

**INFLUENCE OF FREE MATERNITY HEALTHCARE
PROGRAMME ON MATERNAL MORTALITY RATE IN KENYA: A
CASE OF KENYATTA NATIONAL HOSPITAL**

BY

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DECLARATION

This Research Project Report is my original work and has not been presented for a degree or any award in any university

Sign. Date

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L50/73403/2014

This Research Project Report has been submitted for examination with my approval as the university supervisor.

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DEDICATION

This Research Project Report is dedicated to my loving husband Olaoye Adeyemi John, my daughters Anita and Abigail and to my brother Joel Onditi.

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ABBREVIATIONS AND ACRONYMS

ANC:	Antenatal care
PNC:	Post Natal Care
FMC:	Free Maternity Care
KNH:	Kenyatta National Hospital
CEDAW:	Elimination of discrimination against women
EOC:	Essential obstetric care
KDHS:	Kenya Demographic and health survey
MDG:	Millennium development goal
MMR:	Maternal mortality ratio
MoH:	Ministry of health
SMI:	Safe motherhood initiative
TBA:	Traditional birth attendance
UNFPA:	United nation population fund
WHO:	World health organization
WRA:	Women of reproductive age

ABSTRACT

There is a growing movement, globally and particularly in the Africa region, to reduce financial barriers to health care. Approximately 585,000 women of Reproductive age die each year from pregnancy related causes worldwide according to the World Health Organisation (WHO). The purpose of the study was to examine how free maternity healthcare programme influences maternal mortality rate in Nairobi County, Kenya; a case of Kenyatta National Hospital. The study was guided by the following research objectives: to determine how free antenatal care influences maternal mortality rate in Nairobi County; to establish how free delivery care influences the lives of others in Nairobi County; to assess how free Emergency medical services influences maternal mortality rate in Nairobi County and to identify how free postnatal care influences maternal mortality rate in Nairobi County. The study was linked with the Anderson's Health Behavior theory. The target population of this study entailed 324 mothers who attend Kenyatta National Hospital (KNH) maternity clinic, 30 nurses ,20 paramedics and 10 doctors at KNH. The sample size was achieved using Krejcie and Morgan Table (1970). A descriptive survey research design shall be adopted for the study. The study focused on collecting primary and secondary data using a structured questionnaire and focus group discussions. Validity of the research instruments was determined by content and construct validity while reliability of the research instruments was determined by internal consistency method. Data collected was analyzed using both qualitative and quantitative approaches. SPSS version 21 was used to analyze the data collected. Non parametric data was analyzed using descriptive statistics such as measures of central tendency, variability and dispersion while parametric data was analyzed through correlation. The key findings of the study revealed that free maternity care has a direct relationship to maternal mortality rate; the rate of deaths due to pregnancy related causes have reduced significantly in Kenya since the introduction of this program. The study recommended that the government should develop both long term and short term strategies in implementing free maternal healthcare services in public hospitals including creating awareness, training staff and adding more services to the program.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The Free Maternal Health Care Initiative provides subsidized health insurance to pregnant women, giving them access to an existing range of insurance benefits that includes comprehensive maternity care with some notable exceptions such as ambulance service and post-partum family planning counselling. It is supported from the general pool of resources of the National Health Insurance Fund, which includes contributions from international partners via the health sector budget support (Arhinful D, 2010).

According to Centre for Disease and control (CDC), the total amount spent on health care in the USA is greater than any other country in the world. Despite this, women in the USA have a greater lifetime risk of dying of pregnancy-related complications than women in 40 other countries. For example, the likelihood of a woman dying during childbirth in the USA is five times greater than in Greece, four times greater than in Germany, and three times greater than in Spain. More than two women die every day in the USA from pregnancy-related causes. African-American women are at higher risk, they are nearly four times more likely to die of pregnancy-related complications than white women. The maternal mortality ratios are higher than for women in other industrialized countries. These rates and disparities have not improved in more than 20 years. Maternal mortality ratios have actually increased from a low of 6.6 deaths per 100,000 live births in 1987 to 13.3 deaths per 100,000 live births (Becak, 2006).

Japan achieved dramatic fall in maternal mortality over just a ten-year period from 1960 to 1970, with the maternal mortality ration (MMR) declining from 130 to 50 – almost a two-thirds reduction. This provides encouragement to many developing countries trying to achieve significant falls in maternal mortality in the period remaining up to 2015 – the target year for the Millennium Declaration. The success of Japan in tackling maternal mortality is due to a host of factors, but also provides evidence of the three main interventions which are needed everywhere in the world,

it has implemented universal access to skilled care at delivery; Japan has long invested in the training of professional midwives and nurses and ensuring their availability to women during pregnancy, delivery and post-natal care (at no cost). Today 100% of deliveries in Japan occur with help of health professionals and in health facilities equipped to manage normal cases or to promptly refer on complications to higher-level hospitals. Through the provision of quality skilled care, Japan has virtually eliminated one of the major causes of deaths to mothers and babies after birth.

In recent years, several African countries (including Burundi, Zambia, Burkina Faso, Liberia, Niger, and Sudan) have enacted policies to make deliveries and/or health care for mothers and children free or nearly free in order to fulfill these mandates. Sophie Witter (2009), Kenya's new free maternal health services policy is a potentially positive step in this direction. However, in order to comply with Kenya's international, regional, and local obligations, implementation of this policy must not override or diminish other rights provided by these frameworks.

In Burundi, for example, services for pregnant women and the under-fives were introduced in 2006, and utilization appears to have increased as a result, though no formal evaluation has been undertaken. Community health worker (CHW) programmes can improve maternal health, and have successfully reduced maternal mortality in both Ethiopia and Nepal. CHWs are instrumental in providing healthcare to underserved populations, particularly in rural areas, with few healthcare facilities. CHWs can improve maternal health more cost-effectively and reach more of the population if given the proper tools, such as mobile phones, bicycles and delivery kits (Ministry of Health of Burundi, 2008).

In Zambia, fees were suspended for rural districts in 2006. Progress is slower in some regions than others: while every North African country has reduced maternal mortality by at least 5.5 per cent per year since 1990, only one Sub-Saharan African country has achieved an average yearly reduction of more than 4 per cent. In Burkina Faso, an 80% subsidy policy for deliveries was launched in 2006. Other countries have followed suit, though with varying target groups, and all still at the stage of being elaborated.

In Rwanda a combination of community-based health insurance and performance-based funding has contributed to a dramatic reduction in maternal mortality rates in Rwanda. Rwanda is on target to meet MDG 5 and reduced its maternal mortality rate from 952 to 383 per 100,000 live births between 2000 and 2008 (Margaret C Hogan et al, 2010). The Government of Rwanda uses community-based health insurance (CBHI) coverage or “Mutuelles de Santé” to improve access to care for pregnant women. Each household pays a fee of \$2 per year, health services are almost free and almost 91 percent of Rwandans are currently insured (Republic of Rwanda Ministry of Health ,2010) .Resources are pooled at the community level and packages include both preventive and curative care. Through community health insurance, women have access to family planning and antenatal care and, if they have sought antenatal care, can give birth in healthcare facilities for free. In addition to establishing community-based health insurance, Rwanda has developed a nationwide system of contracts issued based on results – performance based financing (PBF) – which has supported dramatic improvements in maternal health. PBF involves contracts between central and local governments and healthcare facilities. The system typically measures the quantity of prevention interventions and the quality of both prevention and curative services (Ministry of Health of Rwanda, 2008). Good results are rewarded with increased funding for the relevant healthcare facilities and workers. Results based contracts in Rwanda have led to an increase in assisted birth deliveries and the quality of services. Additionally, the quality of antenatal care was 15 percent higher in performance-based financing clinics than in other clinics (The Partnership for Newborn, Maternal and Child Health, 2010).

The Government of Ghana introduced a free delivery care programme for all women in 2004, financed by money released from lower debt repayments. This programme led to an increase in births at medical facilities, specifically covering all institutional costs (Sophie Witter, 2009). Funding for the universal programme ended in 2007, when it was superseded by the National Health Insurance Scheme, also launched in 2004. From 2007, women who were not enrolled in NHIS had to pay delivery fees. In order to provide inexpensive access to care, the Government of Ghana announced in 2008 that all pregnant women were exempt from paying health insurance premiums, encouraging women to join the health insurance scheme and avoid paying user fees. Maternity services covered under the NHIS include antenatal care,

delivery, caesarean section, management of emergency obstetric conditions, and postnatal care. Population Council (2006), the Government of Ghana conducted its first survey on maternal morbidity and mortality, the Ghana Maternal Health Survey, in 2007. The maternal mortality ratio calculated for the five years preceding the survey was 580 per 100,000 live births. Ghana Health Services (2007) as the Government of Ghana has not conducted a survey since 2007, other sources estimate the 2008 maternal mortality ratio at 409 per 100,000 live births. This is a substantial reduction from the average maternal mortality ratio of 580 between 2001 and 2006, and from the 538 ratio for 2000 reported recently by the Lancet (Margaret *et al.*, 2010).

In Kenya, for example, various changes have been made to the user fee regime – most recently, in 2007, deliveries were announced to be free, though there is no evidence yet of implementation or impact.

1.2 Statement of the Problem

World health organization (WHO) estimates that more than 585,000 women of Reproductive age die each year from pregnancy related causes worldwide, 99% of these deaths occur in the less developed countries. The ratio of maternal mortality in Sub Sahara is the highest in the world estimated at 686per 100,000 live births (World Bank, 1994), if timely and appropriate obstetric care were accessed in the event of complication an estimated 75% of the above deaths could be prevented. While in many areas services simply do not exist and where they do, they are often underutilized. All women are at risk of obstetric complications; Access to adequate essential obstetric care (EOC) needs to be universal (WHO, 1998). It has been estimated by safe motherhood initiative (SMI)that 30 to 50 morbidities occur from maternal death (SMI, 2003). The rate of maternal mortality varies significantly across the world, and globally is the most inequitably distributed health indicator. One thousand women die per 100,000 live births in Sub-Saharan Africa, compared to 24 deaths per 100,000 live births in European countries (World Health Organization, 2005).

