

**INFLUENCE OF PROVISION OF FREE MATERNAL HEALTH CARE
PROGRAM ON MATERNAL MORTALITY RATES IN KISII COUNTY,
KENYA**

NYANGENA DUKE MOSE

**A Research Project Report Submitted in Partial Fulfillment of the Requirements for the
Award of the Degree of Master of Arts in Project Planning and Management of the
University of Nairobi**

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DECLARATION

This research project report is my original work and has not been presented for the award of a degree in this or any other university, information obtained from other sources have been properly acknowledged .

Sign_____

Date_____

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This research project report has been submitted for examination with my approval as the university supervisor.

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DEDICATION

I dedicate this research project report to my family and friends who pushed me to start this course. Their encouragement all through the years has been invaluable. I thank you.

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I am grateful to everyone who in one way or another contributed to the development of my research work. First and foremost, I thank The Almighty God for giving me good health and strength and the ability to undertake this noble course.

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LIST OF ABBREVIATIONS AND ACRONYMS

PNC:	Post Natal Care
FMC:	Free Maternity Care
KTRH:	Kisii Teaching and referral 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
MNCH:	Maternal ,Newborn and child Health
MNT:	Maternal Neonatal Tetanus
MoH:	Ministry of health
PMTCT:	Prevention of Mother To child Transmission
SDG:	Sustainable Development Goals
SMI:	Safe motherhood initiative
STI:	Sexually Transmitted Infections
TBA:	Traditional birth attendant
UNFPA:	United nation population fund
WHO:	World health organization
WRA:	Women of reproductive age

ABSTRACT

Kenya has long suffered from high maternal morbidity and mortality rates. 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 live births by the year 2015 and SDG target of 70 per 100,000 live births by the year 2030. 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. 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. By the year 2012, only 44% of births in Kenya were delivered under the supervision of a skilled birth attendant. 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. This paper seeks to evaluate the success rate of this government policy of free maternal health care and the key challenges facing free maternal health care in Kenya. It will explore evidence from Kenya, as well as other countries that have implemented free maternal health care policies, in order to assess the situation and advise the government on best practices moving forward. It begins by outlining the national and international framework guiding the right to reproductive health. It then documents some of the key challenges facing the free maternal health care program and outlines several strategies for ensuring free services are implemented fully, effectively, and without compromise to other key arenas of intervention. Finally, it concludes with a summary of recommendations to the Government of Kenya and other stakeholders.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Millennium Development Goal number 5 set a target of reducing maternal mortality by 75% by the year 2015 from the year 1990 (MDG 5). To improve on the MDGs from 2015, Sustainable Development Goals (SDGs), were set. The sustainable development goals are a collection of 17 global goals designed to be a “blueprint to achieve a better and more sustainable future for all.” The SDGs, set in 2015 by the United Nations General Assembly and intended to be achieved by the year 2030, are part of UN Resolution 70/1, the 2030 Agenda. Goal 3 of the sustainable development goals being Good Health and well-being has the following notable targets among others;

1. By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.
2. By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births. (United Nations, 2015).

Globally, an estimated 289 000 women died during pregnancy and childbirth in 2013, a decline of 45% from levels in 1990. 99% of these deaths occurred in the less developed countries. Most of them died because they had no access to skilled routine and emergency care. Since 1990, some countries in Asia and Northern Africa have more than halved maternal mortality (World Health Organisation, 2014). 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.

Improving maternal health is critical to saving the lives of hundreds of thousands of women who die due to complication from pregnancy and childbirth each year. Over 90 percent of these deaths could be prevented if women in developing regions had access to sufficient diets, basic literacy and health services, and safe water and sanitation facilities during pregnancy and childbirth.

In 2017, 4.1 million (75% of all under-five deaths) occurred within the first year of life. The risk of a child dying before completing the first year of age was highest in the WHO African Region (51 per 1000 live births), over six times higher than that in the WHO European Region (8 per 1000 live births).

Globally, the infant mortality rate has decreased from an estimated rate of 65 deaths per 1000 live births in 1990 to 29 deaths per 1000 live births in 2017. Annual infant deaths have declined from 8.8 million in 1990 to 4.1 million in 2017.

About 10.8 million children under five years of age die in the world each year mainly from preventable conditions or diseases that could be treated effectively; 42 countries account for 90% of the child deaths while 6 countries account for 50% of the deaths (Black et al., 2003). Causes of death differ substantially from one country to another; however, pneumonia and diarrhoea remain the illnesses that are most often associated with child deaths. The lives of an estimated 6 million children could be saved each year if proven interventions such as antibiotics for pneumonia and oral rehydration therapy for diarrhea were universally available in the 42 countries responsible for 90% of child deaths. Existing child survival interventions could, if implemented through efficient and effective strategies, prevent a substantial proportion of current deaths (Jones et al., 2003). Evidence confirms it is possible to design intervention packages that effectively improve child survival and development in very different contexts, depending on the relative burden of causes of death.

