as Community Health Workers who serve as the critical link between communities and health facilities in Kenya, and assign them to manageable households at community level by doing so more women will be reached with information on the importance of the maternal health boosting the levels of uptake.

Training more staff and equipping them with appropriate tools and responsibilities to teach the women about the importance of free maternal health care services can also improve accessibility.

The ministry of health has to make a comprehensive plan to overcome informational barriers by increasing the women's knowledge and awareness of the need to go for, and availability of maternal care services.

By use of existing media platform (local level radios, outreach services, the church to pass information to communities) In addition, women should also be educated about the risks they face, signs of danger and their right and the need to have decision-making powers over their own health.

The ministry of health should ensure that all health facilities have enough essential drugs to avoid cases where women are referred drugs them from private pharmacy this contribute as a barrier to women. There should also emphasize on high quality services rendered at health facilities. This requires health systems to have an adequate trained staff, a regular supply of drugs, equipment, and other supplies. Functioning referral systems and transport are also necessary to ensure that women in need of higher-level care get it quickly. Besides the ministry of health should enforce standards and protocols for service delivery, management, and supervision and use them along with feedback from clients to monitor and evaluate service quality.

The hospital authorities can ensure that services are provided at convenient hours, in a comprehensive non-fragmented manner, with privacy and respect and responsive to women's needs, preferences, and cultural beliefs. This can be done through strengthening mechanisms to evaluate the quality of services, incorporating both the clients and the providers through training of the Community Health Committees whose role is oversight and governance in the community tier in healthy.

The hospitals' managements are requested to improve on free maternal health care awareness and to incorporate it among the community agendas during dialogue days, action days and other community discussions; this will help to improve the utilisation of free maternal health services among women.

In order to improve utilization of free maternal health care in Nyatike and Muhuru area, the service providers would benefit from training in how to improve their social relationships with clients to make the services user-friendlier. This would possibly and consequently boost the use of the services.

Barriers such as long waiting time, lack of drugs, and inadequate number of staff need to be looked at by the hospital authorities so as to provide a good conducive atmosphere to the clients.

The service providers need create a supportive environment in which clients are sufficiently informed, confident and encouraged to voice their opinions as well. This will help to strengthen the client-service provider relationship, enhance client's satisfaction.

There is need to develop strategies for involvement of key decision makers in maternal care by to ensuring that messages reach those who actually make the decisions such as mothers-in-law, husbands, community and religious leaders.

Further research is recommended in the area of determinants of utilization of free maternal health care in other parts of the Country, because many of the studies reviewed that despite the introduction of the free maternal health care utilization of the services at still very low and the maternal deaths are on the increase. For Kenya to achieve the millennium development goal 4&5 all the hindering factors must be address first. Research should cover rural and urban areas or various social set-ups.

BIBLIOGRAPHY

Addai I. (2008). Demographic and sociocultural factors influencing use of maternal health services in Ghana. African Journal of Reproductive Health 2(1):73-80.

Addai, I. (2000). Determinants of use of maternal-child health services in rural Ghana. Journal of Biosocial Science 32(1):1-15

Adekunle, C., V. Filippi, W. Graham, P. Onyemunwa, and E. Udjo (2000). Patterns of maternity care among women in Ondo States, Nigeria. In Determinants of health and mortality in Africa, ed. Allan G. Hill, Demographic and Health Survey Further Analysis Series No. 10, 1-45. New York: The Population Council.

Adetunji, J.A. (2001). Response of parents to five killer diseases among children in a Yoruba community, Nigeria. Social Science & Medicine 32(12):1379-1387

Alter, D. A., Iron, K., Austin, P. C., Naylor, C. D., & SESAMI Study Group. (2004). Socioeconomic status, service patterns, and perceptions of care among survivors of acute myocardial infarction in Canada. *Jama*, *291*(9), 1100-1107.

Belay, T. (2007). Correlates of antenatal care attendance among women in Yirgalem town and surrounding peasant associations, Southern Ethiopia (unpublished M.Sc. thesis)

Bertrand, J. T., Escudero, G., Soukaloun, D., Kounnavong, S., Pengdy, B., Boupha, B., ... & Leroy, J. L. (2013). Compendium of indicators for evaluating reproductive health programs. Volume 2. *Annals of Tropical Paediatrics*, *23*(2), 181-186.

