UTILIZATION OF FREE MATERNITY SERVICES AMONG MOTHERS AGED 18- 49 YEARS IN NAKURU COUNTY, KENYA

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Q142/26858/2018

A PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN PUBLIC HEALTH SYSTEMS MANAGEMENT AND APPLICATION IN THE SCHOOL OF PUBLIC HEALTH AND APPLIED HUMAN SCIENCES OF KENYATTA UNIVERSITY

APRIL, 2022

DECLARATION

This Poject is my original work and has not been presented for a degree in any other University.

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This Project report has been submitted for review with my approval as University Supervisor.

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DEDICATION

This study is dedicated to my husband and children who cheered me along even when the journey got tougher.

ACKNOWLEDGEMENTS

I acknowledge my supervisor, Dr Joyce Kirui for wise counsel, supervision and support during the study. The other key persons who were instrumental in this study were my Kenyatta University programme coordinator Dr George Otieno and Alison Yoos who reviewed my work and gave their valuable contributions. I recognize the support I received from Grace Wanjau, IMPACT programme, Kenya and Dr George Biketi my supervisor from the Health Department, Nakuru County in the development of my research project and continuous encouragement during field attachment.

I take this opportunity to appreciate the Ministry of Health for the award of the scholarship and the Kenyatta University for offering a conducive environment for learning. I recognize the following institutions for their support and funding of my studies, Improving Public Health Management for Action (IMPACT), Nairobi, Kenya,Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), Atlanta, Georgia, USA, and African Field Epidemiology Network (AFENET),Nairobi, Kenya.

I recognize the County Government of Nakuru through the department of health and NACOSTI for their facilitation in their respective approvals of the research area.The respondents of this study were such great support for the success of this study and I take the opportunity to appreciate each one of them for unreservedly sharing the information that enriched the study area.

I take note of my family members, my husband and children for their support during my study period. All the great work and success wouldn't have been possible if it was not because of the enabling of the almighty God who has made everything beautiful at His timing

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ABBREVIATIONS AND ACRONYMS

ANC	Antenatal care
EPMM	Easily Preventable Maternal Mortality
FGD	Focused Group Discussion
FIGO	Federation of International of Gynecologists and Obstetricians
FMS	Free Maternity Services
GK	Government of Kenya
ICM	International Confederation of Midwives
ICN	International Council of Nurses
IPA	International Pediatric Association
KDHS	Kenya Demographic and Health Survey
KEMRI	Kenya Medical Research Institute
KII	Key Interview Informants
KM	Kilometers
MCH	Maternal Child Heath
MMR	Maternal Mortality Ratio
NACOSTI	National Commission for Science, Technology and Innovation
PNC	Postnatal Care
SBA	Skilled Birth Attendance
SDG	Sustainable Developmental Goals
SMAGs	Safe Motherhood Action Groups
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
UHC	Universal Health Coverage
WHO	Word Health Organization

DEFINITION OF OPERATIONAL TERMS

Advocacy Public support for a certain course of action or policy

Breadwinner Main source of income

Free maternity services A package of maternal services that include, family planning, antenatal care, delivery and postnatal care

Healthcare seeking behavior.Any action or inaction undertaken by individuals who perceive themselves to have a health problem or to be ill to find an appropriate remedy

Health System Comprises of organizations ,institutions and resources that contribute to improvement of health

Institutional factors Organizational facts that have an influence

Live birth Refers to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life

Maternal death The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from an accidental or incidental cause

Maternal health Refers to the health of a woman during delivery, childbirth and the postpartum period

Maternal morbidity Medical conditions in a woman caused by pregnancy,labour and delivery (up to 42 days post-delivery)

Maternal mortality ratio The number of women who die while undergoing the reproductive process per 100,000 live births in a given year

Mothers level of knowledge Facts or information and skills that have been acquired over time on FMS

Neonatal mortality The number of neonates who die between 0-28 days after birth in a year per 1000 live births

Policy Principle of action adopted

Quality maternal care The least of care accorded to all pregnant women and their newborn babies, and a higher level of care to those who need it; obtaining the best possible medical outcome of mother and baby; providing care which satisfies users and providers and maintaining sound managerial and financial performance

Skilled birth attendants Refer to people who have been trained and have competence and skills in midwifery in managing the normal deliveries, diagnose and manage or refer to obstetric complications

Utilization The extent to which a given group of people use a particular maternal health service in a specific period

Utilization of free maternity services Use of free delivery services by women during pregnancy at public health facilities

ABSTRACT

In response to sustainable development goal (SDG) 3,all countries were expected by 2030 to have improved maternal and neonatal health indicators.In Kenya,the hope of free maternity services (FMS) was to increase the demand for maternity health care services offered by certified health professionals.This,inturn would contribute to reversing MMR and neonatal mortality and improve the uptake of skilled birth attendance(SBA).Nakuru County has indicated poor maternal child health indicators as demonstrated by increased MMR,neonatal mortality and low SBA.Thus,this study aimed to determine and understand the utilization level of FMS among mothers aged 18-49 living in Naivasha Sub-County,Kenya.The research employed a cross-sectional and descriptive design that involved 392 women who utilized FMS 2018-2019.A mixed-methods approach collected quantitative and qualitative data through structured questionnaires,health records reviews,focus group discussions, and key informant interviews.The quantitative and qualitative data were analyzed by use of SPSS 20 and content analysis respectively.The results were further subjected to multiple regression analysis.The findings showed that over 80% utilized antenatal care, facility deliveries and postnatal care, but 68% of respondents utilized family planning. The mothers were found active in their first, second and third pregnancies in utilizing FMS followed by a sudden decline.The mothers preferred the public health facilities to the private, mission and NGOs.The significant findings influencing the utilization of FMS among the mothers were age (P=.004), the number of children (P=.000), age at first birth (P=.025), household income (P=.008) and residential area (P=000).The mothers in rural and periurban settings utilized the FMS than their counterparts in the urban areas.The mothers' level of knowledge on FMS was notably at 80%.The radio, television,health facility and community sources were significant with *(P*=.000) as effective sources of information for the mothers in the community.The decision makers consider age, the number of children, age at first birth, household income and residential area in formulation of FMS policies.Further,utilize relevant sources of information on FMS in the community.

CHAPTER ONE: INTRODUCTION

1.1 Background

The maternal mortality ratio(MMR), according to World Health Organization (WHO,2015) was estimated at 216 per 100,000 live births globally, with most of these cases occurring in low-income countries and attributed to preventable causes.The low income countries accounted for 99% of global maternal deaths with Sub-Saharan African registering 66% of these deaths (WHO,2015).Trends from 1990 to 2015 showed a decline of 44% in maternal mortality with an improved skilled delivery attendance (SBA) recording a rating of 73% (WHO, 2015).

The WHO strategies toward ending preventable maternal mortality (EPMM) was linked to sustainable development Goals (SDGs) 3 that focused on the reduction of maternal mortality and morbidity and improvement of care for women and children along the continuum of care (WHO, 2015).These strategies and interventions were aimed at increasing access to timely needed care services and addressing issues on gender and equity, and attainment of community involvement in program planning and improvement of health services (WHO,2015).

In response to SDG 3, all countries were expected, by 2030, to have improved MMR to 70 deaths per 100,000 live births, with skilled attendance to 70% at birth and child mortality to 25 deaths per 1000 live births (WHO, 2016). The neonatal mortality was to be reduced to at least as low as 12 deaths per 1000 live births (UNICEF, 2018).