Maternal deaths are caused by a wide range of complications in pregnancy, childbirth or the postpartum period. Most of these complications develop because of the pregnancy itself, and some occur where pregnancy has aggravated an existing

disease. The four major killers are: severe bleeding (mostly bleeding postpartum), infections (also mostly soon after delivery), hypertensive disorders in pregnancy (eclampsia) and obstructed labor, (World Health Organization, 2005). Complications after unsafe abortion cause 13 per cent of maternal deaths. Globally, about 80 per cent of maternal deaths are due to these direct causes. Among the indirect causes of maternal death (20 per cent) are diseases that complicate or are aggravated by pregnancy, such as malaria, anemia and HIV. Women also die because of poor health at conception and a lack of adequate care needed for the healthy outcome of the pregnancy for themselves and their babies, (United Nations Children's Fund, 2007). Every year globally approximately 536,000 girls and women die from pregnancy-related causes – one girl or woman dies every minute. A recent Lancet study, using a revised maternal mortality methodology, estimates this number to be significantly lower – 343,000 in 2008, (World Health Organization, 2007).

Proper Antenatal care would help reduce these figures by more than 50% as it allows doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy while promoting healthy lifestyles that benefit both mother and child. has not been given the priority it deserves in Kenya. Although health sector infrastructure has grown over the past decade, many women still live at a considerable distance from health facilities, cannot afford to pay fees for antenatal services, and/or face other barriers to accessing quality care. On June 1, 2013, the Government of Kenya took action to address this problem by initiating a policy of free maternity services in all public facilities. Like many other health indicators, the burden of maternal morbidity and mortality is higher among this group, as the risk of developing pregnancy related complication and subsequent death during child birth (Van Eijk, 2006).

During delivery that's when most maternal deaths occur if proper care is not observed. Over 99 per cent of maternal deaths occur in developing countries, with nearly half of these taking place in Sub-Saharan Africa. United Nations Children's Fund (2008). Women living in Sub-Saharan Africa have a higher risk of dying while giving birth than women in any other region of the world. For women aged 15 to 19 in Africa, giving birth is the leading cause of death. For this reason, Delivery care needs to be given special attention. The problem is driven, at least in part, by lack of access to quality maternal health services, including ante-natal, delivery, and post-

natal services. 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 (The Guardian, 2013). According to Kenya National Commission on Human Rights, (2012) for every woman who dies in childbirth in Kenya, it is estimated that another 20-30 women suffer serious injury or disability due to complications during pregnancy or delivery. These high rates have persisted despite improvements in other health indicators over the past decades (Nairobi: Ministry of Medical Services and Ministry of Public Health & Sanitation, 2012). Access to skilled delivery is a particular challenge. Overall, only 44% of births in Kenya are delivered under the supervision of a skilled birth attendant, well below the target of 90% of deliveries by 2015. Traditional birth attendants continue to assist with 28% of births, relatives and friends with 21%, and in 7% of births, mothers receive no assistance at all (Calverton, 2010). Success in reducing maternal mortality is dependent on and can accelerate progress on wider issues such as nutrition, education, and sexual and reproductive rights, including access to comprehensive voluntary family planning (Graça Machel, 2012).

Emergency medical services in Africa has been a challenge thus leading to the high child mortality rates postnatal care hasn't been given the seriousness it deserves yet globally, up to 20 million girls and women a year suffer from maternal morbidities – surviving childbirth, but enduring chronic ill-health after birth, Women Deliver (2010). Given the perspective of poverty and lack of quality maternal healthcare services in Kenya, implementation of free maternal healthcare services depends on improved hospital infrastructure, increased resources outlay, staffing and improved remuneration packages for medical staffs.

1.3 Purpose of the Study

The purpose of the study was to examine how free maternity healthcare programme influences maternal mortality rate in Nairobi County, Kenya; a case of Kenyatta National Hospital.

1.4 Objectives of the Study

This research was guided by the following objectives:-

1. To determine how free antenatal care influences maternal mortality rate in Nairobi County.
2. To establish how free delivery care influences maternal mortality rate in Nairobi County.
3. To assess how free Emergency medical services influences maternal mortality rate in Nairobi County.
4. To identify how free postnatal care influences maternal mortality rate in Nairobi County.

1.5 Research Questions

The study sort to answer the following research questions;

1. How does free antenatal care influence maternal mortality rate in Nairobi County?
2. How does free delivery care influence maternal mortality rate in Nairobi County?
3. How does free Emergency medical services influence maternal mortality rate in Nairobi County?
4. How does free postnatal care influence maternal mortality rate in Nairobi County?

1.6 Significance of the Study

This study may enable the Government of Kenya to assess whether the programme is worthwhile to its citizens. In July 2013, it committed Sh3.8 billion to fund the free maternal health care program, with an additional Sh700 million for free access to health centers and dispensaries, Sh3.1 billion for recruitment of 30 community nurses per constituency, Sh522 million for recruitment of 10 community health workers per constituency, and Sh1.2 billion for provision of housing units to health care workers, within its overall allotment of Sh10.6 billion for health care in the 2013/14 national budget. Sh60 billion has also been allotted to county governments to be used on health, leading to a total of Sh95 billion for health overall (Communication Secretary and State House Spokesperson, 2013).

The results of this study would also be valuable to researchers and scholars, as it would form a basis for further research. The students may use this study to form basis of discussion of maternal healthcare services in developing countries. A lot of research on maternal healthcare has been undertaken in the past and this study may be an additional resource to update the studies done by previous scholars.

The study may improve donor's understanding on the benefits of the funds they give. Therefore, foreign and local investors would be able to inject more help to the sector through the ministry of health. The study would also bring into light the various factors that the investors and the government need to focus on when targeting provision of free maternal healthcare services.

The likely outcome of this study is that lives of mothers in Nairobi County have improved tremendously due to free maternal healthcare. This is expected as the free services offered by the government would enable more women to access hospitals for delivery thus ensuring successful deliveries and healthy babies.

1.7 Basic Assumption of the Study

The study assumed that all respondents (selected nurses, paramedics and doctors) would cooperate in filling the questionnaires. It also assumes that the informants shall provide honest answers to the provided questions. The study assumed that the Kenyatta National Hospital authority shall give information contained in their records and grant the researcher access to collect data.

1.8 Limitation of the Study

The main challenge was respondents' reluctance to provide information due to fear that that information provided may be used against them. This was mitigated by ensuring the informants are assured of remaining anonymous during reporting.

The study was limited to time and financial cost required to carry out comprehensive study on free maternal healthcare services in Nairobi county. This was mitigated by centrally focusing on Kenyatta National Hospital as it is capable of providing all data needed for this study.

1.9 Delimitation of the Study

Maternal healthcare involves a range of services categorized as prenatal, postnatal, delivery and well-baby care .This study was delimited to Kenyatta National Hospital as it is one of the largest public hospitals in Nairobi County with the most maternity patients. It is also a major center of research for government programs.

1.10 Definition of Significant Terms used in the study

Free maternal health care Programme: A program focusing on non-payment for services offered to pregnant women i.e. antenatal, delivery and post-natal services.

Maternal mortality rate: The number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination.

Free Antenatal Care: A project focusing on non-payment for preventive healthcare with the goal of providing regular check-ups that allow doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy while promoting healthy lifestyles that benefit both mother and child.

Free Delivery Care: A project focusing on non-payment for professional care given to mothers during child birth whether via virginal delivery or Caesarian Section.

Free Emergency medical services: Emergency service dedicated to providing out-of-hospital acute medical care, transport to definitive care, and other medical transport to patients with illnesses and injuries which prevent the patient from transporting themselves

Free Postnatal care: A project focusing on non-payment for provision of a supportive environment in which a woman, her baby and the wider family can begin their new life

together. It is not the management of a condition or an acute situation.

1.11 Organization of the Study

The research study has been organized and arranged in the following main sections. Chapter one provides back ground of the study , statement of the problem , purpose of the study research objectives , research question , research hypothesis , significance of the study , basic assumptions, limitation of the study , delimitation of the study , definition of significant terms and organization of the study.

Chapter two review literature looking for factors influencing the implementation of free maternal healthcare services in public hospitals in Kenya. It also incorporate the theme of first objective, second objective, third objective fourth objective, theoretical frame work, conceptual frame work, relationship between variable, gaps in literature review and summary of literature review.

Chapter three which covers and looks at the method used , research design , target population ,sample size and sampling technique, data collection instruments , pilot testing of the instrument, validity of instrument , reliability of instrument, data collection procedure, data analysis techniques , ethical consideration and operational definition of the variables.

Chapter four which covers and deals with the findings from the study , preprocessing, questionnaire return rate, characteristics of respondents and data analysis.

Chapter five presents and provides summary of findings, discussion of the findings, conclusion of the study, recommendations of the study and suggested area for further research.

CHAPTER TWO LITRATURE REVIEW

2.1 Introduction

The reflection and collection of the literature review to this chapter attempts to present a review of various previous studies that have been undertaken in relation to free maternal healthcare services in public hospitals. Literature review will focus on free maternal healthcare services in public hospitals on live of mothers. It's a systematic identification, location scrutiny of relevant published works to gain information about research topic (Burns and Groove, 2013).

Reducing maternal mortality has seen the government and the international agencies promote maternal healthcare services. Mothers benefit from free antenatal services as they are able to freely access reproductive health education, vaccinations, pregnancy supplements, physical exam and laboratory services at no cost from public hospitals (Barnet and Lesser, 2003). Free Delivery care influences lives of mothers as it ensures all have access to theatre services, midwife services, and medication to enable them deliver successfully. Ortiz Captain Jose M (2008), Free Emergency medical services influence maternal mortality rate as the wellbeing of the newborn and the mother is ensured. Free postnatal care enables mothers access free counselling and a range of options for family planning, free gynecology service and free medication (Ong'ech 2009). This ensures infant mortality rate is reduced significantly.

2.2 The Concept of Free Maternal Healthcare Services on maternal mortality rate

The literature suggests that free maternal healthcare services in Nairobi County may influence maternal mortality rate by a host of factors such as providing free antenatal care, free delivery care, free newborn care and free postnatal care (Ong'ech 2009). The government's commitment to provide free maternal health services is expected to encourage more women to deliver at health facilities and to result in fewer maternal deaths. With the new policy, health facilities will be reimbursed by the government for Ministry of Health implements free maternity services nationwide every delivery that they handle, at the rate of Sh.2, 500 per birth at health centers and dispensaries, and Sh.5000 for every birth at public hospitals. This covers both normal

deliveries, deliveries through caesarean, and complicated deliveries (Griffiths and Stephenson 2011). These funds are paid directly to the facilities. In addition, no fees will be charged for antenatal and post-natal care up to six weeks after delivery, or for referrals made in the case of complications related to pregnancies. All fees charged for all types of health care services at dispensaries and health centers have also been abolished.