Kenya is one of the 42 countries accounting for 90% of all under-five deaths in the world. The findings of the 2003 Kenya Demographic and Health Survey (KDHS) reveal that one in every nine children born dies before age five, mainly of acute respiratory infection, diarrhea, measles, malaria, and malnutrition. That major challenges remain in the effort to reduce child mortality in Kenya is evidenced by the continued increase in mortality rates since the 1990s. In the years between the 1970s and 1990s, infant and child mortality declined rapidly in Kenya as a result of the global initiatives to improve child health.

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 and SDG target of 70 per 100,000 live births by the

year 2030. 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. 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. 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 maternal services, and/or face other barriers to accessing quality care. 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.

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, effective immediately. Health facilities soon began to feel the effect of this policy. On the day of the announcement, Pumwani Maternity Hospital delivered an unprecedented 100 births. By July, the Director of Public Health and Sanitation estimated a 10% increase in deliveries across the country, with increases of 50% in certain counties. In some facilities, these numbers have been even higher. According to representatives of Kenyatta National Hospital (KNH), within a month the number of pregnant women seeking maternal care had increased by 100 per cent.

In July 2013, the government committed Sh3.8 billion to fund the free maternal health care program, with an additional Sh700 million for free access to health centers and dispensaries, Sh3.1 billion for recruitment of 30 community nurses per constituency, Sh522 million for recruitment of 10 community health workers per constituency, and Sh 1.2 billion for provision of housing units to health care workers, within its overall allotment of Sh10.6 billion for health care in the 2013/14 national budget. Sh60 billion has also been allotted to county governments to be used on health, leading to a total of Sh95 billion for health overall. And yet, several observers from within the health system have expressed concern that these commitments will not be nearly enough to meet the additional demand placed on facilities and staff due to the free maternity health policy. Others have questioned the feasibility and the appropriateness of the policy altogether which, they warn, might lead to a decline in quality of services, could further increase

reproductive inequalities across the country, and will do little to address and could even worsen human rights violations in health facilities.

What are the key challenges facing free maternal health care in Kenya? What strategies can the government undertake to ensure the program is a success and achieves the goal of enhancing the state of maternal health in Kenya? This paper uses evidence from Kenya, as well as other countries that have implemented free maternal health care policies, in order to assess the situation and advise the government on best practices moving forward. It begins by outlining the national and international framework guiding the right to reproductive health. It then documents some of the key challenges facing the free maternal health care program and outlines several strategies for ensuring free services are implemented fully, effectively, and without compromise to other key arenas of intervention. Finally, it closes with a summary of recommendations to the Government of Kenya and other stakeholders.

Given the worrying trends in infant and child mortality rates, there is a clear need to assess current practices in the management of childhood illnesses and identify opportunities for intervention. Holistic approaches to improving child survival, such as the Integrated Management of Childhood Illnesses (IMCI) strategy, are one set of practices that have been shown to improve health outcomes for children. Conceptually, holistic approaches encompass components from the health facility such as availability of drugs and supplies, components from the health system such as skills training, and the family and community component of care-seeking practices. This conceptual framework is used to analyze client observation, exit interviews, and facility inventory data from the 2004 Kenya Service Provision Assessment in an effort to discern the factors that are associated with the practice of a holistic approach to child health care. Recommendations are made as to how the results might be used to influence programme and policy, with the aim of increasing child survival and development.

In order to reduce mortality among children under five, the government of Kenya, through the Ministry of Health, has developed and implemented new approaches to child survival efforts. The Kenyan government is also committed to the achievement of Millennium Development Goal number 4: reducing the infant and under-five mortality rates to 21 and 32 per 1,000 childbirths respectively by the year 2015. This section reviews the key child survival strategy being

implemented in Kenya, Integrated Management of Childhood Illnesses (IMCI), as well as recent evidence from health facilities on the implementation of this strategy.

1.2 Statement of the Problem

Globally, a woman dies every minute from complications related to child birth. About half a million women die each year due to pregnancy related causes, of which 99% occurs in developing countries. Attending antenatal clinics and deliveries with the assistance from skilled personnel has a significant impact in relation to maternal mortality and morbidity. The 2010 KDHS , estimate that 1 in 25 women have a chance/risk of dying from pregnancy and child birth complication in a life time. Use of maternal health care services is an effective approach in reducing the risk of maternal morbidity and mortality, especially in places where general health status of a woman is poor(Gage, 2003). Although overall antenatal care coverage remains low, many women make their first ANC visit late into the pregnancy as compared to the recommended at 14 weeks of pregnancy. Use of skilled professional during delivery has declined from 51% in 1989 to 42% in 2004, further demonstrating a deteriorating use of maternal health care services among pregnant women. According to the 2010 Kenya preliminary census report, young people (age 14-24) who form about 36% of the population is the fastest growing segment of the population , these young people are faced with a number of challenges which range from early initiation to sex, unemployment ,abortion ,unwanted pregnancies among others.