The WHO with other partners defiition for a skilled health personnel or SBAs as health personnel who are trained in maternal and neonatal health care and possess the

competencies to provide care to an expectant mother during labour, delivery and the early postnatal period in a supportive environment (WHO, 2018).These SBAs are the doctors, nurses and midwives and according to WHO (2018),they are guided by set standards of practice contributed by professional training and regulation.The SBAs are expected to operate in an enabling environment with functional health systems that ensures adequate supplies and equipment,transportation and effective communication systems (WHO,2018).

Skilled birth attendance uptake, (WHO, 2017) has shown some improvement from 62% in 2000-2005 to about 80% in 2012-2017.Despite this progress, there was a variation of these achievements across the regions globally.Central and Southern Asia had improved from 40% to 77% while Sub Saharan Africa had over 50% coverage during the same period.According to WHO,(2017), the gains may have contributed to the decline of MMR in 1990-2015. The disparity in accessing the skilled personnel was majorly attributed to the socioeconomic status of the regions (WHO, 2017).

In a case study conducted in Kenya about primary health care systems, the out of pocket payment proportion of health expenditure in Kenya was found to be at 26 % (WHO,2017) and the proportion of households experiencing catastrophic health expenditure was at 12.7%,(Kenya Household Health Expenditure and Utilization Survey,2013).This shows that the majority of people in Kenya are faced with the possibility of sliding to poverty because they spent huge amounts of income on health care. The government of Kenya thus passed a policy on 1st June 2013 through a presidential declaration on free maternity services (FMS) (Jumma & Maina, 2014). The

implementation of this policy was to be operational at all levels of public health facilities ,from primary to tertiary (Juma & Maina, 2014). This was a strategy to improve access to maternal health care services care, and SBA,reduce maternal and neonatal mortality,alleviate poverty and achieve the millennium development goals (Pyone *et al.*, 2017).However, the implementation of FMS has faced challenges such as lack of clarity, inadequate involvement of stakeholders, and overstretched health facilities due to increased clientele seeking services (Tama *et al*,2017). In addition, shortage of staff was identified as an issue according to research conducted in Pondeni Maternity, Nakuru County, (Wamalwa, 2015).

The global agenda on the adoption and implementation of SDG 3 took into account the economic and social gap that exists in the world (WHO, 2017). According to this strategy, all countries were expected to reduce MMR, neonatal mortality and increase skilled birth attendance (SBA) to at least as low as 70/100,000 live births,12/1000 live births and SBA at 70% respectively.

1.2 Problem statement

In Kenya, MMR was at 362/100,000, and Nakuru County had 374/100,000 live births,(KDHS, 2014). Nationally, the neonatal deaths were 22/1000 live births ,while Nakuru county registered 20/1000 live births (KDHS, 2014). Nationally, utilization of skilled birth attendance (SBA) was rated at 62% (KDHS, 2014) while Nakuru County was at 51% (UNFPA,2014).According to Kenya Demographic Health Survey (2014) the utilization of family planning was 53.5% and antenatal care was rated 95.6 % respectively.Thus, there is still a glaring gap on utilization of skilled attendance in

Nakuru County as the set target is at 70%,as well as low family planning.This contributes to poor maternal health indicators.

The free maternity services were expected to create a demand for maternity health care services with the prospects that care users would access care at the health facility offered by competent health professionals. This, in turn, would contribute to reversing MMR and neonatal mortality. In Kenya, the utilization of free maternity services that are supposed to improve MMR, neonatal and SBA indicators show some glaring gap despite the implementation of FMS in all counties.

A study by Kamau (2016) examined the determinants for utilization of free maternal services in Kenya and found that the age of the mother at first birth, secondary education, higher education level, birth order, urban residence, poorer wealth quintile, middle wealth quintile, richer wealth quintile, richest wealth quintile, mass media and regions increased the probability of hospital delivery usage. Wairia *et al,(*2016) study examined the uptake of maternal health systems initiatives among mothers in Nakuru County,Kenya and revealed that the level of education was the key predictor of awareness of maternal system initiatives.Ngesa *et al*,(2021) study investigated the utilization of free maternity services among women of child bearing age in Machakos County, Kenya and found that factors that were associated with utilization of FMS included marital status, parity, distance from health facility, services offered during labour, treatment of mothers by healthcare workers during labour, provision of adequate food, quality of service and cleanliness of the maternity ward. The findings of this study indicated that a client's characteristics like age, education, religion, marital status and

employments have significant influence on the awareness and the level of education was the best predictor of awareness of maternal health systems initiatives (Ngesa *et al.*,2021).

From the above mentioned studies, it was clear that there exist contextual, conceptual research and methodological gaps that the current study would focus. This study therefore, sought to examine the utilization of free maternity services among mothers aged 18- 49 years in Nakuru County, Kenya.

1.3 Justification

Kenya's maternal mortality rate was 488 per 100,000 live births (KDHS, 2009), compared to 230 per 100,000 in other developing countries and 16 per 100,000 in developed countries (WHO, 2014), while the maternal mortality rate in Nakuru County, one of Kenya's 47 counties, was 374 per 100,000 live births (UNFPA, 2014). This trend is alarming, and immediate action is required. Interventions aiming at improving maternal health services in the county are needed to strengthen the health care systems. There was little information at the county about the level of knowledge of various initiatives among mothers.The factors that influenced the use of maternal health system initiatives were unknown,which hampered the development of particular measures to address maternal health sevices.Despite evidence indicating that there were programs for encouraging maternal health services uptake at the county.The lack of this essential information still remained a challenge as to why services were not being used. As a result, it was clear that crucial information for improving uptake was missing. The study was based on the lack of this critical information and the deterioration of maternal health indices. Naivasha Sub-county was identified as the appropriate study location

due to poor maternal-child indicators and its population is composed of the rural, urban and peri-urban.

1.4 The research questions

i. What is the level of utilization of free maternity services among mothers aged 18-49 in the Naivasha Sub-County?

ii. What are the socio-demographic factors influencing the utilization of free maternity services among mothers aged 18-49 in the Naivasha Sub-County?

iii. What is the mothers' level of knowledge on free maternity services among mothers aged 18-49 in the Naivasha sub-county?

iv. What institutional factors influence the utilization of free maternity services among mothers aged 18-49 in the Naivasha Sub-County?

v. What health system factors influence the utilization of free maternity services among mothers aged 18-49 in the Naivasha Sub-County?

1.5 Research Hypotheses

1.5.1 Null hypothesis

The socio-demographic factors, mothers' level of knowledge, institutional factors and health system factors have no influence on utilization of free maternity services among mothers aged 18-49 in the Naivasha Sub-County.

1.5.2 Alternative hypothesis

The socio-demographic factors, mothers' level of knowledge, institutional factors and health system factors have influence on utilization of free maternity services among mothers aged 18-49 in the Naivasha Sub-County.

1.6 Research Objectives

1.6.1 The broad objective

To assess the utilization of free maternity services among mothers aged 18- 49 in Nakuru County.

1.6.2 Specific objectives

i. To determine the utilization level of free maternity services among mothers aged 18-49 in Naivasha Sub-county.

ii. To determine socio-demographic factors influencing the utilization of free maternity services among mothers aged 18-49 in Naivasha Sub-county.

iii. To determine the mothers' level of knowledge on free maternity services among mothers aged 18-49 in Naivasha Sub-county.

iv. To determine institutional factors influencing the utilization of free maternity services among mothers aged 18-49 in Naivasha Sub-county.

v. To determine health system factors influencing the utilization of free maternity services among mothers aged 18-49 in Naivasha Sub-county.