Also Kenya signed (but did not ratify) the Maputo Protocol on the Rights of Women of 2003, which recognizes reproductive rights and commits state parties to establishing and strengthening existing pre-natal, delivery, and post-natal health and nutritional services for women. Successful programme implemented require prudent human capacity management, human resource must be empowered to steer the initiative to succeed. Dugmour and Lucy (2005), indicate that some of the greatest risk to effective capacity management rise from lack of understanding of the importance of performing the capacity management process on all resources that need to be managed for service delivery.

Griffiths and Stephenson (2011), Free antenatal care includes free vaccinations, free supplements, free laboratory services, free ultrasound, and free gynecological sessions. Free delivery care includes free midwife services, free gynecological services, free theatre services and free medication, Thaddeus and Maine (2014). Free Emergency medical services consists of services free ambulance service and free paramedic services offered to the mother in case of any emergency during pregnancy and 42 days after delivery. Postnatal care includes free counselling and a range of options for family planning, free gynecology service for the mother, free medication. If pregnant women have the knowledge on kinds of services offered by public hospital the value of implementing these services will be realized while if people do not utilize the service then it doesn't make any economic sense.

2.3 Free Antenatal Care and Maternal Mortality Rate

According to the 2008-09 KDHS, less than half (47%) of pregnant women make four or more ANC visits and only 15% access antenatal care while in the first trimester of their pregnancy. The report adds that about half (52%) receive care before the 6th month of pregnancy. Barnet and Lesser (2003), the median number of months of pregnancy at first visit is above the first trimester at 5.6 months. Reproductive health

education is information about their reproductive health during their pregnancy period so that they can make informed decisions when to seek these services. Health education programmes during antenatal clinic should inform the women about reproductive health, knowledge related to sexuality, nutrition, family planning, malaria, HIV/AIDS etc.

Tetanus vaccinations play a big role to maternal and neonatal tetanus as it has no cure. (WHO, 2014) Claiming thousands of lives every year, maternal and neonatal tetanus (MNT) is a devastating disease caused by toxins released from *Clostridium tetani* bacteria. With no cure, MNT is responsible for an average 110,000 deaths a year in the African Region. Once contracted, the newborn usually dies within seven days. However, MNT is entirely preventable through appropriate immunization of women of child bearing age, and through simple and basic precautionary measures in child delivery. Transmission occurs when there is contact between the bacteria and broken skin or dead tissues, such as the wound resulting when an infant's umbilical cord is cut. Burns and Groove (2013), Poor hygienic conditions, lack of access to sterilized childbirth delivery tools, unhygienic practices, and limited access to health services amplify the risk for MNT during childbirth. It is estimated that fewer than 5% of neonatal tetanus cases are actually reported, even from well-developed surveillance systems. It is for this reason that the deaths are greater than the numbers indicate. Of the estimated 28 countries with highest numbers of MNT cases, 16 of them are in the African Region - accounting for 90% global neonatal tetanus cases. These are Angola, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, DR Congo, Ethiopia, Ghana, Guinea Bissau, Liberia, Mali, Mauritania, Mozambique, Niger, Nigeria and Senegal (WHO, 2014).

Free pregnancy supplements given in public hospitals include folic acid and iron. The World Health Organization (WHO) recommends daily iron and folic acid supplementation for pregnant women. The recommended daily dose is 60mg of iron, and 0.4 mg of folic acid. Doing so reduces the risk of having a pregnancy affected with spina bifida or other neural tube defects, reduces the risk of having babies with low birth weight and iron defects. The supplements also reduce the risk of maternal anemia (WHO, 2014).

Ong'ech (2009), physical Exam is well done in most hospitals that offer prenatal care in Kenya. The following are a must: weight, height and blood pressure. Vagina and

cervix maybe examined for any abnormalities. A Pap smear test can be requested to check for cervical cancer. The change in the size of the cervix and uterus helps confirm the stage of your pregnancy.

Pregnancy related laboratory services are free in public hospitals. Many Kenyan hospitals are well equipped to offer the best prenatal care in Kenya. The required tests for a healthy pregnancy are: Blood-blood type and the Rhesus factor. HIV test in Kenya for pregnant mothers is mandatory. This will help you especially if you are positive to start Prevention of Mother to Child Transmission program. You should get tested for STI's also. Urine tested is also carried out to establish if the kidney or bladder infections as these are not good for fetal development (S Witter, 2009).

2.4 Free Delivery Care and Maternal Mortality Rate

Sachs G (2015), service provision or delivery is an immediate output of the input into the health system, such as health workforce, supplies and finances. Increased input should lead to improved services.

According to Nakamara (2010), Safe Motherhood Initiative is a worldwide effort that aims to reduce the number of deaths and illnesses associated with pregnancy and childbirth. Nakamara noted that the following ways are paramount to achieving safe motherhood.

Use of free Skilled birth attendance at all births, access to quality emergency obstetrical care and access to quality reproductive health care, including family planning and safe post abortion care. In addition, Kenya has signed on to several regional mandates regarding reproductive health. Kenya participated in and committed to the 2001 Abuja Declaration, pledging to commit at least 15% of the national budget to health care. Free midwife services are of importance to reduce home deliveries. According to Burns (2000), employing qualified person to monitor labor in the health facility has a great impact on reducing maternal motility. In Kenya health workers are unevenly distributed across the country with particular gaps in the North Eastern and Northern Rift provinces. Although it's known that attending to a pregnant mother by a trained person in midwifery skill significantly decreases maternal morbidity and mortality. Nairobi County is heterogeneous cosmopolitan society which comprises of individuals from different background, culture and traditions. Pregnant women seeking to deliver in hospitals have long suffered in the

hospitals when they are unable to pay mandatory fees and many have been detained for a long period by the hospital administrators due to failure by their relatives to pay their bills or worse still majority of these women live in the urban informal settlement. After the introduction of free maternal healthcare services hospitals have reported increased numbers in maternity wards. Nurses have also reported being overburdened due to the new policy, with nearly all working overtime and as few as three (3) nurses aiding about 20 mothers at a time (On'gech *et al*, 2013).

2.5 Free Emergency Medical Services and Maternal Mortality Rate

Although natural, labour is a complex physiological process often lasting many hours before childbirth. Decisions made during labour can directly impact birth outcomes. For many women, clinical onset of early labour can be ambiguous, with women confusing irregular cramps of spurious labour as a sign of established labour, causing apprehension about the best time to seek health care (Cheyne H, Terry R, Niven C, Dowding D, Hundley V, McNamee P, 2007).

For a small proportion of women, labour progresses rapidly increasing the possibility of precipitous or unexpected births in the community with higher associated risks (McLelland GE, Morgans AE, McKenna LG. Conversely, 2014) premature hospital admission for childbirth has been linked to increased risks of medical intervention due to predetermined progress milestones directed by hospital protocols (Holmes P, Oppenheimer LW, Wu Wen S., 2001). Nolan M, Smith J. (2014), as a result, labouring women are encouraged to telephone maternity wards prior to hospital attendance to remain at home until labour is established and avoid this 'cascade of interventions' (Cheyne H *et al*, 2007). Although midwives find telephone assessment in early labour beneficial, women have expressed dissatisfaction with telephone triaging (McLelland GE, 2014). This leaves women wishing to go to hospital with the option of staying at home, making their own way into hospital or calling emergency services for assessment and transport.

Paramedics attend, assist and transport women who have unexpected out of hospital births (Spiby H, Green JM, Hucknal C, Richardson Foster H, Andrews A, 2013) however, research investigating the women in labour managed by paramedics is scarce. In one ambulance service in the east of England, Foster and Maillard, 2012 noted that only one fifth of women transported for imminent birth actually birthed

before arrival to hospital, the remaining women were therefore in varying phases of first and second stage of labour. Identifying the changes from the irregular contractions of early labour to commencement of second stage requires specialised clinical skills (McLelland GE, 2014). The challenge of adequate assessment of progress is exacerbated for women who access services not specialising in maternity care. Similar to in-hospital care of women in labour, pre-hospital diagnosis and assessment of progress relies on highly skilled clinical judgement recognising specific cues. Although they are skilled emergency care practitioners, paramedics have limited education underpinning their knowledge of maternity care, with new graduates reporting lack of confidence in managing labouring women (Cheyne H *et al*, 2007).

2.6 Free Postnatal Care and Maternal Mortality Rate

Charlotte W, Pat D, Lalla T, Pyande M *et al* (2010) indicate that every year in Africa, at least 125,000 women and 870,000 newborns die in the first week after birth, yet this is when coverage and programmes are at their Essential routine PNC for all mothers Assess and check for bleeding, check temperature Support breastfeeding, checking the breasts to prevent mastitis Manage anemia, promote nutrition and insecticide treated bed nets, give vitamin A supplementation Complete tetanus toxoid immunization, if required Provide counseling and a range of options for family planning Refer for complications such as bleeding, infections, or postnatal depression Counsel on danger signs and home care Essential routine PNC

According to Nakamara (2010), all newborns should Assess for danger signs, measure and record weight, and check temperature and feeding Support optimal feeding practices, particularly exclusive breastfeeding Promote hygiene and good skin, eye, and cord care If prophylactic eye care is local policy and has not been given, it is still effective until 12 hours after birth Promote clean, dry cord care Identify superficial skin infections, such as pus draining from umbilicus, redness extending from umbilicus to skin, more than 10 skin pustules, and swelling, redness, and hardness of skin, and treat or refer if the baby also has danger signs Ensure warmth by delaying the baby's first bath to after the first 24 hours, practicing skin-to-skin care, and putting a hat on the baby Encourage and facilitate birth registration Refer for routine immunizations Counsel on danger signs and home care lowest

along the continuum of care. The first day is the time of highest risk for both mother and baby. The fact that 18 million women in Africa currently do not give birth in a health facility poses challenges for planning and implementing postnatal care (PNC) for women and their newborns (Charlotte *et al*, 2010).

Regardless of place of birth, mothers and newborns spend most of the postnatal period (the first six weeks after birth) at home. Postnatal care (PNC) programmes are among the weakest of all reproductive and child health programmes in the region. Free postnatal care in public hospitals focuses on free counselling and a range of options for family planning, free gynecology service for the mother and free medication (Ong'ech, 2009).