Bicego, George, Siân Curtis, Hendrik Raggers, Saidi Kapiga, and Sylvester Ngallaba. (2007). Sumve Survey on Adult and Childhood Mortality, Tanzania, 2005: In-depth study on estimating adult and childhood mortality in settings of high adult mortality. Calverton, Maryland: Macro International Inc.

Bilszta, J. L., Tsuchiya, S., Han, K., Buist, A. E., & Einarson, A. (2011). Primary care physician's attitudes and practices regarding antidepressant use during pregnancy: a survey of two countries. *Archives of women's mental health*, *14*(1), 71-75.

Bryman, A., & Cramer, D. (2011). Quantitative data analysis with IBM SPSS 17, 18 & 19: A guide for social scientists. Routledge.

Celik, Y., and D.R. Hotchkiss. (2000). The socioeconmoic determinants of maternal health care utilization in Turkey. Social Science & Medicine 50(12):1797-1806

Central Statistical Authority (CSA) [Ethiopia] and ORC Macro. (2001). Ethiopia Demographicand Health Survey 2000. Addis Ababa, Ethiopia, and Calverton, Maryland, USA: Central Statistical Authority and ORC Macro.

Champagne, F. A. (2008). Epigenetic mechanisms and the transgenerational effects of maternal care. *Frontiers in neuroendocrinology*, *29*(3), 386-397.

Champagne, F. A., Weaver, I. C., Diorio, J., Dymov, S., Szyf, M., & Meaney, M. J. (2006). Maternal care associated with methylation of the estrogen receptor-α1b promoter and estrogen receptor-α expression in the medial preoptic area of female offspring. *Endocrinology*, *147*(6), 2909-2915.

Choi, J. K., Palmer, R. J., & Pyun, H. S. (2012). Three measures of non-resident fathers' involvement, maternal parenting and child development in low-income single-mother families. *Child & Family Social Work*.

Chopra, M., Daviaud, E., Pattinson, R., Fonn, S., & Lawn, J. E. (2009). Saving the lives of South Africa's mothers, babies, and children: can the health system deliver?. *The Lancet*, *374*(9692), 835-846.

Chung, C., Kante, A. M., & Phillips, J. (2013, November). Do women bypass village services for better maternal health care in clinics? a case study of antenatal care seeking in three rural districts of Tanzania. In *141st APHA Annual Meeting (November 2-November 6, 2013)*. APHA.

Chung, J. J., Angel, M., Soto, T., & Sukkarieh, S. (2012, October). A new utility function for smooth transition between exploration and exploitation of a wind energy field.

In *Intelligent Robots and Systems (IROS), 2012 IEEE/RSJ International Conference on* (pp. 4999-5005). IEEE.

Denise G. (2010), Maternal Deaths Decline Sharply Across the Globe, Published on the New York Times. 13 April 2010. Retrieved from http://www.nytimes.com/2010/04/14/health/14births.html?_r=4&pagewanted=1&

Fatusi A, Babalola S. (2009). Determinants of use of maternal health services in Nigeria looking beyond individual and household factors. BMC Pregnancy and childbirth, 9 (5): 43 – 54

Field, D., Petersen, S., Clarke, M., & Draper, E. S. (2002). Extreme prematurity in the UK and Denmark: population differences in viability. *Archives of Disease in Childhood-Fetal and Neonatal Edition*, *87*(3), F172-F175.

Gertler, P.J., and J. van der Gaag. (2008). Measuring the willingness to pay for services in developing countries. LSMS working paper No. 45. Washington, D.C.: The World Bank.

Gertler, P.J., L. Locay, and W. Sanderson. (2008). Are user fees regressive? The welfare implications of health care financing proposals in Peru. In Health care financing and the demand for medical care, ed. P. Gertler, L. Locay, W. Sanderson, A. Dor, and J. van der Gaag, LSMS working paper No. 37. Washington, D.C.: The World Bank

Gupta, S.J (2007), Fundamentals of Statistics, Mumbai, Himalaya Publishing

Henneck, R. (2003). Family Policy in the US, Japan, Germany, Italy and France: Parental Leave, Child Benefits/Family Allowances, Child Care, Marriage/Cohabitation, and Divorce. A Briefing Paper Prepared by the Council on Contemporary Families.