1.7 Limitations and delimitations

The administration of household questionnaires was conducted during the day and this would limit the participation of the anticipated respondents that worked 8am- 5pm.This challenge was managed by an extension time of time for those households that had been enlisted in the study.

Recall biases was identified as one of the likely limitation.This was addressed by involving research participants who had utilized free maternity services in the last two

years. The other limitation was an uncooperation from the respondents.The gatekeepers and research assistants from the community were used to enhance support and cooperation during this study.

1.8 Conceptual framework

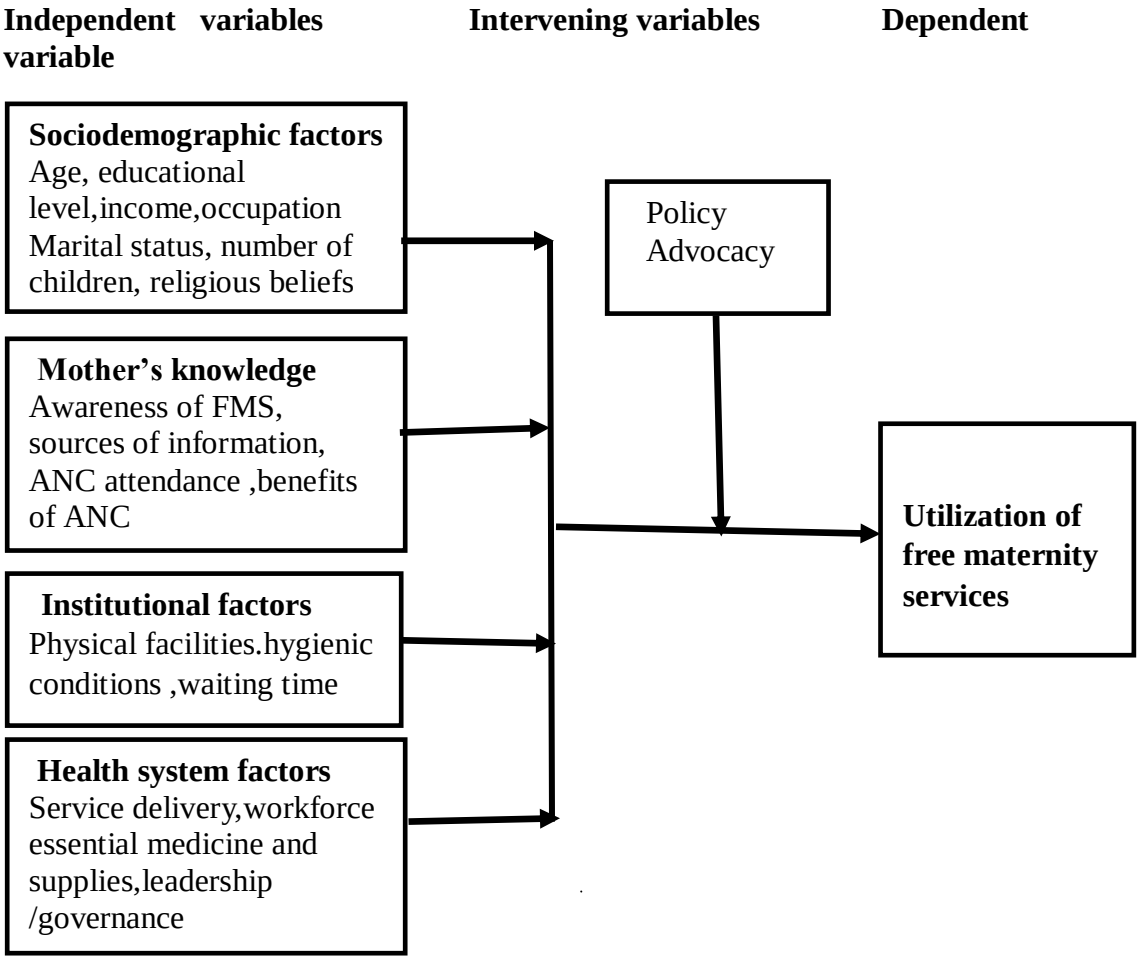

Figure 1.1 Conceptual framework

Source: Adopted and modified from model of perception on quality and acess, (Owiti *et al.*, 2018)

1.9 Significance of the study

The study was to provide feedback from the community who were the users of the maternal health care services. The health care providers would benefit from the study findings in the improvement of services at the county. The study was also intended to inform decision making and policy in aspects of the utilization of free maternity for skilled birth attendance in Nakuru County. The study was to form a baseline for future study and add to the body of knowledge in Public health.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter entails a literature review of some existing researches on the area of study that is globally, regionally and nationally while ensuring that the study won't be a replication of what has already been done.The chapter also provides, summary of the literature gaps and theoretical framework.

2.2 Implementation of free maternity services

The UHC is a key component of a sustainable goal that gears to "ensure healthy lives and promote the wellbeing of all ages", by accessing quality care services they need without going through financial constraints (WHO, 2015). Lesotho in tackling the challenge of high maternal and neonatal mortality rates introduced the removal of a user fee to facilitate improved access to maternity care services and reduction of neonatal mortality (Steele *et al.*,2019). This had a positive outcome according to Steele *et al.*, 2019), the deliveries increased by 49% and the neonatal deaths decreased from 4.8 to 1.3 deaths/1000 live births.

Kenya is considered to be among the 10 countries globally with the highest burden of maternal mortality (KDHS, 2014). The country loses between 500-600 mothers every year due to pregnancy and birth complications. There has been a reduction of MMR from 590 in the 1990s to 362/100,000 live births (KDHS,2014). The report indicates that 80% of the MMR are preventable (KDHS, 2014). This led Kenya to adopt the maternal and perinatal death surveillance and response (MPDSR) guidelines of 2016. This was a quality improvement strategy for the identification of maternal mortalities

that occur, causes of death and linked factors and actions are taken to decrease the deaths (Smith *et al.*, 2017). For the success of this initiative, all the stakeholders are supported and coordinated at all levels of service provision that ensures 'no name, no blame environment' (Smith *et al.*, 2017).

The introduction and rollout of the FMS strategy by the Government of Kenya ensured that the maternity services were free at all public health facilities, according to the health policy of 2013. According to Pyone *et al.*,(2017), the policy was intended to reduce maternal and neonatal deaths and ease the financial burden incurred in accessing skilled and quality maternity care services. For every health facility delivery, 2,500 was reimbursed to the dispensary or health Centre, 5,000 to a public hospital and 17,000 to a tertiary facility (Maternal Newborn Health Care in Kenya, 2013).

A study by Wamalwa (2015) examined the implementation challenges of free maternity services policy in Kenya: the health workers' perspective. This was a cross-sectional descriptive study carried at the Rift Valley Provincial General Hospital and Bondeni maternity. All the staff who work at Bondeni Maternity including nursing officer in-charge and Medical Superintendent of the facility were included in the study.A total of 110 respondents were sampled. A questionnaire and interview guide were used to collect data.The study found that the major implementation challenges include inadequate supplies, inadequate funding, staff shortage, lack of motivation among health workers, overwhelming workload and abuse of services by clients.