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). Given the perspective of poverty and lack of quality maternal health care services in Kenya, implementation of free maternal health care services will depend on improved hospital infrastructure, increased resources outlay, staffing and improved remuneration packages for medical staffs.

Table 1 Maternal mortality rates per 100,000 births per country

The table shows the difference between the western world and third world economies. Improvement is also noted for each country but the deaths are still much higher than anticipated by the WHO, the MDGs and SDGs

Country/Year	2011	2012	2013	2014	2015	2016	2017
Algeria	116	116	115	114	114	113	112
Angola	300	281	269	258	251	246	241
Austria	5	5	5	5	5	5	5
Belgium	6	6	6	6	5	5	5
China	34	33	32	31	30	29	29
Denmark	5	5	4	4	4	4	4
Egypt	42	42	40	39	39	38	37
Finland	4	4	4	3	3	3	3
Kenya	398	373	364	358	353	346	342
Nigeria	972	963	951	943	931	925	917
Tunisia	46	46	46	46	46	45	43
Uganda	419	412	401	394	387	381	375

1.3 Purpose of the Study

The purpose of this study was to analyze the influence of the government of Kenya's free maternal health care programme on maternal and child mortality rates.

1.4 Objectives of the Study

This study was guided by the following objectives

- i. To establish how free prenatal care influences maternal mortality rate in Kisii County
- ii. To determine how free delivery care influences maternal mortality rate in Kisii County
- iii. To assess how free Emergency medical services influences maternal mortality rate in Kisii County
- iv. To identify how free post-delivery care influences maternal mortality rate in Kisii County

1.5 Research Questions

This research proposal sought answers to the following research questions

- i. How does free prenatal care influence maternal mortality rate in Kisii County?

- ii. How does free delivery care influence maternal mortality rate Kisii County?
- iii. How does free Emergency medical services influence maternal mortality rate in Kisii County?
- iv. How does free post- delivery care influence maternal mortality rate in Kisii County?

1.6 Research Hypothesis

This research sought to test the hypothesis

1 H₀: Free prenatal care has no significant influence on maternal mortality rate in Kisii County

2. H₀: Free delivery care has no significant influence on maternal mortality rate in Kisii County

3. H₀: Free Emergency medical services has no significant influence maternal mortality rate in Kisii County

4. H₀: Free post-delivery care has no significant influence on maternal mortality rate in Kisii County

1.7 Significance of the Study

The finding of this study was valuable to researchers and scholars, as it would form a basis for further research. The students may use this study to form a 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.

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).

1.8 Assumptions of the Study

The respondents in the County understood and answer the questions in the questionnaire correctly and truthfully and willingly and will return the filled questionnaires within the postulated timeframe without any external negative influence.

The researcher believes the respondents understand English and can fill the questionnaires without any due influence. For the aged and the disabled who are unable to read and fill the questionnaires was read to them to capture their views in the form of interviews.

1.9 Limitation of the study

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

1.10 Delimitation of the study

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

1.11 Definition of Key terms

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

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

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

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

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter investigates into previous literature on free prenatal care influence on maternal mortality, free delivery care influences maternal mortality rate, free Emergency medical services influence maternal mortality rate and free post-delivery care influences maternal mortality rate. The theoretical framework and the Conceptual framework that will guide the study are clearly illuminated

2.2 Concept

Concept of provision of free maternal health care on maternal mortality

2.3 Review of Critical Literature

This section reviews the available literature on the key themes

2.3.1 Free Prenatal Care and Maternal Mortality Rate

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 according to the 2008-09 KDHS report. The report adds that about half (52%) receive care before the 6th month of pregnancy. Barnett 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).

Every region has advanced, although levels of maternal mortality remain unacceptably high in sub-Saharan Africa. Almost all maternal deaths can be prevented, as evidenced by the huge disparities found across regions and between the richest and poorest countries. The lifetime risk of maternal death in high-income countries is 1 in 5,400, compared to 1 in 45 in low-income. The global lifetime risk of maternal death nearly halved between 2000 and 2017, from 1 in 100, to 1 in 190. (WHO *et al*, 2019)

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 spinal 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).

According to 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).

2.3.2 Free Delivery Care and Maternal Mortality Rate

Leading contributory factors of maternal deaths include inadequate human resource for health, delay in seeking care, inadequate equipment, lack of ambulance transportation, and delay in referrals services.(Sageer, R et al, 2019)

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 personnel to monitor labor in the health facility has a great impact on reducing maternal mortality. In Kenya health workers are unevenly distributed across the country with particular gaps in the North Eastern and Northern Rift provinces. The complications leading to maternal death can occur without warning at any time during pregnancy and childbirth. Most maternal deaths can be prevented if births are attended by skilled health personnel – doctors, nurses or midwives – who are regularly supervised, have the proper equipment and supplies, and can refer women in a timely manner to emergency obstetric care when complications are diagnosed. Complications require prompt access to quality obstetric services equipped with life-saving drugs, including antibiotics, and the

ability to provide blood transfusions needed to perform Caesarean sections or other surgical interventions. ((WHO *et al*, 2019). Although it's known that attending to a pregnant mother by a trained person in midwifery skill significantly decreases maternal morbidity and mortality. Kisii 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 health care 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)