Hogan, M. C., Foreman, K. J., Naghavi, M., Ahn, S. Y., Wang, M., Makela, S. M., ... & Murray, C. J. (2010). Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. *The Lancet*, *375*(9726), 1609-1623.

Hosseinpoor, A. R., Victora, C. G., Bergen, N., Barros, A. J., & Boerma, T. (2011). Towards universal health coverage: the role of within-country wealth-related inequality in 28 countries in sub-Saharan Africa. *Bulletin of the World Health Organization*, *89*(12), 881-889.

Karanganza, K. F. (2005). Perceptions and practices towards antenatal care, safe delivery, and postnatal care, *BJOG: An International Journal of Obstetrics & Gynaecology*, *6*(4), 524-692.

Kenya National Commission for Human Rights (2013), Implementing Free Maternal Health Care in Kenya,

Kenya National Commission on Human Rights (2012). Realizing Sexual and Reproductive Health Rights in Kenya: A Myth or Reality? , p40 -41

Kiwuwa, M. S., & Mufubenga, P. (2008). Use of antenatal care, maternity services, intermittent presumptive treatment and insecticide treated bed nets by pregnant women in Luwero district, Uganda. *Malaria journal*, *7*(1), 44.

Koblinsky, M. A. (Ed.). (2003). *Reducing Maternal Mortality: Learning from Bolivia, China, Egypt, Honduras, Indonesia, Jamaica, and Zimbabwe*. World Bank Publications.

Kothari, R.C. (2003). Research Methodology methods and Techniques. New Delhi International Ltd. Publishers.

Kwast, B.E., and J.M. Liff. (2008). Factors associated with maternal mortality in Addis Ababa, Ethiopia. International Journal of Epidemiology 17(1):115-121

Kwast, B.E., and J.M. Liff. 2008. Factors associated with maternal mortality in Addis Ababa, Ethiopia. International Journal of Epidemiology 17(1):115-121.

Labrique, A. B., Sikder, S. S., Wu, L., Rashid, M., Ali, H., Ullah, B., ... & Christian, P. (2013). Beyond pregnancy–the neglected burden of mortality in young women of reproductive age in Bangladesh: a prospective cohort study. *BJOG: An International Journal of Obstetrics & Gynaecology*, *120*(9), 1085-1089.

Lancet, D Sachs JD, McArthur J (2005). The Millennium Project: a plan for meeting the Millennium Development. Longman Publishing, Washington

Leslie, J., and G.R. Gupta. (2009). Utilization of formal services for maternal nutrition and health care. Washington, D.C.: International Center for Research on Women.

Mesganaw, F., G. Olwit, and D. Shamebo. (2000). Determinants of ANC attendance and preference of site or delivery in Addis Ababa. Ethiopia Journal of Health Development 6(2):17-21

Mugenda, O.M.&Mugenda, A. G. (2008), Research Methods: Quantitative & Qualitative Approaches, Acts Press, Nairobi Kenya.

Mwaniki, P. K., Kabiru, E. W., & Mbugua, G. G. (2002). Utilisation of antenatal and maternity services by mothers seeking child welfare services in Mbeere District, Eastern Province, Kenya. *East African Medical Journal*, *79*(4), 184-187.

Myer, L., & Harrison, A. (2003). Why do women seek antenatal care late? Perspectives from rural South Africa. *Journal of Midwifery & Women's Health*, *48*(4), 268-272.

Ngechu, D (2006). Conceptual Framework in Social Sciences. Eagle Cliffs: Prentice Hall.

Nigussie M, Haile Mariam D, Mitike G. (2004). Asssessment of safe delivery service tilization among women of childbearing age in north central Gondar zone, northwest Ethiopia. Ethiopia J Health Dev, 18 (3).

Oso, W. Y., & Onen, D. (2009). A general guide to writing research proposal and report. Jomo Kenyatta Foundation..

Oso, Y.W& Onen, D. (2009) A General Guide to Writing a Research Proposal and Report, Jomo Kenyatta Foundation, Nairobi, Kenya.

Otieno W. O (2013), Kenya's Other Great Catastrophe: Women and Infants Dying in Childbirth," The Guardian, September 28, 2013, http://www.theguardian.com/commentisfree/2013/sep/28/kenya-westgate-maternal-infant-mortality

Owino H. (2013), "Despite Setbacks, Free Maternal Health Care Will Work Out," Reject no. 087 (July 16, 2013): 6

Pelto, G.H. (2007). Cultural issues in maternal and child health and nutrition. Social Science & Medicine 25(6):553-559.