Pyone *et al.*,(2017) study examined the implementation of the free maternity services policy and its implications for health system governance in Kenya. Qualitative research was carried out using semistructured interviews with 39 key stakeholders from six counties in Kenya: 10 national level policy makers, 10 county level policy makers and 19 implementers at health facilities. Participants were purposively selected using maximum variation sampling. The study results were that lack of clarity about the new policy (eg, it was unclear which services were free, leading to instances of service user exploitation), weak enforcement mechanisms (eg, delayed reimbursement to health facilities, which led to continued levying of service charges) and misaligned incentives (eg, the policy led to increased uptake of services thereby increasing the workload for health workers and health facilities losing control of their ability to generate and manage their own resources) led to weak policy implementation, further complicated by the concurrent devolution of the health system.

2.3 Utilization level of free maternity services

In a study conducted in three counties that were considered to have poor maternal and child health indicators, Turkana, Wajir and Garissa following the rollout of free of maternity service showed notably improved facility utilization for ANC, SBA and live births (Lang'at *et al.*, 2019). The ANC, attendance, facility deliveries and livebirths were rated to have improved by 89%, 97% and 98% respectively (Lang'at *et al.*, 2019).

Implementation of FMS as reported by Tama *et al.*,(2017) was faced with such challenges as a lack of clarity and inadequate involvement of stakeholders. The policy was supposed to improve the antenatal visits, skilled deliveries and postnatal care

visits,but instead focus was directed to deliveries, thus increasing facility deliveries without the capacity to cope with the workload and in turn compromising the quality of services (Tama *et al.*, 2017).The increased use of maternity services overstretched the health system causing mothers to share beds, the health personnel were overworked and their morale was reduced leading to frequent burnout (Tama *et al.,* 2017).

Abolishment payment of fees for maternity services in Kenya (Gitobu *et al.,* 2018) was found to directly increase public health deliveries indicating that cost hindered many clients from accessing skilled birth attendance. Despite the strides made in the introduction of free maternity services, (Gitobu *et al.*,2018) observes that there is no significant change in maternal and neonatal mortalities and Tunçalp *et al.,* (2015) add that preventable death moved from the community to the health facilities which was linked to poor quality of care given to the mother and child.

Owiti *et al.,*(2018) study examined the utilization of Kenya's free maternal health services among women living in Kibera slums: a cross-sectional study. This was a cross-sectional study done on 396 women who delivered between 2014 and 2015. Interview questions addressed socio-demographic characteristics, perception of quality of care in public health facilities, awareness of the FMS Program, antenatal care (ANC) and delivery service utilization. The study found that factors that favoured the Free Maternal Service uptake included a positive perception of the public health facility, living within close proximity, learning about the Program from a support group and a short waiting time before being examined by the doctor. On the other hand, safe delivery, quality of service, accessing a health facility on foot, ANC attendance at a

private and a non-profit health facility were associated with low uptake of the free maternal services.

Mukabana (2016) study examined the effects of free maternity program on utilization of maternity services and challenges at Kakamega county Cospital, Kenya. Hospital based cross-sectional descriptive design involving both quantitative and qualitative methods were employed.Two hundred and twenty three (223) post natal mothers selected systematically were interviewed on client satisfaction and challenges. Challenges facing the program were also sought from health care providers and the administration. Records pre-post program periods were reviewed to compare utilization of services. Questionnaires and interview schedules were the tools of data collection. Independent T-test and chi-square were used in analysis which was done by use of SPSS version 20. P of <0.05 was considered significant. Qualitative data was analyzed in themes. There was a significant difference in mean number of deliveries pre and post free maternity program periods (p=0.001). However, there was no difference in the number of new ANC clients and postnatal attendance (p=0.790 and p=0.449) respectively.

2.4 Socio-demographic factors on utilization of maternity services

In determining factors that affected the use of ANC services in Ethiopia, Tekelab *et al.*,(2019) reported that the level of education, income, access to health care and residential location influences utilization of ANC. Apart from the educational level (Orwa *et al.*, 2019) found that early enrollment to antenatal care service contributed to facility deliveries and improved utilization of postnatal care. There were gaps that the study identified that need further study such as demographics, societal and cultural

factors that affect maternal care services that would contribute significantly (Orwa *et al.,* 2019).

A study conducted in NCheu District, Malawi by Chimatiro *et al.* (2018) outlined some barriers that inhibit women from starting antenatal visits.The barriers were largely contributed by cultural beliefs and socio-economic factors (Chimatiro *et al.*,2018). The expectant women had to rely on marriage counsellors from the husband side (Chimatiro *et al.*, 2018) to advise them when to start the antenatal clinic. Other barriers included, pregnancy being held in secrecy, women delayed antenatal attendance because they were waiting for new clothes, spouses refusal to accompany them to the clinics and the health workers rudeness (Chimatiro *et al.*, 2018).

The utilization of skilled attendants during birth was closely associated with the husband's involvement from the antenatal care period as observed by Teklesilasie and Deressa (2018). Apart from social support, this strategy provides an opportunity for them to plan and agree on the appropriate place where the mother will deliver the baby (Teklesilasie & Deressa, 2018).

Rurangirwa *et al.* (2017)study conducted on the determinants of poor utilization of ANC services found the older, single, divorced, and widowed women who lacked social support were not able to attend the four recommended ANC visits.

Chamileke (2017) study examined the socio demographic determinants of maternal health service utilization among women 15 to 49 years in Zambezi District in northwestern Zambia. Across sectional study of the utilization of maternal health

services was carried out among 400 women of child bearing age from 15 to 49 years in Zambezi district in north-west Zambia after having received ethical approval from the Eres Converge research ethics committee. Multistage systematic sampling was done from the 12 clinics' catchment areas in the district. The results showed that 38.5 percent (154) of the women received antenatal care, 32.3 percent (129) of the women received delivery services while 48.3 percent (193) received postnatal care services. In the logistic regression model, reduced income level was associated with decreased use of antenatal care (OR=0.1, P<0.05). In assisted delivery, increased distance to the health facility was associated with reduced use (OR=0.1, P <0.05). In postnatal care, reduced education level of the respondent was found to be associated to decreased use of postnatal services (OR=0.51, P<0.05). Increased maternal age was associated with increased utilization of maternal health services (OR=2.1, P<0.05).

Nzioki *et al.,(*2015)study investigated the socio-demographic factors influencing maternal and child health service utilization in Mwingi: a rural semi-arid district in Kenya.This was a descriptive cross-sectional study. Data was collected from a sample of 416 women. Variables of interest were; socio-demographic variables and selected Maternal,Child Health (MCH) service utilization indicators. Binary logistic regression model was used to assess the influence of socio demographic characteristics on MCH service utilization. The study established that Women with secondary education and above, women in households earning more than 1 US Dollar in a day and women in employment or operating a business were more likely to utilize MCH services.

2.5 Mother's level of knowledge and use of maternity services

In Zambia, a group known as 'Safe Motherhood Action Groups' (SMAGs) (Jacobs *et al.*, 2018) was introduced to strengthen the community-based interventions in remote and poor districts to increase maternal and neonatal health care coverage. This was guided by local knowledge structures and setting that supported both the volunteers to collaborate with the health workers. The introduction of SMAGs was associated with an increase in ANC, SBA and PNC, measures that were used to estimate the improved maternal and newborn health interventions coverage. In examining factors influencing ANC utilization among the pastoralists in Ethiopia, a study by Tekelab *et al.* (2019) indicated that those visited by the extension health workers had a higher likelihood of receiving ANC services.