2.3.3 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 ,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 dissatisfied 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 specialized clinical skills (McLelland GE, 2014). The challenge of adequate assessment of progress is exacerbated for women who access services not specializing in maternity care. Similar to in-hospital care of women in labour, pre-hospital diagnosis and assessment of progress relies on highly skilled clinical judgment recognizing 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)

2.3.4 Free Post-delivery 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. 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. HIV-positive mothers are at greater risk of postnatal maternal death than HIV-negative women. 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. The impact on maternal survival and well-being would also be significant. There is now more consensus on the content of PNC.

Every day in 2017, approximately 810 women died from preventable causes related to pregnancy and childbirth. Between 2000 and 2017, the maternal mortality ratio (MMR, number of maternal deaths per 100,000 live births) dropped by about 38% worldwide. 94% of all maternal deaths occur in low and lower middle-income countries. Young adolescents (ages 10-14) face a higher risk of complications and death as a result of pregnancy than other women. Skilled care before, during and after childbirth can save the lives of women and newborns (WHO, 2019).

2.4 Theoretical Framework

This study links with Anderson's health behavior model to analyse the implementation of free maternal health care services in public hospitals in Kenya.

Andersons Health Behaviour Model

Anderson's (1968) health behavior model postulates that certain characteristics contribute to, or determine implementation of health care 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) and SDG 3 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).

2.5 Conceptual Framework

The emphasis of the study will be to define the relationship between the dependent and independent variable. In this study the independent variable being free maternity health care program whose indicators are free antenatal care, free delivery care, free emergency services and free postnatal care. The dependent variables is maternal mortality rate whose indicators are number of successful deliveries and number of healthy babies delivered