Persson, L. Å., Arifeen, S., Ekström, E. C., Rasmussen, K. M., Frongillo, E. A., & MINIMat Study Team. (2012). Effects of prenatal micronutrient and early food supplementation on maternal hemoglobin, birth weight, and infant mortality among children in Bangladesh: the MINIMat randomized trial. *JAMA*, *307*(19), 2050-2059.

PSI Kenya (2013), "Free Maternal Health Care Holds Promise in Kenya," PSI Impact Blog, July 16, 2013, Retrieved from http://blog.psiimpact.com/2013/07/the-daily-impact-free-maternal-health-care-holds-promise-in-kenya/

Ronsmans, C., & Graham, W. (2006,). *Maternal Mortality: who, when, where and why?* London, R. Horton, Ed

Sallam, S. A., Babrs, G. M., Sadek, R. R., & Mostafa, A. M. (2013). Knowledge, attitude, and practices regarding early start of breastfeeding among pregnant, lactating women and healthcare workers in El-Minia University Hospital. *Breastfeeding Medicine*, *8*(3), 312-316.

Stephen R (2011), Primary maternity services in Australia – A framework for implementation, Retreved from http://www.ahmac.gov.au/cms_documents/Primary%20Maternity%20Services%20in%20Australia.pdf

Tann, C. J., Kizza, M., Morison, L., Mabey, D., Muwanga, M., Grosskurth, H., & Elliott, A. M. (2007). Use of antenatal services and delivery care in Entebbe, Uganda: a community survey. *BMC pregnancy and childbirth*, *7*(1), 23.

Teate, A., Leap, N., Rising, S. S., & Homer, C. S. (2011). Women's experiences of group antenatal care in Australia—the CenteringPregnancy Pilot Study. *Midwifery*, *27*(2), 138-145.

Tomkinson, J., Baradaran, N., Wendy, A., & Patricia McNiven, R. M. (2011). Birth technology and maternal roles in birth: knowledge and attitudes of Canadian

women approaching childbirth for the first time. *J Obstet Gynaecol Can*, *33*(6), 598-608.

Turan, J. M., Bukusi, E. A., Cohen, C. R., Sande, J., & Miller, S. (2008). Effects of HIV/AIDS on maternity care providers in Kenya. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, *37*(5), 588-595.

USAID (2011), Assesment of Knowledge and Attitude of married women in maternal and Newborn Isues in selected areas in the North rift region, USAID publishing

Van Eijk, A. M., Bles, H. M., Odhiambo, F., Ayisi, J. G., Blokland, I. E., Rosen, D. H., ... & Lindblade, K. A. (2006). Use of antenatal services and delivery care among women in rural western Kenya: a community based survey. *Reproductive health*, *3*(1), 2.

Villadsen, S. F., Mortensen, L. H., & Andersen, A. N. (2009). Ethnic disparity in stillbirth and infant mortality in Denmark 2001–2003. *Journal of epidemiology and community health*, *63*(2), 106-112.

Wiegers, T. A. (2003). General practitioners and their role in maternity care. *Health Policy*, *66*(1), 51-59.

Williams, C.D., N. Baumslag, and D.B. Jelliffe. (2005). Mother and child health: Delivering the services. Second edition. London: Oxford University Press.

World Bank (2013), World Development Indicators: Health systems, Retreived from http://wdi.worldbank.org/table/2.15 on 24/1/2014

World Bank. (2004a). Better health in Africa: Experience and lessons learned. Washington, D.C.: World Bank.

World Bank. (2004b). World development report: Infrastructure for development. New York, New York: Oxford University Press.

World Health Organization (WHO). (2008). Improved access to maternal health services. WHO 98.7. Geneva: WHO.

Yount, K. M. (2004). Maternal resources, proximity of services, and curative care of boys and girls in Minya, Egypt 2005–97. *Population studies*, *58*(3), 345-355.

APPENDICES

APPENDIX 1: LETTER OF TRANSMITTAL

Christine K. Mugambi,
P.O Box 6038-40100,
Kisumu Kenya
Cell phone: 0720821954
nashch48@yahoo.com

Dear Respondent

My names are Christine Kanana Mugambi, a student at the University of Nairobi undertaking a master's degree in project planning and management. I am currently working on utilization of free maternal care in Nyatike and Muhuru divisions of Nyatike Sub County. Your answers to the attached questionnaires will be very helpful to me in compiling data for writing my project research report.