A study by Pica and Sandberg (2018) conducted in Western Highlands of Guatemala on the perceptions and future use of maternity care services among women who accessed skilled and non-skilled delivery postulated that experiences during birth have greatly impacted future decisions on where to seek maternity care services. The study findings indicated that perceptions of quality care guide one's future seeking behaviour. Those who felt that they did not receive attention or were abused were more likely to avoid seeking maternity services.

Nuamah,*et al* (2019) study examined the access and utilization of maternal healthcare in a rural district in the forest belt of Ghana.An analytical cross-sectional study, involving 720 pregnant women systematically sampled from antenatal clinics in five sub-districts was conducted from February to May 2015 in the Amansie-West district. Data on

participants' socio-economic characteristics, knowledge level and access and utilization of maternal health care services were collected with a structured questionnaire.The study found that the mothers' knowledge level of pregnancy emergencies and newborn danger signs was low. Socio-economic characteristics and healthcare access influenced the utilization of maternal healthcare.

According to Oberoi *et al.*(2016), health-seeking behaviour determines the action an individual takes once they perceive they have a health problem. As much as media has a great role, Oberoi *et al.,* (2016) observe that the setting in which one lives, economic incentives and free ambulance services contribute greatly.

In a study conducted in Kibera slums, the women who utilized public health care services were rated higher on free maternity services than those women who attended and used health care services at the private or NGO health facility (Owiti *et al.,* 2018). Sensitization on the FMS program according to Owiti *et al.* (2018) was not linked to the use of maternity services in public health facilities. Ngesa (2021) study examined the utilization of free maternity services among women aged 18-49 years in Machakos County, Kenya. A cross sectional study was carried out in Machakos County. A sample size of 421 postnatal women was proportionally selected from each ward through systematic random sampling and interviewed.The study mainly focused on the individual client characteristics, the client related factors and organizational factors related to utilization of free maternity services, which encompassed use of both quantitative and qualitative data collection methods. The study found out that women were aware of free maternity services being offered in government facilities. The study

however found no association between awareness and utilization of free maternity services.

2.6 Institutional factors and use of maternity services

The study conducted in Pakistan on uptake of ANC,Sahito and Fatmi(2018)observed that contextual factors need consideration in planning for maternal care services. Women education and urban areas had a positive influence on the utilization of ANC services, while there were other inequalities in various provinces that needed to be addressed (Sahito & Fatmi, 2018).

Antenatal care services according to Tekelab *et al.*, (2019) empowers women through education, and decision making as key factors that inform the use of antenatal care. Other determinants to the uptake of ANC include were not limited to access to these services, partner's participation, mass media exposure, advocacy of ANC in media (Tekelab *et al.,* 2019).

Disparity still exists in the quality of essential maternal care in the developing countries in the handling of large volumes of clients and performance of surgical operations such as caesarian sections (Kruk *et al.*,2016). This was found out in a health survey assessment carried between 2006 and 2010 in health facilities across 5 countries namely Kenya, Namibia, Rwanda, Tanzania and Uganda. The findings had 90% of the health facilities offering obstetric services with no capacity for caesarian section (Kruk *et al.*, 2016) and 44% of all facilities that were assessed were at primary level and this where high volumes of clients were found. This kind of scenario was unlike what happens in the developed world, where caesarian section capacity is a requirement for all delivery facilities with an exception of birth centres that are within the proximity of a hospital

and health care facilities in remote areas (Kruk *et al.,* 2016).

2.7 Health system factors and utilization of free maternity Services

The Kenya Medical research institute (KEMRI) and Welcome Trust policy brief on free maternity services in Kenya highlighted the gains and challenges of the policy following its implementation (Tama *et al.,* 2018). The brief on free maternity in Kenya pointed to the fact that the strategy increased the demand for services at the health facilities (Tama *et al.,* 2018). In response, this led to staff burnout and compromised quality of care services at the facility level (Tama *et al.,* 2018) since there were no measures put in place to address staffing levels, adequate supplies and equipment, inconsistent disbursement of funds to health facilities and weak governance and accountability structures.

Pyone *et al.* (2017) findings on the implication of the policy on the health system indicated that there was an inconsistency of policy with those existing in the health facilities.The patients covered by the same policy were still buying the medicines or other supplies because the facilities were not well equipped for the stated services (Pyone *et al.,* 2017). The health workers as observed by Pyone *et al.* (2017) would likely be reluctant and not be held responsible because the government is supposed to provide them with tools and supplies to facilitate their operations. The processes that were followed during reimbursement of the fees were lengthy and had affected the health system operations (Pyone *et al.,* 2017).

In examining the health workers views in a study carried in Nakuru County referral hospital and Bondeni maternity in Nakuru,(Wamalwa,2015)established that shortage of

staff, an overload of work and lack of motivation among staff key outstanding issues that occurred after the roll out of FMS.

2.8 Summary of literature review and existing gaps

The empirical review highlights studies that have been carried related to how sociodemographic factors, mother's knowledge, institutional factors and health system factors influences the utilization of free maternity services. However, these studies were mostly done in international context and very few locally done under different methodologies.

In addition, these studies present both contextual and conceptual research gaps that the current study will seek address. For instance, a study by Wamalwa (2015) examined the implementation challenges of free maternity services policy in Kenya. However,Rift Valley Provincial General Hospital and Bondeni maternity presenting a contextual gap.

Owiti *et al*,.(2018) study examined the utilization of Kenya's free maternal health services among women living in Kibera slums. However,the study used only qualitative data presenting a methodological gap.

Chamileke (2017) study examined the socio demographic determinants of maternal health service utilization among women 15 to 49 years in Zambezi District in northwestern Zambia.However, the study was done in Zambia and therefore, the findings may not be applicable in the Kenyan context.

Ngesa (2021) study examined the utilization of free maternity services among women aged 18-49 years in Machakos County, Kenya. However, the study was a cross sectional study carried out in Machakos County thus presenting a contextual gap.

2.9 Theoretical Framework

The Behavioural Model on Health Care Service Utilization led this research, which depends solely on non-cognitive elements to motivate or lead to health-seeking behavior (Phillips, *et al*., 1998). The process of utilizing health-care services is placed in a context, such as in the setting of socio-cultural and economic fundamentals.

Anderson presented this concept in 1968, and Pokhrel and Sauerborn (2004) adopted it in their study.Predisposing factors (such as age,gender, occupation,and education); enabling factors (such as income, home goods); and need factors are all part of the model (such as perception of illness and service indicators). According to Pokhrel and Sauerborn (2004), this model is based on characteristics that influence decision-making, such as economic circumstances, travel distances to health facilities , degree or level of education, individual satisfaction with past services used, and perceived service quality.

Prosser,(2007), on the other hand, identifies additional cultural, social, organizational, environmental, geographic,and economic factors that appear to affect people's health and are sometimes seen as the study's prerogative. Individual, household, and health-care system factors are all taken into account (Pokhrel & Sauerborn, 2004).

According to Solomon (2005), social, cultural, political, and economic factors influence health seeking and care utilization as seen by the individual and as defined by the community. In this situation, free maternal health care services in connection to consumption by pregnant women entail a type of health-care utilization analysis that leads to an understanding of the role of social determinants of health.