Independent variable

moderating variable

intervening variable

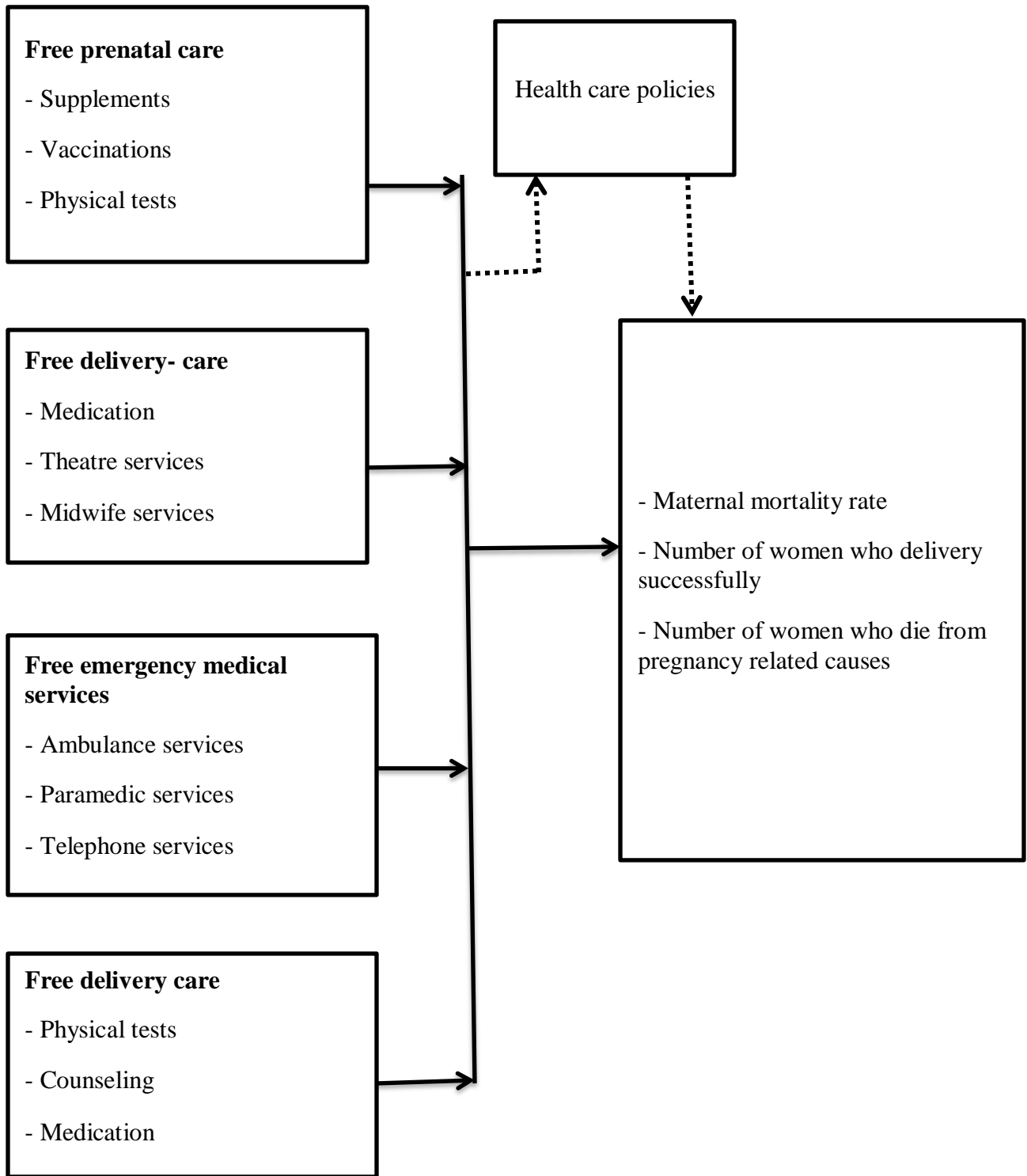


Figure 1 Conceptual Framework

2.6 Knowledge Gap and Summary

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

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design that was used in the study, the target population, sample size and sampling procedure and data collection instruments. The pilot study was described, validity and reliability of research instruments discussed. It also contained data analysis techniques, the operationalization table of variables plus ethical considerations

3.2 Research Design

Research design is the format that guides the implementation of a research method, and the subsequent analysis of acquired data (Sapsford, 2007). It provides a framework for the generation of evidence that is suitable both to a certain set of criteria and to the research question in which the investigator is interested

A descriptive survey design was used in this study to explore influences of successful implementation of community base projects. Descriptive survey is a method of collecting information by interviewing and administering questionnaires to a sample of individuals (Orodho, 2003; Kothari, 2003). Descriptive survey enables the collection of information through questionnaires to determine the opinions, attitudes, preferences and perceptions of persons of interests to the research (Borg, 1987). Descriptive design allows the researcher to generate both numerical and descriptive data that can be used in measuring the relationship between variables as well as determining the effect provision of free maternal health care on maternal and child mortality rate in Kenya.

This research collected data that can be enumerated. This made the use of descriptive statistics most suitable to this research.

3.3 Population and Sample Size

The study population targeted women of reproductive age seeking to undertake maternity services in Kisii Teaching and referral hospital and staff at KTRH maternity wing. Target population consisted of 70 nurses, 50 paramedics, 40 doctors at KTRH maternity wing and 340

mothers. The study population is taken from recorded figures obtained from Kisii Teaching and referral Hospital Management System; i.e. the average number of women who attend maternity clinic daily at KTRH and the number of staff in the maternity department as at December 2019. Therefore the total target population is 500 which includes nurses, paramedics, doctors and mothers

3.4 Sample Size and Sampling Procedure

The sample size and sampling procedures for this study was 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 will be 260 respondents which consist of 170 mothers, 45 nurses, 25 paramedics and 20 doctors drawn from the target population based on the Krejcie and Morgan Table (1970).

3.4.2 Sampling Procedure

Table 2 Target Population and Sample Size

	Target Population	%age	Sample Size
Doctors	40	50%	20
Nurses	70	64%	45
Paramedics	50	50%	25
Mothers (For focus group discussions)	340	50%	170
Total	500	52%	260

A cross sectional study was conducted where a total of 45 nurses, 25paramedics, 20doctors and 170 mothers were selected from the Kisii Teaching and referral Hospital. 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 were picked randomly. To select nurses, paramedics and doctors the study used simple random sampling. These sampling methodologies are deemed appropriate to represent the target population and to provide the same results at the lowest possible cost and time.

3.5 Data Collection Procedure

The research collected primary data using questionnaires. According to Denzin and Lincoln (2000), an in depth questionnaire leads to generation of insightful facts, statistical information and permit a better understanding of organizational complexity. The questionnaire will be properly designed to ensure that it provides valid and reliable.

The researcher visited the projects to explain to the respondents the nature of the study and created rapport prior to the collecting of data. The questionnaire was considered appropriate because the targeted respondents were literate. The questionnaire will also ensure uniformity in the way questions are asked.

3.6 Data collection Instruments

The researcher used self-administered questionnaire for data collection for the community. The questionnaires were administered to nurses, paramedics and doctors at KTRH Maternity wing. The questions were 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 questions. 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: Prenatal Care, Section C: Delivery Care Section D: Emergency medical services Section and Section E: Post-delivery 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 17 groups and were given points to discuss on in the presence of a research assistant.

3.6.1 Pilot Study

In order to minimize errors in the questionnaire, a pilot testing was done by collecting data from Christiamarriane mission Hospital one week prior to the main study. Christamarriane Hospital is a small scale Mission hospital in Kisii County with similar characteristics to Kisii teaching and referral hospital; the findings are expected to be similar to what will be obtained at KTRH. 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 will be corrected.