WHO (2014), Half of all postnatal maternal deaths occur during the first week after the baby is born, and the majority of these occur during the first 24 hours after childbirth.¹ The leading cause of maternal mortality in Africa – accounting for 34 percent of deaths – is hemorrhage, the majority of which occurs postnatal. Sepsis and infection claim another 10 percent of maternal deaths, virtually all during the postnatal period.² HIV-positive mothers are at greater risk of postnatal maternal death than HIV-negative women.³ Access to family planning in the early postnatal period is also important, and lack of effective PNC contributes to frequent, poorly spaced pregnancies. This is a stressful time for new mothers, so emotional and psychosocial support should be available to reduce the risk of depression.

At least one in four child deaths occur during the first month of life. These deaths often take place before child health services begin to provide care, usually at six weeks for the first immunization visit. Low coverage of care in the postnatal period negatively influences other maternal, newborn, and child health (MNCH) programmes along the continuum of care. For example, the lack of support for healthy home behaviors, such as breastfeeding, can have ongoing effects for the child in terms of under nutrition. Additionally, newborns and mothers are frequently lost to follow up during the postnatal period for prevention of mother-to-child transmission (PMTCT) of HIV (WHO, 2014).

It has been estimated that if routine PNC and curative care in the postnatal period reached 90 percent of babies and their mothers, 10 to 27 percent of newborn deaths could be averted. In other words, high PNC coverage could save up to 310,000

newborn lives a year in Africa.⁹ The impact on maternal survival and well-being would also be significant. There is now more consensus on the content of PNC.

2.7 Theoretical Framework

This study links with Anderson's health behavior model to analyse the implementation of free maternal healthcare services in public hospitals in Kenya. Anderson's (1968) health behavior model postulates that a certain characteristics contribute to, or determine implementation of healthcare services. He divides these characteristics into three categories i.e. enabling, need base and predisposing characteristics. Resources are defined as enabling as they make health services available to the targeted population. In order for the government to implement free maternal healthcare services there is need for political goodwill to enable government allocate more resources to health ministry. The government of Kenya and international bodies have realized with great concern the number of women who die from birth related causes , over 500,000 women die each year which translates to one woman per minute is dying somewhere from this preventable cause. Millennium development goal five(MDG 5) is about reducing maternal mortality , thus implementation of free maternal health will therefore help in reducing these deaths as more women will give birth in hospital under the supervision of skilled birth attendants (Anderson, 2005).

2.8 Conceptual Framework

The focus of the study was to define the relationship between the dependent and independent variable. In this study the independent variable being free maternity healthcare program whose indicators are free antenatal care, free delivery care, free emergency services, free postnatal care.

The dependent variables is maternal mortality rate whose indicators are number of successful deliveries and number of healthy babies delivered.

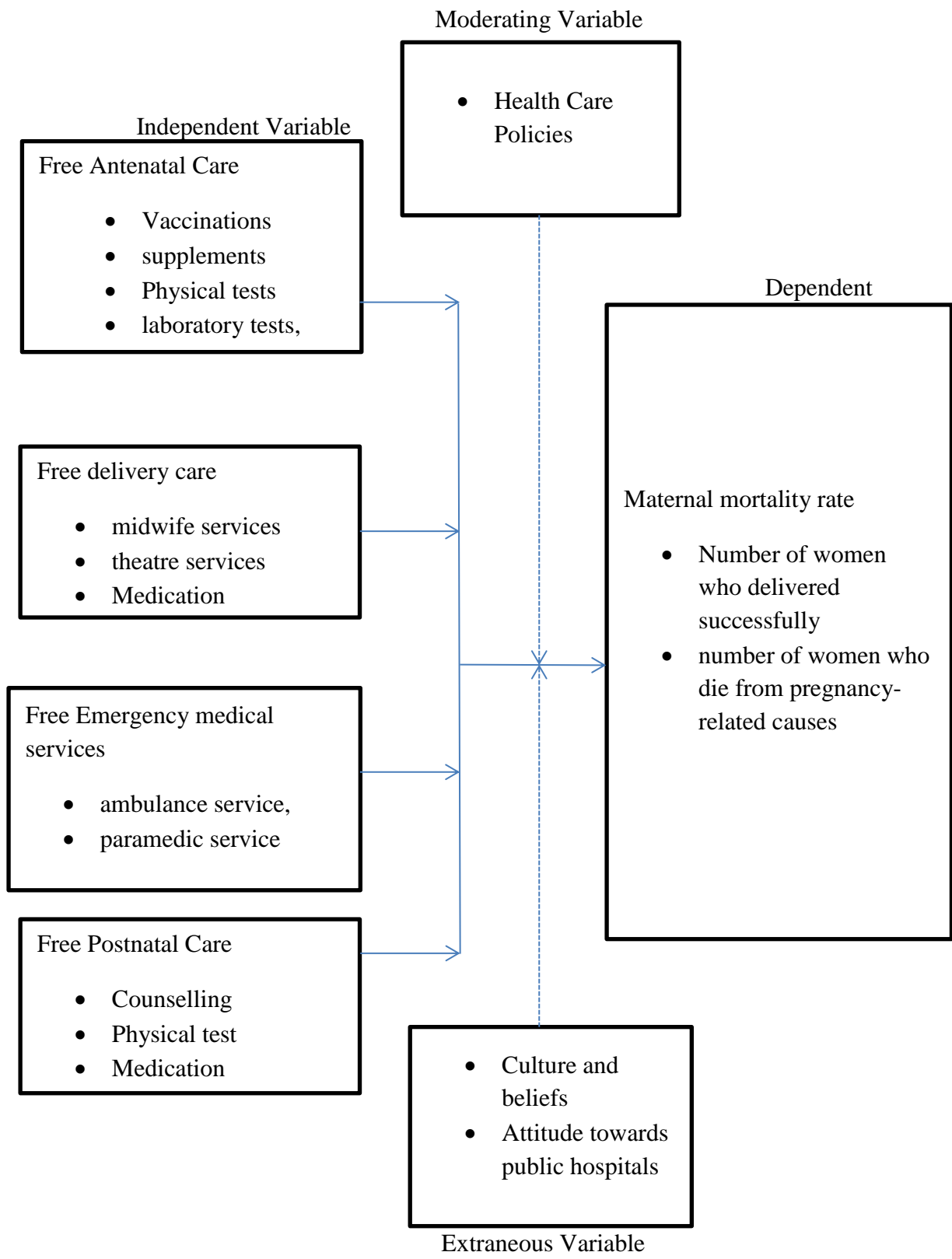


Figure 1 Conceptual framework

In this study independent variables are the antecedent conditions that are presumed to affect dependent variable .Independent variable are therefore inputs that need to be in place in order that free maternal services influences maternal mortality rate in Kenya with a focus to Nairobi county and they include free antenatal care, free delivery care, free newborn care and free postnatal care in relation to free maternal healthcare. Dependent variable (outcome) in this study is maternal mortality rate in Nairobi County. Moderating variables represent factors or process that may alter the impact of independent variables on dependent variable and include accessibility to hospital and government policies while extraneous variable are factors which cannot be controlled and they include perceived attitude towards services in public hospitals, culture and beliefs.

Free antenatal Care relates to lives of mothers in that by the government providing free vaccinations, supplements, laboratory services and physical tests to pregnant mothers then the mothers will be healthy throughout the pregnancy and would ensure healthy fetus too. Free Delivery care influences lives of mothers as it ensures all have access to theatre services, midwife services, and medication to enable them deliver successfully. Free Emergency medical services services influence maternal mortality rate as women in labour are a vulnerable population relying upon decisions made by health professionals including paramedics.. Free postnatal care enables mothers access free counselling and a range of options for family planning, free gynecology service and free medication and ensures infant mortality rate is reduced significantly

2.9 Knowledge Gap

This chapter reviewed the literature in relation free maternal health Care in public hospitals on maternal mortality rate in Nairobi County. This review of literature brings us to the methodology of the study.

Table 2.1 Matrix Table : Summary of Empirical Literature

Variable	Indicator	Author (year)	Title of the Study	Findings	Knowledge gap
Free antenatal care	-Vaccination -Supplement -Physical test -Laboratory test	Gayle H. Martin and Obert Imphidzai (2013)	Education and Health Services in Kenya: Data for Results and Accountability, Service Delivery Indicator	increased utilization of ANC service in the year of initiating FMS in Kenya especially among ANC re-visits	Utilization of Other services related to ANC including; ANC clients HIV testing and ANC partner HIV testing
		Sophie Witter (2009)	Providing Free Maternal Health Care: Ten Lessons from an Evaluation of the National Delivery Exemption Policy in Ghana	The experience of Ghana suggests that delivery exemptions can be effective and cost-effective, and that despite being universal in application, they can benefit the poor.	‘negative’ lessons are also drawn from the Ghana case study, particularly on the need for adequate funding, and for strong institutional ownership.
Free delivery care	-Midwife services -Theatre services -Medication	S´anchez Fuentes, M.L., J. Paine and B. Elliott-Buettner	The Decriminalization of Abortion in Mexico City: How did Abortion Rights	Increase in the normal deliveries and in the caesarean section deliveries with live births increasing In the year FMS was introduced	Education on the grounds when abortion is legal, abortion-care related Standards and Guidelines

		(2008)	become a Political Priority	compared to the previous year.	
		Ministry of Health (2015)	Status Of Implementation Of Free Maternity Services (FMS) Program In The Devolved Health System In Kenya	availability of delivery guidelines and job aids for reference within the maternity units	state of hospital infrastructure
Free Emergency medical services	-ambulance service, -paramedic service	McLellan and Morgan AE, McKenna LG. (2014)	Involvement of emergency medical services at unplanned births before arrival to hospital: a structured review. Emerg Med	Over a 12-month period two thirds of women who called paramedics were at full-term gestation, and 40% of pre-term pregnancies were less than 32 weeks gestation.	Importance of paramedics having a range of clinical assessment skills comprising essential knowledge about antenatal and intrapartum care
		Cheyne H, Terry R, Niven C, Dowding D,	‘Should I come in now?’: a study of women’s early labour experiences.	Women in labour are a vulnerable population relying upon decisions made by health professionals including	Evaluation of the outcomes of the women following admission to hospital.