CHAPTER THREE:METHODOLOGY

3.1 Introduction

The chapter presents the research design, location of the study, study population, sampling techniques and sample size, data collection instruments, pretesting, data collection, data analysis methods and logistical and ethical considerations.

3.2 Research design

A cross-sectional research design was utilized in this research used both qualitative and quantitative research methods were employed. The approach was preferred because it ensure data was collected to make inferences on the entire population at a point in a given time.

3.3 Variables

3.3.1 The independent Variables

Socio-demographic such as age,education level,income,occupation,marital status,number of children and religious affltion.The mother's level of knowledge included information on the awareness of FMS,sources of information,ANC attendance while institutional were physical facilities,hygienic conditions and waiting time.The health system factors were service delivery,workforce,essential medicine and supplies and leadership.

3.3.2 The intervening variables

These variables were policy and advocacy.

3.3.3 The dependent variable

The utilization level of maternity services was the dependent variable of the study.

3.4 Location of the study

The location of the study was Naivasha Sub-county, Kenya. Naivasha sub-county is one of 11 constituencies in Nakuru County, Kenya. The focus was on the community living within the eight (8) wards, the sub-county covers an area of 1685.8 KM^2 with a population of 253,224 and among these 62,804 were mothers aged 18-49 years. The sub-county covers a large area with a high population with major economic activities on agriculture, tourism and financial services. The sub-county has 21 public health facilities, including 1 referral sub-county hospital, 4 health centres and 16 (except 1 in maximum GK prisons) dispensaries that offer maternal health care services.

3.5 Study population

The study population for this study comprises all mothers aged 18-49 years of childbearing in Naivasha Sub-county. The target population were mothers aged 18- 49 living in the Nakuru County. Inclusion criteria were mothers aged 18-49 years, who had used free maternity services and could agree to participate in the study.Those of ill-health during the study period were excluded from participation in the study. The size of the study population was 62804 respondents who were drawn from 8 wards including; Biashara, Hells gate, Lakeview, Maimahiu, Maella, Olkaria, Naivasha East and Viwandani.

3.6 Sampling techniques and sample size

Sampling design determines cases assessment and plans how a sample is drawn (Cooper and Schindler, 2014). The sampling technique includes sampling frame and sample size determination.

3.6.1 Sampling technique

A multistage sampling approach was used to obtain a sample of 400 respondents.The 8 wards of the Naivasha sub-county were purposively selected because of the need for all of them to be included in the research.Systematic sampling was then employed to get the proportionate representation from the 8 wards and in this case. Simple random sampling was then used to get a representation of villages, households and eventually the individual participants.

At the household level, where a woman had given birth to more than one child in the last 2 years, data from the last delivery was used. In cases where there were two or more qualified mothers for the research, balloting was used to identify the participant.

For additional information, focused group discussion and key informants' interviews were applied in this study. Purposive method was used to identify the focus group representatives that included the community, frontline health workers and the health administrators. These were key persons who were consumers or stakeholders who were well informed on maternal and child care services at the sub-county.

3.6.2 Sample size determination

The sample size was estimated by use of Fischer's *et al.* (1998) formulae and was adopted because the population used was more than 10,000 people.

$$n = \frac{Z^2 p(q)}{d^2}.$$

Where n= Sample size (population > 10,000)

Z= Normal deviation at confidence interval 95% (1.96)

p= Proportion of population with desired characteristic (50%)

q=Proportion without desired characteristic

d= Degree of precision (0.05)

$n= (1.96^2) (0.62) (0.38)/0.05^2 = 363$

P was the utilization of free maternity services for skilled deliveries. In Kenya, SBA is at 62%.

A 10 % of non-response rate was applied, 10% of 363= 36.3

n= 363 +36.3= 399.3 i.e. approximately = **400**.

3.6.3 Sampling frame

According to Saunders *et al*., (2016), a sampling frame details a list of items in the population. For this study, they were drawn from 8 wards of the Sub-County. Confidentiality of the names of the participants was ensured. The sample size was 400 respondents as presented in Table 3.1.

Table 3.1: Sample size

Wards	Type	Mothers Aged 15-49	The proportion of sample size
Biashara	Rural	4,797	30
Hells gate	Peri-urban	10,986	70
Lakeview	Peri-urban	5,627	35
Maimahiu	Peri-urban	8,349	53
Maella	Rural	7,713	49
Olkaria	Rural	7,128	45
Naivasha East	Rural	5,852	37
Viwandani	Urban	12,752	81
Total		**62,804**	**400**

3.7 Data collection instruments

A cross-sectional survey data was collected by the use of questionnaires and interview guides for FGD and KIIs.Quantitative data was collected by the use of a questionnaire in appendixV, administered by trained research assistants.Qualitative data was collected by the use of focus group discussions (FGD) in appendix VI and key informant interviews in appendix VII respectively.

3.8 Pretesting

This was done by administering the study tools on a small group with similar characteristics of the population and also implementing free maternity services policy in Nakuru County. Five per cent (5%) of the sample size of 400 that translates to 20 questionnaires were pretested. This was to test the instrument's comprehensiveness, relevance, acceptance, and facilitate its improvement before the study commences. For this study, the London ward in Nakuru west sub-county was used to pretest the study tools because it shares the similar characteritics with the study targeted population.

3.8.1 Validity

Henseler *et al.,(*2015) assert the different features that need to be reviewed to substantiate the validity of a research tool. Face validity was based on the reasonability of a measure or procedure anticipated by the researcher. Zikmund *et al.*(2013) stipulate construct validity which examines the operationalization of the variables in harmony with the theoretical framework and the recommended measuring process. Lastly, content validity regards the level to which the proposed measures cover the anticipated scope based on the situation of the study and this is usually assessed by experts in the field.

Face validity of the questionnaire was determined by involving the expert judgement from the supervisor to establish as well as the similarity both to the theoretical framework and conceptual framework developed for the research. For this study, the supervisors gave input and feedback that greatly informed the measures of the constructs. For content validity, the questionnaire was evaluated by two randomly selected health officials from the Naivasha sub-county who assisted in establishing whether the questions posed were clear, meaningful and concise.

3.8.2 Reliability

The reliability was tested by evaluating the internal consistency collected by the use of Cronbach's Alpha. The Cronbach's Alpha test was recommended where questions have several possible options for responses as was the case for the questionnaire used in the study which required responses using the 5-Point Likert scale (Gravetter & Forzano, 2017). Cronbach's alpha was computed by correlating the score for each scale item with the total score for each observation (usually individual survey respondents) and then compared it to the variance for all individual item scores. The rule of thumb for Cronbach's Alpha was evaluated as indicated in table 3.2 below.

Table 3.2: Rule of thumb for Cronbach's Alpha

Cronbach's alpha (α)	**Internal Consistency**
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Source: George and Mallery (2010)

The Cronbach's Alpha coefficient is a value ranging between zero to one and the closer the value is to one, (Zikmund et al., 2013). The rule of thumb table for interpreting Cronbach's alpha for Likert scale questions pretesting results are captured below.