You have been selected to participate in this study and your contribution will determine the success of this study. I humbly request you to fill out these questionnaires .The results of this study will be treated with the highest level of confidence and there will be no identification of individuals. In case of any information or clarifications, please contact the researcher on telephone number

0720821954
Christine Kanana Mugambi

Thank you

APPENDIX 2: QUESTIONNAIRE FOR THE MOTHERS

Demographic Information

1. What is your level of education

   No formal education [ ] Primary education [ ]

   Secondary education [ ] college education [ ]

2. About how old are you?

   15-19yrs [ ] 20-24 [ ]

   25- 29 [ ] 30-34 [ ]

   - 35

3. How many children do you have?

   One Child [ ] Two children [ ]

   Three Children [ ] Four Children [ ]

   - Five Children

4. How long have you lived in this area?

   Less than one year [ ] 2Yr - 5 Years [ ]

   6years – 9 years [ ] 10 yrs-13yrs [ ]

Section 1; socioeconomic factors and utilization of maternal care

5. What is your present occupation?

   None [ ] housewife [ ] Self-employed [ ]

   Central government employee [ ] Local government employee [ ]

   Others (specify)……

6. What is the level of income per month in your family?

   Less than 5,000 [ ] 6,000-10,000 [ ]

11,000-15,000 [ ] Above 15,000 [ ]

7. What means of transport do you use to get to the hospital?

   Walk [ ] public transport and motorcycle [ ]

   Bicycle [ ] Private vehicle [ ]

   Others (specify?) …….

8. Did you have to pay any fee for the maternal services that you were provided in the hospital?
   Yes [ ] No [ ]

9. If yes what are the things you paid for and how much did they cost?
   ……

10. How difficult was it for you to find money to meet the cost of maternal services?

    Very difficult [ ] Quite difficult [ ]

    Not difficult [ ] I did not try [ ]

11. How long do you take to walk from your home to the health facility?

    Less than 30 mins [ ] 35 mins – 1 hour [ ]

    1 hour – 2 hours [ ] over 2 hours [ ]

Section 3; Administration of the maternal care and utilization of maternal health care

12. The health facility shares information regarding free maternal health care with community members?

    Yes [ ] No [ ]

13. Does the health facility regularly visit your village for household identification of pregnant women for counseling and advice?

    Yes: [ ] No [ ]

14. Does the health facility organize monthly health day for ANC and other maternal health care services in your village?

    Ye [ ] No [ ]

15. How long did you have to wait for the doctor/nurse to see you?

    Took less than 1hr [ ] Took 1hr [ ]

    Took more than 1hr: [ ]

16. Who attended to you at the health facility?

    Doctor [ ] Nurse [ ]

    CHW [ ] Others…….

17. Are you satisfied by the examination and check-up done by the health provider?

    Yes [ ] No [ ]

18. Are you satisfied with the services available at the health facility?

    Yes [ ] No [ ]

19. The health facility is located in its own premises and Building is in good repair/condition and has adequate privacy?

    Yes [ ] No [ ]

20. Health facility has regular water supply, functional toilet, regular electricity power and all necessary equipment for maternal services ?

    Yes [ ] No [ ]

21. Are you satisfied with the attitude of the personnel/ staff administrating the free maternal health care in the facility

    Yes [ ] No [ ]

22. What is your opinion on deliveries through midwives?

    Excellent [ ] very good [ ] good [ ]

    Poor [ ] very poor [ ]

Section 4; Attitude of mothers and utilization of maternal care.

Respond to the following questions as they apply to you? Please tick where appropriate

Question	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**I don't know**
I have to pay for some maternal health care service during deliver at the facility?					
The facility administers the maternal health care services for free regardless of the clients' status?					
I have been asked for money by the doctor, nurse or other staff other than fee for registration and purchase of the card?					
Have you been provided free medicines from the hospital?					
My region and culture does not allow me to access and utilize the free maternal health care?					
It is very important for women to utilize the free maternal health care but my culture does not allow for the same?					
The health facility has all the medicines and equipment necessary for safe delivery**.**					
The facility does not have all the medicines and equipment necessary for safe deliver					
I don't think health workers at the health facility are adequately skilled to deliver the free maternal health care					
All health workers are adequately skilled to deliver the free maternal health care?					