		Hundley V, McNamee P. (2007)	Br J Midwifery.	paramedics.	
Free postnatal care	- Counselling and a range of options for family planning -Physical test -Medication	Charlton D, Lalla T and Pyande M (2005)	post natal care. Opportunities for Africa's Newborns.	Every year in Africa, at least 125,000 women's and 870,000 newborns die in the first week after birth, yet this is when coverage and programs are at their lowest along the continuum of care	Education on importance of postnatal care.
		Sulochana D, Glyn N, Padam P (2007)	Utilization of postnatal care among rural women in Nepal.	Important in prevention of impairment and disabilities and also for reduction of maternal mortality.	Follow up expenses in case a problem is diagnosed during PNC

2.10 Summary of the Chapter

Literature review describes, empirical review, the theoretical framework and conceptual framework. This was critical since the study is based on cross-sectional study; the combination of descriptive and quantitative information, and evaluation theories. The theory upon which the study is linked is the Anderson's health behavior Theory.

In this study, the researcher examined the literary works and empirical literature of various scholars on each variable. The works of scholars who published on each of the study parameters are discussed. Witter S *et al* (2009) notes that the experience of Ghana suggests that antenatal fee exemptions can be effective and cost-effective for the government, and that despite being universal in application, they can benefit the poor

According to Dr John Ong'ech *et al* (2014), Head of Reproductive Health at Kenyatta National Hospital (KNH) the impact of the Free antenatal care on maternal mortality rates is huge since the facility now handles between 30 to 40 deliveries per day from their previous maximum of 25 deliveries. He notes that the number of complicated caesarean section cases has doubled up. The number of women seeking maternal services is also going up.

Foster and Maillard (2012) argue that only one fifth of women transported for imminent birth actually birthed before arrival to hospital, the remaining women were therefore in varying phases of first and second stage of labour. The study thus views free emergency services as being very essential to the few who would be in need of it thus significantly influencing maternal mortality rate.

A review of postnatal care and maternal mortality rate highlights that PNC is a stage that most people ignore yet it's a critical stage where most women if not observed lose their lives. Charlotte W *et al* (2010), Essential routine PNC for all mothers
Assess and check for bleeding, check temperature Support breastfeeding, checking the breasts to prevent mastitis Manage anemia, promote nutrition and insecticide treated bed nets, give vitamin A supplementation Complete tetanus toxoid immunization, if required Provide counseling and a range of options for family planning Refer for complications such as bleeding, infections, or postnatal depression Counsel on danger signs and home care Essential routine

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains description of research design, target population, sample size and sampling procedure, research instruments that includes, pilot testing, validity and reliability, data collection procedures, data analysis techniques, ethical issues and operational definition of variables.

3.2 Research Design

A cross-sectional descriptive study was used to explore influence of free maternal healthcare on the lives of mothers in Nairobi County, Kenya. According to Mugenda & Mugenda (2003), a cross-sectional descriptive study is explained as a study that entails collecting and comparing data from the phenomena at the same time of study. In addition to this, cross sectional studies are appropriate where the overall objective is to establish whether significant associations among variables exist at some point in time.

Cross sectional surveys employ an observational study that involves analysis qualitative and quantitative data collected from a population which is known as triangulation. Triangulation (Bryman, 2007) is used to refer to all instances in which two or more research methods are employed. Thus, it might be used to refer to multi-method research in which a quantitative and a qualitative research method are combined to provide a more complete set of findings. Cross sectional surveys are important to check validity of findings by cross-checking them with another method (Bryman, 2007).

Cross sectional survey design was selected for this study due to its ability to ensure minimization of bias and maximization of the reliability of evidence collected. This study involved collection of quantitative data for objective testing and modeling while qualitative data was useful in explaining themes of descriptive information.

3.3 Target Population

The study population targeted women of reproductive age seeking to undertake maternity services in Kenyatta National Hospital in Nairobi county and staff at KNH maternity wing. Target population consisted of 30 nurses, 20 paramedics, 10 doctors at KNH maternity wing and 342 mothers. The study population is taken from recorded figures obtained from Kenyatta National Hospital Management System; i.e. the average number of women who attend maternity clinic daily at KNH and the number of staff in the maternity department as at July 2015. Therefore the total target population is 402 which includes nurses, paramedics, doctors and mothers.

3.4 Sample Size and Sampling Procedure

The sample size and sampling procedures for this study were determined by the following statistical procedures.

3.4.1 Sample Size

The sample size was determined using Krejcie and Morgan Table (1970). The total sample size for this study was 228 respondents which consisted of 181 mothers, 28 nurses, 19 paramedics and 10 doctors drawn from the target population based on the Krejcie and Morgan Table (1970).

3.4.2 Sampling Procedure

A cross sectional study was conducted where a total of 28 nurses, 19 paramedics, 10 doctors and 181 mothers were selected from the Kenyatta National Hospital in Nairobi county. To select the mothers the study used stratified random sampling, this procedure helped minimize bias in the study and increase the level of the finding. Stratified sampling technique divides the population in different strata (subgroup) i.e. women seeking antenatal care and women seeking postnatal care. Members within strata will be picked randomly. To select nurses, paramedics and doctors the study used simple random sampling. These sampling methodologies were deemed appropriate to represent the target population and to provide the same results at the lowest possible cost and time.

3.5 Data Collection Instruments

The researcher used self-administered questionnaire for data collection for the community provided as Appendix II. The questionnaires were administered to nurses, paramedics and doctors at KNH Maternity wing. The questions are systematic, pre-determined and presented with exactly the same wording and in the same order to all respondents. The questionnaire was designed to have only close ended question. The closed ended question provided more structured response to facilitate tangible recommendation. It was also used to test rating of various attributes. The questionnaire was designed to have five sections. Section A: the demographic section, B: Antenatal Care, Section C: Delivery Care Section D: Emergency medical services Section and Section E: Postnatal care. The researcher with the help of the assistants distributed the questionnaires to the staff and later collected them.

Focus group discussion was used to obtain data from the women attending maternity clinic. The mothers were grouped in 10 groups where they were given points to discuss on as in Appendix III. The research assistants led the focus group discussions and noted the points discussed.

The study heavily relies on secondary data. Document reviewed involved hospital data and reviewing them as well as the number of deaths that occur annually due to pregnancy related causes comparing before and after inception of the programme. Other documentation that were reviewed involved related literature, books, research work, and internet among other sources. Secondary data is unobtrusive and allows for larger scale studies on a small budget.

3.5.1. Pilot Testing of the Instrument

In order to minimize errors in the questionnaire, a pilot testing was done by collecting data from Mbagathi Hospital one week prior to the main study. Mbagathi Hospital is a small scale public hospital in Nairobi County with similar characteristics to Kenyatta National Hospital. The findings are expected to be similar to what will be obtained at Kenyatta National Hospital. The pilot test involved 1% of the sample and found out that the instruments were reliable and valid for collecting the data. For cases with unclear questions they were corrected.

Validity and reliability was constructed after pilot-testing of the research instrument. The test also determined the relevance and appropriateness of the test questions. Pilot testing also helped to check the clarity and suitability of the wording. Corrections and modifications were therefore undertaken to correct any abnormalities noted on the instrument before it was administered at KNH.

3.5.2. Validity of the Instruments

Validity of the questionnaire was ensured by assessing content of the questionnaire to determine whether it addressed all relevant aspects of variable and whether the results correlated sufficiently. This dealt with how the questions in the questionnaire answer research questions or achieve the objectives. To establish validity of the research instrument the study sort the opinion of experts in the field of the study. The results from different questionnaires were compared to help assess their accuracy. The most important criterion of research is validity.

Validity was also ensured by checking the construct of the questionnaire. Construct validity is a judgment based on the accumulation of evidence from numerous studies using a specific measuring instrument. This refers to how the questions were phrased in terms of clarity and vagueness to ensure no ambiguity. In other words, validity was concerned with whether the finding is really about what appears to be reality on the ground. Validity ensures the integrity of the conclusions that are generated from a piece of research. It is also concerned with whether or not the items actually elicit the intended information .Validity suggests fruitfulness and refers to the match between a construct, or the way a study conceptualizes the idea in a conceptual definition and the data generated .It refers to how well an idea about reality fits in with actual reality .

The study used various sources of evidence and when applied they confirmed the validity of data and relevant results as no single source has a complete advantage over others. Different sources are highly complementary.

3.5.3 Reliability of Instruments

The split-half method was used to measure reliability. It measures the extent to which all parts of the test contribute equally to what is being measured. This is done by comparing the results of one half of a test with the results from the other half.

Samples of 20 questionnaires were used to test validity of the tool. They were randomly divided into two (odd and even numbers) sets. According to Gomm (2008), reliability determined the consistency of a research instrument in its performance.

3.6 Data Collection Procedure

The study used primary and secondary data that was well-versed by the objectives of this study. Data collection was done after defending the proposal and obtaining a research permit from NACOSTI. Also a Consent was sought from the Kenyatta National Hospital using a consent letter addressed to the hospital staff. This consent letter was attached to the questionnaire. The researcher undertook data collection by giving out questionnaire for the selected respondents. 57 questionnaires were given to three research assistants for data collection. The research assistants also coordinated the focus group discussions. The researcher sorted data from hospital staff who availed current hospital records. The entire data collection exercise took 2 weeks. After the data was collected, checking for errors and inconsistencies was undertaken.

3.7 Data Analysis Techniques

Data from the questionnaire was keyed in a database programmed by SPSS and was analyzed. Key Informant focus group discussion (notes) were typed by Ms. Word capturing main respondents of participants and sorted based on the themes developed from the study objectives. Data from key informant interviews were qualitatively analyzed. All sets of data were analyzed in form of tables, charts, percentages, mean, mode etc.

Qualitative and quantitative data collection methods were used. Inferential and descriptive statistics were analyzed using SPSS while chi square test and regression were used to derive relationships that may exist between the independent and dependent variables. The mean, standard deviation, frequencies and percentages

from the respondent's data were used to establish the relative importance and weight of each variable as well as the deviation of the variables from their means. This involved frequencies and cross tabulations among the selected variables.

3.8 Ethical Considerations

The researcher obtained a research permit from the National Commission of Science, Technology and Innovation at the Ministry of Education, Science and Technology. She prepared a letter of transmittal of data collection instruments to inform respondents that the research shall purely be for academic purposes only. All requirements and procedures were also explained to respondents. They were assured of anonymity that no names would be written on the questionnaires. They were assured that their names would not appear on any write-ups or reports. The proposal of this study was presented to the KNH Maternity Department for approval. Finally the findings from this study would be communicated to concerned parties including interested stakeholders upon request.

3.9 Operationalization of Variable

All the variables were measured at ordinal and nominal scale.