Table 3.3: Reliability test results

Variables	Sections	Cronbach's Alpha	*N* of Items	Comments
Utilization level of free maternity services	Sec B: Q12A to Q14E	.727	11	Reliable
Mother's knowledge level	Sec C: Q15 to Q19	.714	5	Reliable
Institutional factors	Sec D: Q20 to Q25	.866	6	Reliable
Health system factors	Sec E: Q26 to Q32	.816	7	Reliable
Combined variables of the study	Sec B: Q12A to Sec E: Q32	.781	28	Reliable

The results in Table 3.3 indicates that Cronbach's alpha values for the constructs under investigation possessed high-reliability standards. The Cronbach's Alpha value for the combined variables of the study was 0.781. A value greater than 0.9 is considered to have excellent internal consistency. Considering that Alpha values of 0.7 are normally used as a minimum measure of internal consistency and also considering that lower coefficients have been used in some studies, the fact that all sections of the pilot questionnaire had values higher than 0.7, the tool was considered to be very reliable (Hair *et al*., 2015).

3.9 Data collection

The primary data in this study were collected from 400 mothers who were 18 years to 49 years old. The questionnaires were administered face to face by use adroid phones and transmitted via goggle doc link.The researcher recruited 14 enumerators who assisted in online data collection to fastrack the process within two days. The researcher

will train the enumerators in advance and will remain available to clarify any questions that will come up during the administration of the questionnaires. The online questionnaires were administered to respondents online by research assistants by use of android phones. The enumerators administered the questionnaires from 8 am to 5 pm for the days that had been allocated for exercise.

3.10 Data analysis methods

The quantitative data was prepared, coded and entered into a data analysis tool, SPSS version 20, to facilitate data analysis.Data cleaning was done by removing irrelevant or duplicate observations ,filter the outliers and manage missing data. Generation of frequencies was used to summarize the categorical,nominal,and ordinal data. An appropriate cross tabulation was done to quantitatively analyse the relationship between multiple variables.

The results were subjected to regression analysis to establish the extent of relationships between variables. Whereas, the qualitative data were analyzed by use of established themes. The summarised reports were generated using descriptive statistics and presented in tables, charts and graphs.

3.11 Logistical and ethical considerations

The study sought to maintain the high ethical considerations, in line with NACOSTI guidelines together with obtaining required approvals from the postgraduate school, Kenyatta University, obtaining formal consent from the respondents. The participants were briefed on the importance and purpose of the study and assured of privacy. The respondents were at liberty to withdraw from the research at any point, for various reasons. Follow up contact details were given to them upon request.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents results with their order of presentation corresponding to the order of the research objectives. The results include socio-demographic information of the respondents; the results on the utilization level of free maternity services; socio-demographic factors on the use of free maternity services; mothers' level of knowledge; institutional factors and the health system factors influencing the use of maternity services. To conclude, the research depicts the summary of the results obtained.

4.2 Response Rate

This study administered 400 questionnaires, interviews involving 8 people during focused group discussion (FGD) and 1person during key informant interviews (KII). Out of the 400 questionnaires administered with a response rate of 98%. Focus group discussion was at 100% while the key informant interview response was at 50%. The study results are presented in narrative texts, tables, figures and charts.

4.3 Social Demographic Information

The study established information on the respondents' age, their level of education, their number of children, their age at first birth, their marital status, their occupation, total monthly income, family breadwinner, their residential place, number of years lived in the community, and their religious affiliation

Table 4.1: Sociodemographic characteristics of the respondents

Variables	**Frequency(%)**
Age(years)	
18 to 25	98(24%)
26 to 30	90(23%)
31to 35	90(23%)
36 to 40	82(21%)
41 to 45	24(6%)
> 45	8(2%)
Level of education	
None	8(2%)
Primary	149(38%)
Secondary	192(49%)
College	43(11%)
Number of children	
One	86(22%)
Two	145(37%)
Three	90(23%)
Four	32(8%)
Five and above	39(10%)
Age at first birth (Years)	
< 18	62(16%)
18 to 29	290(74%)
26 to 30	32(8%)
31 to 35	8(2%)
Marital status	
Single	55(14%)
Separated	31(8%)
Widowed	8(2%)
Married	294(75%)
Occupation	
Employed	59(15%)
Self-employed	200(51%)
Housewife	106(27%)
None	27(7%)
Monthly income (Ksh.)	
< 10,000	298(76%)
10 ,000 to 20,0000	63(16%)
20,001 to 30,000	16(4.2%)
30,001 to 40,000	6(1.5%)
40 ,001 to 50,000	8(2%)
50,001 to 601	1(0.3%)

Bread winner	
Self	87(22%)
Husband	290(74%)
Others	15(4%)
Residential area	
Urban	78(20%)
Peri-Urban	153(39%)
Rural	161(41%)
Years lived in the community	
< 10	172(44%)
11 to 20	90(23%)
21 to 30	67(17%)
31 to 40	31(8%)
41 to 50	12(3%)
>50	20(5%)
Religious affiliation	
Christian	372(95%)
Islam	20(5%)

The results from the study indicated the majority of the participants were aged 18-29 years, 49% of them had secondary level of education,37 % had two children,74 % of the respondents had their birth between 18-25 years.75 % of the respondents of the study were married.51% of the respondents were self-employed with 76% of the respondents were earning below 10,000 Kenyan shillings. On the breadwinners,74% of the respondents indicating their husbands. The rural residential place was highly rated at 41% followed closely by the peri-urban at 39% about the residential areas of the respondents and, 44% of these respondents had lived in the community for not less than ten years. The research results indicated that most of the participants were Christians at 95%.

4.4 Utilization level of free Maternity Services

This section provides the findings on the utilization level of free maternity services, which was the first objective of the study. The utilization level of free maternity

services information was established by asking each respond the services they sought during their last pregnancy. Figure 4.1 show that the majority of respondents (97%) used ANC, 95% utilized delivery services, Family planning was lowly utilized at 68%, while the rest of the services were rated above 80%.

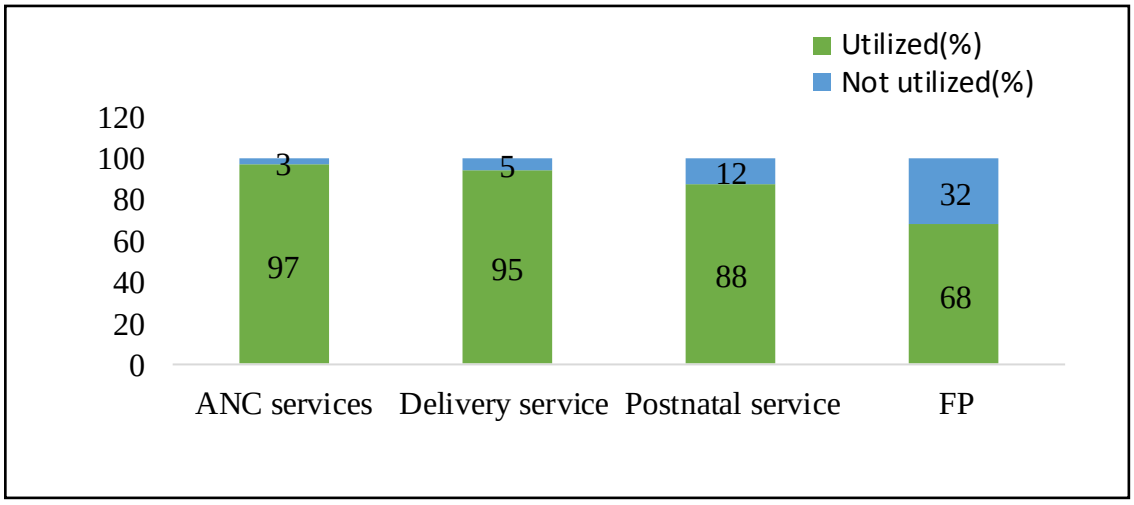

Figure 4.1 Utilization of free maternity services in the last pregnancy

Figure 4.1 show that the respondents had utilized 97% of ANC, 95% utilized delivery services, and family planning was at 68%. According to the responses of the FGDs and KII, all the respondents agreed to the fact that the maternity care services utilization had increased.