The maternity services offered in the hospital are of high quality and I would recommend the facility to other women?					
I would not recommend the facility to other women due to the poor services offered there?					

Respond to the following questions as they apply to you

23. Do you approve the use the free maternal care services?

    Strongly approve [ ] approve [ ] disapprove [ ]

    Strongly disapprove [ ] undecided [ ]

24. What do you like most about free maternal care? ……

25. What don't you like about free maternal care? ……..

26. What do you think should be done to enable more people access free maternal care?

Section 5; Knowledge of mothers on maternal care and the utilization of maternal care

27. What is the name of the nearest public health facility that offers the free maternal services?

28. How did you get information on the free maternal health care? Multiple responses possible.

    Radio [ ] Hospital / health Centre staff [ ]

    Community health worker [ ] Imam/mosque/ religious leader [ ]

    NGO/CBO/ women group [ ] Community meeting [ ]

    Husband/ relatives [ ] Others ……..

29. What free maternal services do you receive from this health facility?

    Ante natal [ ] Normal Delivery [ ]

    Family planning [ ] Post natal care [ ]

    Immunization services [ ]

30. Does CHEW provide counseling on care during the pregnancy, new born care etc (For those saying health facility in question)

    Yes [ ] No [ ]

31. For what reasons did you prefer to deliver in health facility?

    Safer to deliver there [ ] Skilled care from health workers [ ]

    Health facility is near [ ] Recommended by relative [ ]

32. What is your opinion on the staffing / availability of personnel in the health facility to offer the free maternal health care?

    Very Adequate [ ] Adequate [ ]

    Not adequate [ ] Don't know [ ]

33. What are the level of accessibility of free maternal health care by pregnant mothers in the facility

    Excellent [ ] very good [ ] good [ ]

    Poor [ ] very poor [ ]

34. What action did you take when you experienced these signs? Circle all mentioned

    Seek advice/treatment from health facility [ ]

    Seek advice/treatment from TBA [ ]

    Purchase medicine from pharmacy/ shop [ ]

    Seek prayers from religious leaders [ ]

    Nothing/ wait for problem [ ]

APPENDIX 3: INTERVIEW SCHEDULE FOR THE CHW

1. How would you describe the economic status of the women seeking the free maternal care services? (probe on whether educated, high earning women prefer the service)

2. What are the maternal services being provided in the health facility under the Free maternal health care?

3. How would you describe the improvement in the infrastructure base supporting the free maternal health care? (probe on whether there has been improvement to cater for the rising pressure)

4. Has the number of women seeking maternal care increased? (probe on the approximate percentage in increase)

5. Has there been capacity building on staff to handle the free maternal care?, how was it done

6. Do you think the health system has enough capacity to deal with free maternal health care in the facility?

7. Comment on the maternal and child mortality after the introduction of the free maternal care? What factors explain this state?

8. What is the capacity of the health care system to provide free maternal health care services?

9. What challenges are faced in the free maternal care and how can it be improved.

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

POPULATION	SAMPLE SIZE
10	10
20	19
30	28
40	35
50	44
60	52
70	59
80	66
90	73
100	80
150	108
200	132
250	162
300	169
400	196
1500	306
2000	322
3000	341
4000	351
5000	357
6000	361
7000	364
10000	370
20000	377
50000	381
100000	384

Source: R.V. Krejcie and D. Morgan (1970) Determination of sample size for research activities. Educational and psychological measurement.

APPENDIX 4: MOTHERS ATTENDING POSTNATAL CARE IN A YEAR

Name of health facilities in Muhuru and Nyatike	**NO. of mothers attending postnatal care in a year**
Nyatike Division	
Kombato Dispensary	880
Macalder Sub County Hospital	760 1100
Namba Kodero Dispensary	670
Wath Onger Dispensary	848
Kituka Dispensary	1096
Agenga Dispensary	642
Kabuto Dispensary	1052
Lwanda Dispensary	1047
Nyandago Dispensary	463
Bande Dispensary	591
Olasi Dispensary	472
Yago Dispensary	336
Muhuru Division	
Tagache Health Center	920 1280 1340
Winjo Dispensary	986
Otho Dispensary	665
Got Kachola Dispensary	740
Aneko Dispensary	620
Total	**9957**

Source: MOH 2013

APPENDIX5: NCSTI RESEARCH AUTHORIZATION LETTER

NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: 1254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

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

Ref: No.