Table 3.2 Operationalization and definition of variables

Objective	Variables	Indicators	Measure	Scale of measurement	Research Approach	Tools of analysis
To determine how free antenatal care influences maternal mortality rate in Nairobi County.	free antenatal care	Vaccinations, Supplements, Physical tests, laboratory tests	Quantity of vaccines, Quality of test	Ordinal	Quantitative research	Correlation Regression
To establish how free delivery	midwife services,		Quality of services,	Ordinal	Quantitative	Correlation

free delivery care influences maternal mortality rate in Nairobi County.	care	theatre services, Medication	Quantity of medication		ive research	Regression
To assess how free Emergency medical services influences maternal mortality rate in Nairobi County.	free Emergency medical services	Ambulance services, paramedic services	Quality of services,	Nominal	Qualitative research	Descriptive
To identify how free postnatal care influences maternal mortality rate in Nairobi County.	free postnatal care	Vaccines, Physical test, Medication	Range of options for family planning, Quality of test, Quantity of medication	Ordinal	Quantitative research	Correlation Regression
Free maternity healthcare programme on maternal mortality rate in Nairobi county	lives of mothers in Nairobi County	successful deliveries, healthy babies delivered	Number of mothers who gave birth successfully deliveries, Number of mothers who died due to pregnancy related factors.	Nominal	Qualitative research	Descriptive

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents data that was analyzed in order to give a clear picture of the findings and for purpose of comparison with the expected findings. The purpose of the study was to examine how free maternity healthcare programme influences maternal mortality rate in Nairobi County, Kenya; a case of Kenyatta National Hospital. The data was summarized in table form and bar graph to bring out the reality at the ground. The data was collected using questionnaire and focus group discussions. The data was analyzed and classified into meaningful categories. The findings have been arranged according to the objectives.

4.2 Response Rate

Out of 57 questionnaires distributed to KNH staff only 50 questionnaires were returned. This is 87.8% return rate. The reason for unreturned questionnaire was because some of the respondents were on leave and others were in the field and had not been back by the time of data analysis.

4.3 Demographic Information

The study sought to establish information of respondents including occupation, highest education level, work experience of the nurses, doctors and paramedics of Kenyatta National Hospital maternity wing .

4.3.1 Distribution of Respondents by Occupation

The study sought to find out the relationship between respondents occupation and their opinion on influence of free maternity healthcare programme on maternal mortality rate in Nairobi county, Kenya.

Table 4. 1 Distribution of Respondents by Occupation

Occupation	Respondents	% of Total
Nurses	25	50%
Doctors	9	18%
Paramedics	16	32%
Total	50	100%

Table 4.1 revealed that 50% of the respondents were nurses who most often interacted with the patients thus indicating that the research findings would be credible as their opinion is from firsthand experience. While 18% were doctors who mostly handled complications and surgeries this indicated the credibility of the findings on causes of maternal deaths. This was followed by 32% who were paramedics indicating that result on emergency cases would be credible. This study shows that nurses are the majority in taking care of pregnant patients.

4.3.2 Highest Education Level of the Respondents

The information on the respondent's level of education was sought to find if there was relationship between the highest levels of education of the staff and influence of free maternity healthcare programme on maternal mortality rate in Nairobi county, Kenya

Table 4.2 Respondent's level of education

Level of education	Respondents	% of Total
Non	0	0%
Primary	0	0%
Secondary	5	10%
College	30	60%
University	15	38%
Total	50	100%

Table 4.2 revealed that Non had attained below secondary education, 10% of the respondents had attained up to secondary education, 60% had attained up to college education, 30% had attained up to university education. This study shows that the information given by the respondent is likely to be credible as the respondents are all literate. This study shows that the staff attending to pregnant women are highly qualified for the task.

4.3.3 Years of Work Experience of Respondents

The information on the years of work experience of respondents was sought to find out if there was a relationship between the years of work experience of staff and influence of free maternal healthcare services on maternal motility rate in public hospitals. The findings were as follows:

Table 4.3 Respondent's Occupation

Occupation	Respondents	% of Total
Below 5years	5	10%
5 – 10years	17	34%
10 – 15years	22	44%
15 - 20years	4	8%
Above 20years	2	4%
Total	50	100%

Table 4.3 showed that most staff had worked in these fields for over 5 years thus were well placed to give reliable opinions regarding their views on maternal mortality rates in comparing before and after introduction of free maternal healthcare. It also represents that most of the staff have enough experience in their careers.

4.4 Free Antenatal care and Maternal mortality rate

Respondents were asked to rate the extent to which they agreed or disagreed with the various statements as related to the influence of level of Free antenatal care on maternal mortality rate. A five-point Likert scale was used.

Table 4. 2 Free Antenatal care and Maternal mortality rate

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
	%	%	%	%	%		
Free Tetanus vaccine ensure safe delivery	8%	52%	36%	4%	0	2.36	0.693
Free supplements ensure healthy mother during delivery	0	44%	30%	16%	10%	2.92	1.007
Free Laboratory testing ensure safe pregnancy	20%	58%	20%	2%	0	2.04	0.699
Free physical testing ensure safe pregnancy	12%	64%	16%	6%	2%	2.22	0.815

Likert scale; 1= Strongly Agree, 2=Agree, 3=Not sure, 4=Disagree, 5=Strongly Disagree

Source: Field Data, 2015

With regard to whether they feel Free Tetanus vaccine ensure safe delivery, there was a mean score of 2.36 on the Likert scale indicating that respondents were in agreement. This is supported by the findings which show that 52% of respondents

agree to the statement. This is also evident in the standard deviation of 0.693 that revealed strong consistency in the responses. With regard to whether respondents agree Free supplements ensure healthy mother during delivery, none strongly agreed while 44% agree, 30% of the respondents are uncertain 16% disagree and 10% strongly disagree. The mean having a value of 2.92 but there were strong inconsistencies in the responses as indicated by the standard deviation of 1.007 suggesting that the views of respondents varied thus. On the view of free laboratory testing ensure safe pregnancy , 20% respondents strongly agree while 58% agree, 20 are not certain and 2 disagree that makes the respondents in agreement. In addition to this, the mean being 2.04 and standard deviation 0.699 proves the agreement. On the other hand, 64% respondents agree and 12% respondents strongly agree free physical testing ensure safe pregnancy. The mean calculated being 2.22 and standard deviation 0.815 shows that the respondents are in agreement.

From the above statistical conclusions, it can be indicated that free antenatal care is viewed as significant way of reducing maternal mortality rates in Nairobi County. The maternity death database from KNH showed that MNT was responsible for an average 1,000 deaths yearly at the hospital.

This statement is supported by the focus group discussions held with the mothers at the maternity clinic at KNH who are first hand beneficiaries of this program. On the discussions they indicated that free antenatal care enables most of them visit the clinic during pregnancy and incase of any issues they are made aware of. Also they noted that free physical testing ensures all is well during pregnancy thus ensures safe pregnancy. The mothers argued that the tetanus vaccine given was very essential as it prevented infections after delivery. They were glad it was free since preciously most of them would not afford it. They noted that free laboratory testing has gone a long way to reduce maternal mortality rate as most of them would not be able to afford it thus not get the care needed.

4.5 Free Delivery care and maternal mortality rate

Respondents were asked to indicate their view on diverse factors on free delivery care in relation to how it influences maternal mortality rate.

Table 4. 5 Free Delivery care and maternal mortality rate

	Strongly Agree	Agree	Un-certain	Dis-agree	Strongly Disagree	Mean	Standard Deviation
	%	%	%	%	%		
Free midwife service leads to successful deliveries	56%	36%	4%	4%	0	1.56	0.760
Free theatre services has helped reduce the number of women who die from pregnancy-related causes	62%	28%	8%	2%	0%	1.50	0.735
Free medication ensures quick recovery of the mother after delivery	30%	38%	12%	16%	4%	2.26	1.175

Likert scale; 1= Strongly Agree, 2=Agree, 3=Not sure, 4=Disagree, 5=Strongly Disagree Source: Field Data, 2015

The mean of 1.56 suggests that the response tends to be in agreement with the statement Free midwife service leads to successful deliveries. The standard deviation of 0.76 suggests that response clusters around the mean value. When asked on whether free theatre services has helped reduce the number of women who die from pregnancy-related causes 90% of the respondents were in agreement. This is evidenced by the mean value of 1.50 and standard deviation of 0.735 that indicates the answer to be in a strong agreement. On the other hand, 30% respondents agree and 38% respondents strongly agree that Free medication ensures quick recovery of the mother after delivery. The mean calculated being 2.26 shows that the respondents are in agreement.

The above statistics show that free delivery care is viewed as a major factor on reducing maternal mortality rate. This is indicated by majority of the respondents agreeing to the free services offered under delivery care. This is supported by the results of the focus group discussions that have many mothers strongly noting that free midwife services has helped reduce the number of women who die due to pregnancy related causes as most of them would not have been able to afford professionals during delivery. The focus group discussion conducted indicates that the women feel free theatre services has helped reduce the number of women who die from pregnancy-related causes thus significantly reduce maternal mortality rate.

To support this records of the maternity database indicate that deaths due to pregnancy related issues at KNH have reduced from 20 mothers per month to 5mothers per month since the introduction of the free maternity healthcare program. This shows that program has seen safe delivery a month middle and low class mothers who attend KNH as they are able to access services to ensure their wellbeing.

4.6 Free Emergency medical services and maternal mortality rate

Respondents herein were asked to indicate whether Free Delivery care influenced maternal mortality rate.

Table 4. 6 Free Delivery care and maternal mortality rate

	Strongly Agree	Agree	Un-certain	Dis-agree	Strongly Disagree	Mean	Standard Deviation
	%	%	%	%	%		
Free paramedic service ensure safe delivery	10%	44%	42%	4%	0	2.40	0.728
Free ambulance service ensure successful deliveries	6%	40%	46%	8%	0%	2.56	0.733
Free emergency service for pregnant women ensure reduction in the number of death due to pregnancy related complications	4%	52%	38%	2%	0	2.50	0.789

Likert scale; 1= Strongly Agree, 2=Agree, 3=Not sure, 4=Disagree, 5=Strongly Disagree Source: Field Data, 2015

To the statement that free paramedic service ensure safe delivery half of the respondents either were uncertain and a similar number agreed. The same statistics of response applied to the respondents view on whether free ambulance service ensures successful deliveries. This is supported by the generated mean of 2.56 showing and 0.733. Similarly when asked on whether Free emergency service for pregnant women ensure reduction in the number of death due to pregnancy related complications about half agreed and the other half were uncertain.