3.6.2 Validity of Research instrument

Validity is defined as a means of assessing that the research instruments used in a study collect the data they attempt to gather (Somekh and Cathy, 2005). This study adopted content validity that is a measure of the degree to which data collected using the study's instruments represents a specific domain or content of the concepts in this study. To ensure validity, the researcher requested expert opinion to comment on the representativeness and appropriateness of questions and give suggestions of corrections to be made to the structure of the research tools. The validity of the research instruments established by holding discussion and seeking counsel with my supervisor and modification of the instrument was implemented after supervisor's approval.

3.6.3 Reliability of Research Instruments

A reliable instrument is one that gives consistent results. It is these consistent results that gave the researcher confidence that the results actually represent what will be measured (Graziano and Raulin, 2013). Reliability was established by using more than one instrument to the group of individuals during the same time. Further, to check reliability of the research instruments and address any deficiencies in the research instruments, a pilot study was conducted using 15% of the main sample size as recommended by (Neuman, 2011).

Therefore, this study's pilot will be conducted on 26 respondents from the target population. Internal consistency techniques using Cronbach's Alpha was applied.

3.7 Data Collection procedure

The researcher visited the hospital superintendent KTRH to inform him of the intended research. He then talked to the matron in charge of the maternity ward and left the questionnaires for the doctors, nurses and paramedical staff to fill. The questionnaires were later collected after being filled.

The researcher visited the hospital on designated days for maternity so as to hold focus group discussions with the mothers.

3.8 Data Analysis Technique

Data analysis is the procedure that involves creating order, structure and meaning to the mass of information collected by a researcher (Babbie, 2010). To ensure that data is entered correctly, scores are high or low and how many in each category, the researcher constructed frequency and percent distribution using SPSS version 21.0. SPSS was used because it helps to spot data entry errors or unusual data points and has full set of statistical tests. The researcher will analyze the data to be collected to get statistical measures such as correlations among different variables, mean and standard deviations for easy interpretation of the study. The analysis will help the researcher to make valid inference on the topic of study.

The data from interview guide and open ended questions was analyzed through content analysis by presenting data in themes as per the research objectives. Frequencies and percentages was used to summarize information.

3.9 Consideration of Ethical Issues

Consent was sought from the participants to indicate the willingness to participate; the researcher also will ensure anonymity when it comes to answering the study questionnaire. The researcher will ensure that the information that was used for research purposes only (Macfarlane, 2009). To conduct this study, the researcher is also seeking a permit from the National Commission for Science, Technology and Innovation

3.10 Data Presentation Methods and Techniques

Data analysis is the procedure that involves creating order, structure and meaning to the mass of information collected by a researcher (Babbie, 2010). To ensure that data is entered correctly, scores are high or low and how many in each category, the researcher constructed frequency and percent distribution using SPSS version 21.0. SPSS will be used because it helps to spot data entry errors or unusual data points and has full set of statistical tests. The researcher will analyze the data to be collected to get statistical measures such as correlations among different variables, mean and standard deviations for easy interpretation of the study. The analysis will help the researcher to make valid inference on the topic of study.

The data from interview guide and open ended questions will be analyzed through content analysis by presenting data in themes as per the research objectives. Frequencies and percentages will be used to summarize information.

Information will be presented in Tables and Descriptive and Inferential Statistics in the form of percentages and ratios

3.11 Operational Definition of variables

Denscombe, (2007) define the operational definition of variable as the Actual method, tool, or technique which indicates how the concept will be measured

Table 3 Operational Definition of variables

Objectives	Independent Variable	Indicators	Measurement of Indicators	Scale	Data collection method	Data analysis
Free prenatal care influences maternal mortality rate in Kisii County	Free prenatal care	Vaccinations, Supplements, Physical tests, laboratory tests	<ul style="list-style-type: none"> Quantity of vaccines, Quality of test 	Ordinal	questionnaire	Descriptive and inferential Statistics
To determine how free delivery care influences maternal mortality rate in Kisii County	Free delivery care	midwife services,	<ul style="list-style-type: none"> Quality of services, 	Ordinal	questionnaire	Descriptive Statistics
To assess how free Emergency medical services influences maternal mortality	free Emergency medical services	Ambulance services, paramedic services	<ul style="list-style-type: none"> Quality of services 	Nominal	Questionnaire	Descriptive Statistics

rate in Kisii County						
To identify how free post-delivery care influences maternal mortality rate in Kisii County	Post - delivery care	Vaccines, Physical test, Medication	<ul style="list-style-type: none"> • Range of options for family planning, Quality of test, Quantity of medication 	Ordinal		

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 the purpose of comparison with the expected findings. The purpose of the study was to examine influence of provision of free maternal health care on maternal mortality rate in Kenya, a case of Kisii County, The data was summarized in table form and bar graph to bring out the reality on 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 Questionnaire Return Rate

The researcher issued 90 Questionnaires to the KTRH staff. Out of 90 questionnaires, 70 were returned translating to 77% return rate. This clearly indicates that the respondents were positive in relaying information sought through the questionnaires.

4.3 Background of Information

The study sought to establish information of respondents including occupation, highest education level, work experience of the nurses, doctors and paramedics of Kisii Teaching and referral hospital maternity wing.