Date:
19th August, 2014

NACOSTI/P/14/9867/2700

Christine Kanana Mugambi
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Determinants of utilization of Free Maternal Health Care in Muhuru and Nyatike Divisions, Nyatike Sub County, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Migori County** for a period ending **31st October, 2014.**

You are advised to report to **the County Commissioner and the County Director of Education, Migori 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.

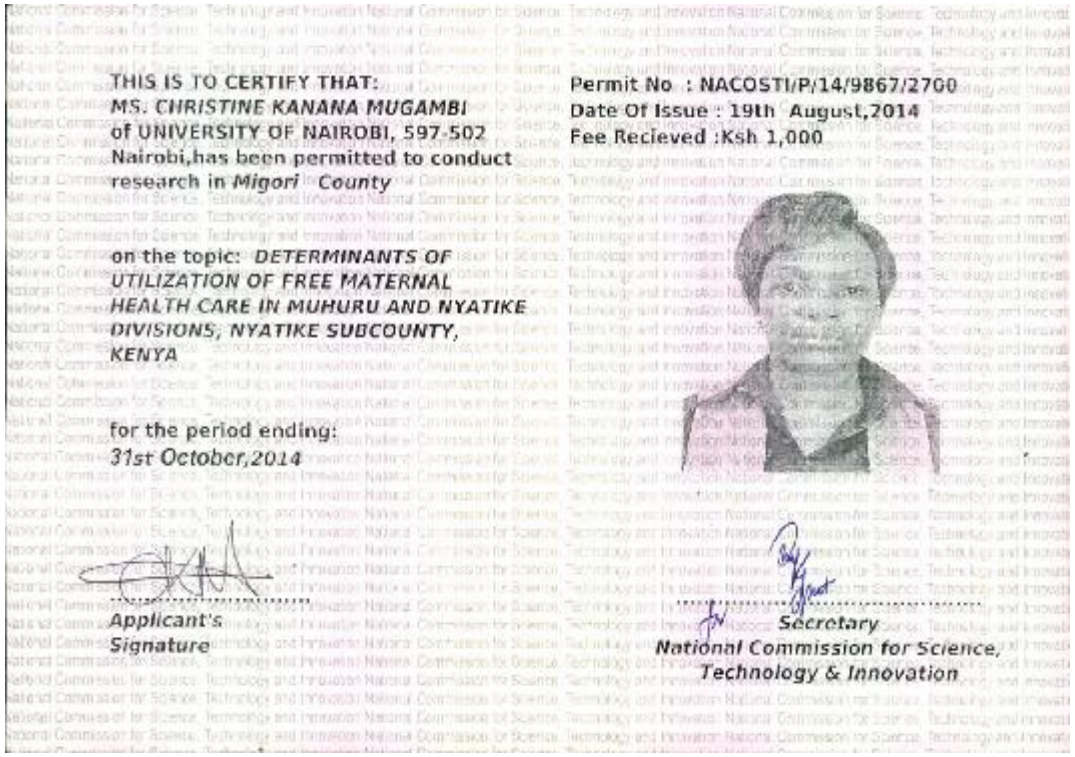
DR. S. K. LANGAT, OGW
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
Migori County.

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

APPENDIX6: RESEARCH CLERANCE PERMIT



THIS IS TO CERTIFY THAT:
MS. *CHRISTINE KANANA MUGAMBI*
of UNIVERSITY OF NAIROBI, 597-502
Nairobi,has been permitted to conduct
research in *Migori County*

on the topic: *DETERMINANTS OF UTILIZATION OF FREE MATERNAL HEALTH CARE IN MUHURU AND NYATIKE DIVISIONS, NYATIKE SUBCOUNTY, KENYA*

for the period ending:
31st October,2014

Permit No : NACOSTI/P/14/9867/2700
Date Of Issue : 19th August,2014
Fee Recieved :Ksh 1,000

Applicant's Signature

Secretary
National Commission for Science, Technology & Innovation

APPENDIX 7: NYATIKE SUBCOUNTY MAP