The above statistics shows only a few of the staff are aware of the free emergency services. This is seen as being the paramedics who actually perform this task. The other half are not aware of this service thus cannot give a positive or negative response on whether free emergency services influence maternal mortality rate. This finding is supported by focus group discussion results where most mothers confessed of neither needing the emergency services nor knowing they existed.

4.7 Free Postnatal Care and Maternal Mortality Rate

Respondents were asked to give their view on whether free postnatal care influences maternal mortality rate.

Table 4.7 Free postnatal care and maternal mortality rate

	Strongly Agree	Agree	Un-certain	Dis-agree	Strongly Disagree	Mean	Standard Deviation
	%	%	%	%	%		
Free counselling and a range of options for family planning early postnatal period is important to a mother quick recovery	36%	34%	4%	16%	10%	3.30	0.995
Free physical test done on the mother postpartum ensure quick recovery	26%	38%	24%	2%	10%	2.00	1.186
Free medication given to the mother ensure quick recovery	18%	58%	0%	20%	4%	1.50	0.735

Likert Scale 1=Strongly Agree, 2=Agree, 3=Not sure, 4=Disagree, 5=Strongly Disagree Source: Field Data, 2015

Findings of the study on whether Free counselling and a range of options for family planning early postnatal period is important to a mother quick recovery; the mean 3.30 and standard deviation 0.995 supports the agreement by showing results to be closer to agree and strongly agree. On the other hand, the statement that free physical test done on the mother postpartum ensure quick recovery; The mean 2.32 supports the disagreement by showing results to be closer to agree and strongly agree the standard deviation is 1.186 as the clusters are scattered. The findings also indicate that 18% strongly agree free medication given to the mother ensure quick recovery, 58% agree, and 24% disagree that Free medication given to the mother ensure quick recovery. Mean of 1.50 and standard deviation 0.735 supports this agreement by indicating that respondent's answers tend to be on agreement of the statement. According to respondent's answers, it has been clearly identified that maternal motility rate has reduced due to free postnatal care.

The hospital maternity records stated that before introduction of the free maternal healthcare program 500 women and 2,400 newborns died yearly in the first week after birth. The KNH maternity records show that in the last 5 years deaths due to HIV related causes during birth have gone down to zero for the patients who have religiously attended clinics and followed the guidelines given. Information gathered from the focus group discussion indicate that women find free counselling to be of importance as they are able to avoid being pregnant immediately after delivery thus have ample time to recover and gain strength. Also the women supported free physical testing as a highly influential aspect under postnatal care as they are able to detect any infections thereafter and heal appropriately. The conclusion of the discussion was that postnatal care has significantly reduced maternal motility rate.

CHAPTER FIVE
SUMMARY OF THE FINDINGS, DISCUSSIONS, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of the findings on implementation of free maternal healthcare services in public hospitals. The section is sub-divided into summary of the findings, discussions, conclusion and recommendations.

5.2 Summary of Findings

This section was guided by the variables under study as follows:

5.2.1 Free Antenatal Care and Maternal Mortality Rate

The finding of the study showed that there is a significant relationship between free antenatal care and maternal mortality rate. This is reflected due to the high agreement rate observed in responses given on programmes under the free antenatal care programme by the staff. The free antenatal services ensure that most mothers get access to the antenatal services. The pregnant mother's health is regularly observed thus minimum pregnancy related deaths occur as any complication would be detected early in the pregnancy. 60% of the respondents agreed that free Tetanus vaccine ensure safe delivery, 44% agreed that free supplements ensure healthy mother during delivery, 78% agreed that free Laboratory testing ensure safe pregnancy and 76% agreed that free physical testing ensure safe pregnancy.

5.2.2 Free Delivery care and maternal mortality rate

The study established that there is a direct relationship between free delivery care and maternal mortality rate. Free delivery care is a project focusing on non-payment for professional care given to mothers during child birth whether via virginal delivery or Caesarian Section Resources thus the core aspect of free maternal healthcare program. The study has shown that more than 60% of the respondents agree that services under the free delivery care program have helped reduce the maternal mortality rate significantly. Also the data provided by the hospital indicates

75% reduction of maternal deaths at KNH after the introduction of the free delivery Care.

5.2.3 Free Emergency Care and Maternal Mortality Rate

The study established that free emergency medical services significantly influences maternal mortality rate. About 50% of the patients agree that the free emergency Care project has gone a long way to see that women under emergencies are well handled and survive the delivery process. However the study also shows that most mothers are not aware of this service offered. The study also gathers that very few women develop complications when under this program thus do not get a chance to use emergency services. Consequently the program significantly influences maternal mortality rate. It is therefore important for the government to create awareness on free emergency care so as to have all women benefit from the program.

5.2.4 Free postnatal care and maternal mortality rate

The study established that there is a significant relationship between free postnatal care and maternal mortality rate. Free postnatal care involves free counselling, free medication and free physical testing. Quality of service is attributed to skilled personnel who adhere to professional ethics. According to information gathered in this study 55% of the respondents were satisfied that free postnatal care contributed significantly in the reduction of maternal mortality rate. The free medication offered during postnatal care was seen to be the most appreciated service under the postnatal care as most women seeking this service would not be able to afford it. Thus having the medication ensures quick and smooth recovery of mothers after birth thus significantly seeing a reduction in deaths due to post pregnancy complications.

5.3 Discussion of Key Findings

This discussion was guided by the by the variables under study as follows:

5.3.1 Background Information of Respondents

The finding of this research revealed that the nurses were the majority of the employees who took care of maternity cases. Most of the respondents were College graduates and the average work experience of the respondents was between 5-15

years. The answers were therefore credible as the respondents were literate with vast knowledge on the programme before and after inception.

5.3.2 Free Antenatal Care and Maternal Mortality Rate

Free antenatal care programmes have played a significant role in reduction of maternal mortality rate. Tetanus vaccinations play a big role to maternal and neonatal tetanus as it has no cure. Maternal and neonatal tetanus (MNT) is a devastating disease caused by toxins released from *Clostridium tetani* bacteria. With no cure, the maternity death database from KNH showed that MNT was responsible for an average 1,000 deaths yearly at the hospital. Once contracted, the mother usually dies within seven days. However, MNT is entirely preventable through appropriate immunization of women of child bearing age, and through simple and basic precautionary measures in child delivery. Transmission occurs when there is contact between the bacteria and broken skin or dead tissues, such as the wound resulting when an infant's umbilical cord is cut. Burns and Groove (2013), Poor hygienic conditions, lack of access to sterilized childbirth delivery tools, unhygienic practices, and limited access to health services amplify the risk for MNT during childbirth. With free antenatal care mothers who would have otherwise not afforded the treatment are able to access the vaccine and thus deaths due to MNT are reduced to zero

Free pregnancy supplements given in public hospitals include folic acid and iron. The World Health Organization (WHO) recommends daily iron and folic acid supplementation for pregnant women. The recommended daily dose is 60mg of iron, and 0.4 mg of folic acid. Having free supplements encourages more women who would not have afforded it to access them. This reduces the risk of having a pregnancy affected with spina bifida or other neural tube defects, reduces the risk of having babies with low birth weight and iron defects. The supplements also reduce the risk of maternal anemia.

Free physical exam is well done in most hospitals that offer prenatal care in Kenya. The following are a must: weight, height and blood pressure. Vagina and cervix maybe examined for any abnormalities. A Pap smear test can be requested to check for cervical cancer. The change in the size of the cervix and uterus helps confirm the stage of the pregnancy. When pregnant women access free physical test then they are

able to keep track of every stage in pregnancy and get medical help in case of abnormalities thus reducing deaths due pregnancy related causes.

KNH is well equipped to offer the best prenatal care in Kenya. The required tests for a healthy pregnancy are: Blood-blood type and the Rhesus factor. HIV test in Kenya for pregnant mothers is mandatory. This help especially if mother is HIV positive to start Prevention of Mother to Child Transmission program. Tests are also done for STI's. Urine tested is also carried out to establish if the kidney or bladder infections as these are not good for fetal development. Since majority of the patients accessing public maternity clinics were previously hardly able to afford the pregnancy related laboratory services they did not take the tests. Currently the situation is different as the tests are free thus an increase in healthy pregnancies.

5.3.3 Free Delivery care and maternal mortality rate

The study found that KNH has laid down a Safe Motherhood Initiative. This is an effort that aims to reduce the number of deaths and illnesses associated with pregnancy and childbirth. The following ways are paramount they use to achieving safe motherhood:

Use of free Skilled birth attendance at all births, access to free quality emergency obstetrical care and access to free quality reproductive health care, including family planning and safe post abortion care. In addition, Kenya has signed on to several regional mandates regarding reproductive health, pledging to commit at least 15% of the national budget to health care.

Free midwife services are of importance to reduce home deliveries. KNH has employed enough qualified person to monitor labor in the health facility. This has a great impact on reducing maternal motility. Although it's known that attending to a pregnant mother by a trained person in midwifery skill significantly decreases maternal morbidity and mortality. Nairobi County is heterogeneous cosmopolitan society which comprises of individuals from different background, culture and traditions. Pregnant women seeking to deliver in hospitals have long suffered in the hospitals when they are unable to pay mandatory fees and many have been detained for a long period by the hospital administrators due to failure by their relatives to pay their bills or majority of these women live in the urban informal settlement. After the

introduction of free maternal healthcare services hospitals have reported increased numbers in maternity cases.

5.3.4 Free Emergency Care and Maternal Mortality Rate

The study found out that although midwives find telephone assessment in early labour beneficial, women expressed being dissatisfied with telephone triaging. This leaves women wishing to go to hospital with the option of staying at home, making their own way into hospital or calling paid emergency services for assessment and transport. The study showed that almost 50% of the hospital staff were also clueless on the influence of free emergency care on maternal mortality rate.

For many women, clinical onset of early labour can be ambiguous, with women confusing irregular cramps of spurious labour as a sign of established labour, causing apprehension about the best time to seek health care. For a small proportion of women, labour progresses rapidly increasing the possibility of precipitous or unexpected births in the community with higher associated risks. This is where the paramedics come in. The study found that premature hospital admission for childbirth is linked to increased risks of medical intervention due to predetermined progress milestones directed by hospital protocols as a result.