4.3.1 Occupation of the respondents

The study sought to find out the relationship between respondents occupation and their opinion on provision of free maternity health care programme on maternal mortality rate in Kisii County, Kenya.

Table 4 Distribution of respondents by occupation

Occupation	Respondents	Percentage%
Nurses	35	50
Doctors	15	22
Paramedics	20	28
Total	70	100%

Table 4 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 22% were doctors who mostly handled complications and surgeries this indicated the credibility of the findings on causes of maternal deaths. This was followed by 28% who were paramedics indicating that results 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

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 provision of free maternity health-care programme on maternal mortality rate in Kisii County, Kenya

Table 5 Respondent's level of education

Level of education	Respondents	Total Percentage%
Non	0	0
Primary	0	0
Secondary	5	7
College	45	64
University	20	28
Total	70	100%

Table 5 revealed that Non had attained below secondary education, 7% of the respondents had attained up to secondary education, 64% had attained up to college education, 28% 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 Work of experience of the 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 provision of free maternal health care services on maternal motility rate in public hospitals.

Table 6 Years of work experience

Occupation	Respondents	Total Percentage%
Below 5 years	10	14
5- 10 years	20	29
10 – 15 years	30	43
15 – 20 years	8	11
Above 20 years	2	3
Total	70	100%

Table 6 showed showed that most staff had worked in these fields for over 5years thus were well placed to give reliable opinions regarding their views on maternal mortality rates in comparing before and after introduction of free maternal health care. It also represents that most of the staff have enough experience in their careers.

4.4 Free prenatal 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. Likert scale; 1= Strongly Agree, 2=Agree, 3=Not sure, 4=Disagree, 5=Strongly Disagree

Table 7 Free prenatal care

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

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Std deviation
Free tetanus vaccine ensure safe delivery	9 %	53%	34%	4%	0	2.33	0.693
Free supplements ensure healthy mother during delivery	0%	45%	40%	10	5	2.75	1.006
Free laboratory testing ensure safe pregnancy	20%	58%	20%	2%	0	2.04	0.699
Free physical ensure safe pregnancy	13%	63%	16%	6%	2%	2.22	0.715
Composite Mean and Standard Deviation						2.33	0.778

With regard to whether they feel Free Tetanus vaccine ensure safe delivery, there was a mean score of 2.33 on the Likert scale indicating that respondents were in agreement. This is supported by the findings which show that 53% 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 45% agree, 40% of the respondents are uncertain 10% disagree and 5% 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 1.006 suggesting that the views of respondents varied thus. On the view of free laboratory testing ensures 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, 63% 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 Kisii County. The maternity death database from KTRH showed that MNT was responsible for an average 500 deaths yearly at the hospital.

This statement is supported by the focus group discussions held with the mothers at the maternity clinic at KTRH 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 in case 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 care

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

Table 8 Free delivery care and maternal mortality rate

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

	Strongly agree	Agree	Un-certain	Disagree	Strongly disagree	Mean	Std deviation
Free midwife service leads to successful deliveries	58%	34%	4%	4%	0	2.12	0.660
Free theatre services has helped reduce the number of women who die from pregnancy-related causes	60%	26%	8%	2%	0%	1.44	0.735
Free medication ensures quick recovery of the mother after delivery	33%	35%	20%	10%	2%	2.16	1.165
Composite Mean and Standard Deviation						1.91	0.85

The mean of 2.12 suggests that the response tends to be in agreement with the statement ‘Free midwife service leads to successful deliveries’. The standard deviation of 0.66 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 1.44 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 2.16 shows that the respondents are in agreement.

The above statistics show that free delivery care is viewed as a major factor on reducing maternal motility 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 motility rate.

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

4.6 Free emergency medical services and maternal mortality rate

Respondents herein were asked to indicate whether Free Emergency Medical care influenced maternal mortality rate

Table 9 Free Emergency Care and maternal mortality rate

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

	Strongly agree	Agree	Un-certain	Agree	Disagree	Mean	Standard deviation
Free paramedic service ensure safe delivery	10%	45%	42%	3%	0%	2.38	0.724
Free ambulance service ensure successful deliveries	7%	40%	47%	8%	0%	2.61	0.733
Free emergency service for pregnant women ensure reduction in the number of death due to pregnancy related complications	4%	54%	38%	2%	0%	2.35	0.789
Composite Mean and Standard Deviation						2.45	0.748

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 2.61 showing and a standard deviation of 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 post-delivery care and maternal mortality rate

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

Table 10 Free post –delivery and maternal mortality rate

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

	Strongly agree	Agree	Un-certain	Disagree	Strongly agree	Mean	Standard deviation
Free counseling and a range of opinions for family planning early postnatal period is important to a mother quick recover	37%	34%	4%	15%	10%	2.27	0.995
Free physical test done on the mother postpartum ensure quick recovery	27%	37%	24%	2%	10%	2.31	1.186
Free medication given to the mother ensure quick recovery	17%	59%	0%	20%	4%	2.35	0.735
Composite Mean and Standard Deviation						2.31	0.972

Findings of the study on whether Free counselling and a range of options for family planning, in early postnatal period is important to a mother quick recovery; the mean 2.27 and standard deviation of 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 2.31 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 that free medication given to the mother ensures

quick recovery, 59% agree, and 24% disagree that Free medication given to the mother ensures quick recovery. Mean of 1.50 and standard deviation of 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 mortality rate has reduced due to free postnatal care.