However, the study found that the women in labour managed by paramedics is scarce. In one ambulance service in KNH, only one ninth of women transported for imminent birth actually birthed before arrival to hospital, the remaining women were therefore in varying phases of first and second stage of labour. Identifying the changes from the irregular contractions of early labour to commencement of second stage requires specialised clinical skills. The challenge of adequate assessment of progress is exacerbated for women who access services not specialising in maternity care. Similar to in-hospital care of women in labour, pre-hospital diagnosis and assessment of progress relies on highly skilled clinical judgement recognising specific cues. It was noted that although they are skilled emergency care practitioners, paramedics have limited education going even as low as some not ever attaining college education, underpinning their knowledge of maternity care, with new graduates reporting lack of confidence in managing labouring women.

5.3.5 Free postnatal care and maternal mortality rate

It was discovered that majority of the respondents appreciated highly free medication care given to make recovery swift and bearable. The hospital maternity records stated that before introduction of the free maternal healthcare program 500 women and 2,400 newborns died yearly in the first week after birth. This is when coverage and programmes are at their Essential. Thus these showed most women neglected or could not afford PNC services.

The study found out that KNH provided a number of services for PNC to all mothers: Assess and check for bleeding, check temperature Support breastfeeding, checking the breasts to prevent mastitis Manage anemia, promote nutrition and insecticide treated bed nets, give vitamin A supplementation Complete tetanus toxoid immunization, if required Provide counseling and a range of options for family planning Refer for complications such as bleeding, infections, or postnatal depression Counsel on danger signs and home care Essential routine PNC. Free postnatal care in public hospitals focuses on free counselling and a range of options for family planning, free gynecology service for the mother and free medication.

The study noted that regardless of place of birth, mothers and newborns spend most of the postnatal period (the first six weeks after birth) at home. Postnatal care (PNC) project was among the weakest of all projects under the free maternal healthcare programme in the hospital.

WHO (2014), The leading cause of maternal mortality in Africa – accounting for 34 percent of deaths – is hemorrhage, the majority of which occurs postnatal. Sepsis and infection claim another 10 percent of maternal deaths, virtually all during the postnatal period. The study found out that HIV-positive mothers are at greater risk of postnatal maternal death than HIV-negative women. Thus newborns and mothers follow up during the postnatal period for prevention of mother-to-child transmission (PMTCT) of HIV. The KNH maternity records show that in the last 5 years deaths due to HIV related causes during birth have gone down to zero for the patients who have religiously attended clinics and followed the guidelines given.

The study found that access to family planning in the early postnatal period is also important, and lack of effective PNC contributes to frequent, poorly spaced pregnancies. This is a stressful time for new mothers, thus the clinics offered emotional and psychosocial support to reduce the risk of depression.

The clinicians noted that if routine PNC and curative care in the postnatal period reached 90 percent of babies and their mothers, 10 to 27 percent of newborn deaths could be averted. In other words, high PNC coverage could save up to 310,000 newborn lives a year in Africa. The impact on maternal survival and well-being would also be significant.

5.4 Conclusion of the Finding

The study revealed that there is a significant relationship between free antenatal care and maternal mortality rate in Nairobi County, Kenya. Investment in free antenatal care programmes and encouragement of mothers to attend would ensure a decrease in maternal mortality rate. The roles played by vaccines and physical tests given during the antenatal period go a long way to see not only delivery of healthy babies but healthy mothers too.

The study established that there is a direct relationship between free delivery care and maternal mortality rate. Whether via vaginal delivery or Caesarian Section every mother seeking to deliver must be attended to by a professional to avoid infections and worse death of mother and baby. The study identified that the nurses, doctors were well trained and had enough experience to handle the procedure. In the contrary most paramedics were less experienced and less skilled to handle successful delivery procedure.

The study also deduced that there is a relationship between free emergency medical services significantly and maternal mortality rate. This takes care of mothers on emergency situations at home who would have died due to intensive bleeding, pain or being attended to by nonprofessionals. However the study also shows that most mothers and staff are not aware of this service offered. Failure by the government to inform women on free emergency medical services may result into underutilization

of free services in lower level hospitals leading to deaths due to related circumstances.

The study established that there is a significant relationship between free postnatal care and maternal mortality rate hence women need to be encouraged to attend postnatal clinics even after safe deliveries. This would help reduce deaths due to afterwards complications and ensure faster healing.

The study recorded Above 50% agreement by respondent to all question pointers the best pointer that free maternal healthcare has positively influenced reduction in maternal mortality rate.

5.5 Recommendation of the Study

The study finding unveiled a number of suggestion concerning the influence of free maternal healthcare services in Nairobi County, Kenya. The following are therefore recommendations on the finding:

1. Other essential services should be added to the delivery care programme such as provision of treatment in case of complications during delivery.
2. The number of staff need to be increased as more women are accessing maternity services in hospital thus the current staff are overwhelmed.
3. Labouring women to telephone maternity wards prior to hospital attendance to remain at home until labour is established and avoid this 'cascade of interventions'.
4. Paramedics should be provided with maternity training so as to be well equipped to attend to the patients.
5. Awareness should be created on free emergency services as most women and staff seemed unaware of it.
6. The government put more emphasis on Patient satisfaction as a way of attracting more patients to deliver in public hospitals.

5.6 Suggested Areas for Further Research

There may be a need for further research to determine the quality of services after the introduction of free maternal healthcare services in public hospitals in Kenya.

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APPENDICES
APPENDIX I. Letter of introduction

Date: October 21, 2015

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

REQUEST FOR COLLECTION OF DATA

I Omollo Catherine Nduvi, Reg. No. L50/73403/2014, I'm a post-graduate student at the School of Continuing and Distance Education, University of Nairobi. I Am conducting a research titled "**FREE MATERNITY HEALTHCARE PROGRAMME ON MATERNAL MORTALITY RATE IN NAIROBI COUNTY, KENYA**".

You have been selected to form part of the study. Kindly assist by filling in the attached questionnaire. The information given will be treated in strict confidence and will be purely used for academic purposes. Do not indicate your names or details on questionnaire.

A copy of the final report will be availed upon your request.

Your assistance and cooperation will be highly appreciated

Yours sincerely,

.....

Omollo Catherine Nduvi,

(Student)L50/73403/2014

APPENDIX II

QUESTIONNAIRE

The purpose of this study is to establish the influence of top management support, organization structure, communication system, project team leader and procurement procedures in successful implementation of biomedical research.

This questionnaire is a part of Masters of Arts in Project Planning and Management at the University of Nairobi, and is completely anonymous. Your answer will be treated with confidentiality. Please indicate the correct option as honestly and as correctly as possible by checking a TICK (✓) on one of the options. For the questions that require your opinion, please complete the blanks.

SECTION A: GENERAL DETAILS (please check all that apply)

PARTICIPANT DETAILS	Description
Occupation	Nurse [] Doctor [] Paramedic []
Highest Education Level	None [] Primary [] Secondary [] College [] University []
Work experience	Below 5years [] 5 - 10 years []

	10 - 15 years[] 15 - 20 years[] Above 20 years[]
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Section B: Free Antenatal Care

1. Free Antenatal Care is given in public hospitals including KNH., Please indicate the level with your agreement on the following statements which are measured in the Likert scale of 1-5 where 5 = Strongly Agree, 4 = Agree 3= Neutral 2= Disagree 1 = Strongly Disagree

	1	2	3	4	5
Free tetanus vaccine ensures safe delivery					
Free supplements ensure healthy mothers during delivered					
Free laboratory testing ensures safe pregnancy					
Free physical testing ensures safe pregnancy					

Section C: Free Delivery Care

2. Free Delivery Care is given in public hospitals including KNH., Please indicate the level with your agreement on the following statements which are measured in the Likert scale of 1-5 where 5 = Strongly Agree, 4 = Agree 3= Neutral 2= Disagree 1 = Strongly Disagree

	1	2	3	4	5
Free midwife services leads to successful deliveries					
Free theatre services has helped reduce the number of					

women who die from pregnancy-related causes					
Free medication ensure quick recovery of the mother after delivery					

Section D: Free Emergency medical services

3. Free Newborn Care is given in public hospitals including KNH., Please indicate the level with your agreement on the following statements which are measured in the Likert scale of 1-5 where 5 = Strongly Agree, 4 = Agree 3= Neutral 2= Disagree 1 = Strongly Disagree

	1	2	3	4	5
Free paramedic services ensures safe delivery					
Free ambulance services ensure successful deliveries					
Free emergency services for pregnant women ensure reduction in the number of deaths due to pregnancy related complications					

Section E: Free Postnatal care

4. Free Postnatal Care is given in public hospitals including KNH., Please indicate the level with your agreement on the following statements which are measured in the Likert scale of 1-5 where 5 = Strongly Agree, 4 = Agree 3= Neutral 2= Disagree 1 = Strongly Disagree

	1	2	3	4	5
Free counselling and a range of options for family planning in early postnatal period is					

important to a mothers quick recovery.					
Free physical tests done to the mother postpartum ensure quick recovery					
Free medication given to the mother ensure quick recovery					

Appendix III

FOCUS GROUP DISCUSSION SCHEDULE

Section B: Free Antenatal Care

1. Does free tetanus vaccine ensures safe delivery? Explain
2. Does free supplements ensure healthy mothers during delivered? Explain
3. Does Free laboratory testing ensures safe pregnancy? Explain
4. Does Free physical testing ensures safe pregnancy? Explain

Section C: Free Delivery Care

1. Does Free midwife services leads to successful deliveries? Explain
2. Does Free theatre services has helped reduce the number of women who die from pregnancy-related causes? Explain
3. Does Free medication ensure quick recovery of the mother after delivery? Explain

Section D: Free Emergency medical services

1. Does Free paramedic services ensures safe delivery? Explain
2. Does Free ambulance services ensure successful deliveries? Explain
3. Does Free emergency services for pregnant women ensure reduction in the number of deaths due to pregnancy related complications? Explain

Section E: Free Postnatal care

1. Does Free counselling and a range of options for family planning in early postnatal period is important to a mothers quick recovery? Explain
2. Does Free physical tests done to the mother postpartum ensure quick recovery? Explain
3. Does Free medication given to the mother ensure quick recovery? Explain

Appendix IV

Krejcie and Morgan Table (1970).

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

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

Source: Krejcie & Morgan, 1970

APPENDIX III: Letter of Authorization



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

Your Ref:

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

4th November 2015

REF: UON/CEES//NEMC/22/429


TO WHOM IT MAY CONCERN

RE: OMOLLO CATHERINE NDUVI - REG. NO- L50/73403/2014

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

She is proceeding for research entitled "influence of free maternity healthcare programme on maternal mortality rate in Nairobi County, Kenya". A case of Kenyatta National Hospital

Any assistance given to her will be highly appreciated.


CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EXTRA MURAL CENTRE