The hospital maternity records stated that before introduction of the free maternal health care program 500 women and 2,400 newborns died yearly in the first week after birth. The KTRH 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 post-delivery care has significantly reduced maternal mortality rate.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

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

5.2 Summary of the 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 ensures safe pregnancy and 76% agreed that free physical testing ensures 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 normal delivery or Caesarean Section, thus the core aspect of free maternal health care 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 KTRH 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

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

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 KTRH 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.

KTRH 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 tests are also carried out to establish 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.

The study found that KTRH 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 in achieving safe motherhood: Use of free Skilled birth attendants 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. KTRH has employed enough qualified personnel to monitor labor in the health facility. This has a great impact on reducing maternal mortality. Although it's known that attending to a pregnant mother by a trained person in midwifery skill significantly decreases maternal morbidity and mortality. Kisii 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.

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 KTRH, 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 specialized clinical skills. The challenge of adequate assessment of progress is exacerbated for women who access services not specializing in maternity care. Similar to in-hospital care of women in labour, pre-hospital diagnosis and assessment of progress relies on highly skilled clinical judgment recognizing 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.

It was discovered that majority of the respondents highly appreciated free medication care given to make recovery swift and bearable. The hospital maternity records stated that before introduction of the free maternal health care 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 KTRH provided a number of services for PNC to all mothers: Assessing and checking for bleeding, checking temperature, supporting breastfeeding, checking the breasts to prevent mastitis, managing anemia, promoting nutrition and provision of insecticide treated bed nets, giving of vitamin A supplementation, Complete tetanus toxoid immunization, provision of counseling and a range of options for family planning, refers for complications such as bleeding, infections, or postnatal depression, counseling on danger signs and home care essential routine. Free postnatal care in public hospitals focuses on free counselling and a range of options for family planning, free gynecology services 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 health care 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 KTRH 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 psycho-social 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 findings

The study revealed that there is a significant relationship between free antenatal care and maternal mortality rate in Kisii 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 normal delivery or Caesarean 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. On the contrary, most paramedics were less experienced and less skilled to handle successful delivery procedures.

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 under-utilization 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 afterwords complications and ensure faster healing.

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

5.5 Recommendation of the study

The study finding unveiled a number of suggestions concerning the influence of free maternal health care services in Kisii 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 to put more emphasis on Patient satisfaction as a way of attracting more patients to deliver in public hospitals.

5.6 Suggestion for further study

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

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APPENDICES

APPENDIX I: LETTER OF TRANSMITTAL OF DATA COLLECTION INSTRUMENTS

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: DATA COLLECTION

My name is Duke Mose Nyangena, a student pursuing a Masters of Arts in project planning and management at the school of Continuing and Distance Education of the University of Nairobi.

I am undertaking a study on influence of provision of free maternal health care on maternal mortality rate in Kenya, a case of Kisii County .

This is part of requirement of the fulfillment of the course.

The attached questionnaire is therefore intended to seek your views on the various aspects of projects. Kindly fill it with all sincerity and honesty. The information you provide will be utilized purely for academic purposes and will be treated with utmost confidentiality.

Thank you for your cooperation.

Yours faithfully,

Duke Mose Nyangena

Reg no

L50/77478/2012

NYANGENA DUKE MOSE

APPENDIX II QUESTIONNAIRE

SECTION A

PARTICIPANT'S DETAILS

Highest education level

- None []
- Primary []
- Secondary []
- College []
- University []

Occupation

- Nurse []
- Doctor []
- Paramedic []

Work Experience

- 5 yrs. and below []
- 5- 10 years []
- 10-15 years []
- 15-20 years []
- 20-25 years []
- Above 20 years []

Section B Free prenatal care

1. Free Prenatal Care is given in public hospitals including KTRH. 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

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

SECTION C FREE DELIVERY CARE

Free Delivery Care is given in public hospitals including KTRH 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

Statement	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

Free Newborn Care is given in public hospitals including KTRH 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

Statement	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 Post-delivery care

Free Postnatal Care is given in public hospitals including KTRH, 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

Statement	1	2	3	4	5
Free counseling 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 II FOCUS GROUP DISCUSSION SCHEDULE

Section A: Free Prenatal Care

1. Does free tetanus vaccine ensure 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 B: 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 C: Free Emergency medical services

1. Does free paramedic services ensure 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 D: Free Post-delivery care

1. Does Free counseling and a range of options for family planning in early postnatal period is important to a mother's 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