The respondents were further asked to indicate the parity and the type of facility they utilized in their last pregnancy.

4.4.1 Utilization of facility-based free Maternity Services

The findings demonstrates respondents utilization of FMS as per parity.

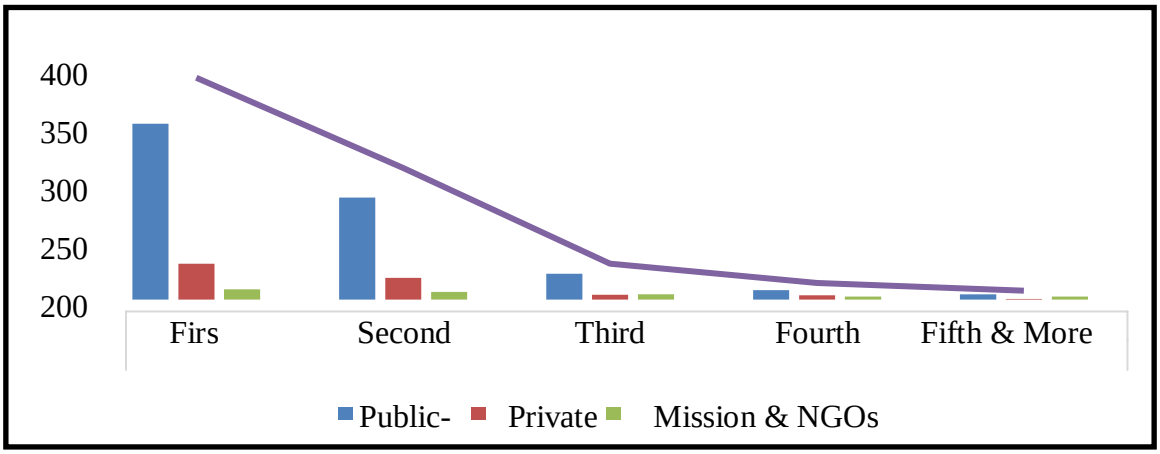

Figure 4.2 Facility-based utilization of free maternity services as per parity

According to figure 4.2, the respondents in their last pregnancy utilized the Public health facilities compared to the Private and Mission & NGO facilities.The Public health facilities were preferred by the mothers for they ensured access to certified professionals and safe delivery.

4.2 Socio-demographic factors influencing utilization of free maternity services

The findings on sociodemographic factors that were significant to the utilization of FMS among the mothers were Age (P=.004), the number of children(P=.000), age at first birth(P=.025), household income(P=.008) and residential area(P=000). The younger the respondent was, the likely to utilize free maternity services. The more the number of children a respondent had, the likelihood of not using the free maternity services. Age at first birth was significant, the younger they were the unlikelihood of using the maternity services. The higher the household income the higher chances that

the mother would utilize the maternity services while respondents in the rural and peri-urban setting utilized free maternity care than those in an urban setting.

Table 4.2 Socio-demographic factors and utilization of FMS

Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.400	.186		18.280	.000
	Age	.053	.019	.177	2.878	**.004**
	Level of education	.012	.029	.021	.422	.673
	How many children do you have? Kindly indicate	-.165	.021	-.503	-7.963	**.000**
	What age were you at first birth? Kindly indicate	-.083	.037	-.117	-2.247	**.025**
	What is your marital status?	.025	.022	.059	1.102	.271
	What is your present occupation?	.002	.019	.004	.083	.934
	What is your household total monthly income, specify in Kenyan shillings	.061	.023	.130	2.670	**.008**
	Who is the breadwinner in the family?	.019	.035	.029	.555	.580
	Which ward is your residential place located?	-.035	.008	-.204	-4.111	**.000**
	How many months lived in this community? Kindly indicate	.008	.013	.029	.624	.533
	What is your religious affiliation?	.044	.084	.025	.528	.598
a. Dependent Variable: Utilization of free maternity services						

The sociodemographic factors that were significant to the utilization of FMS among the mothers were age (*P*=.004),the number of children (*P*=.000),age at first birth (*P*=.025),household income (*P*=.008) and residential area(*P*=000).

4.3 Mother's level of knowledge on free utilization of Maternity Services

The study aimed at testing the mothers' level of knowledge on free maternity services. The respondents were asked questions such as what was the importance and beneficiaries of maternity services.Further, what constituted the free maternity services and how frequent they attended the antenatal services during their last pregnancy. All respondents were highly knowledgeable on free maternity services scoring 80% on all categories of questions.

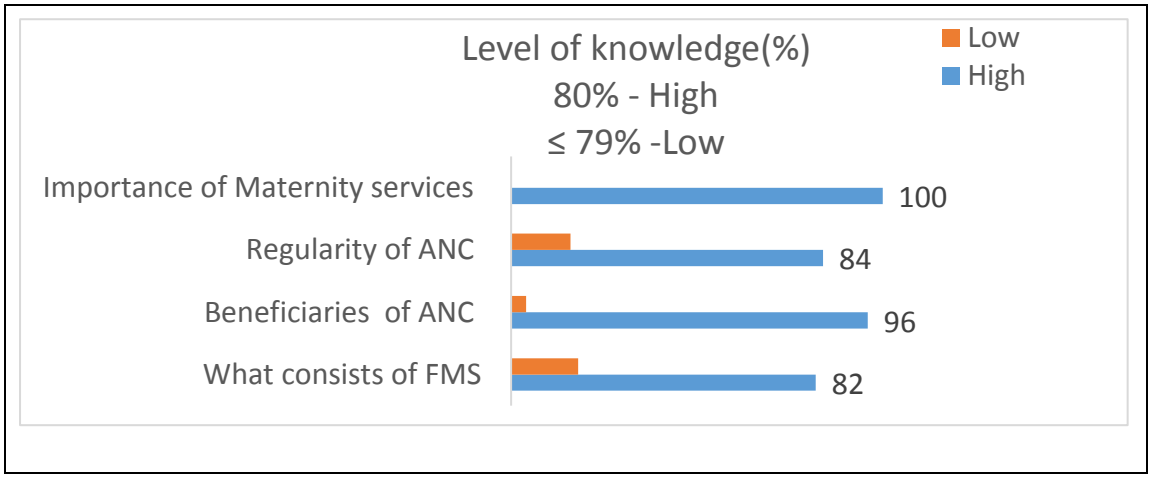

Figure 4.3 Mothers' level of knowledge on free maternity services responses

According to FGD and KII, the mothers in the sub-county had been sensitized to free maternity services in such forums as chief's meetings and social gatherings that are occasionally organized in the community.

4.3.1 Sources of information on free maternity services

The study aimed at identifying sources of information of free maternity services in the eight wards that research was conducted.The results are illustrated in table 4.3.The radio,Television, Health facility, community strategies such use of community

volunteers, leaders and relatives as supported by FGDs and KII were found to be significant. These findings would assist in considering what would be appropriate and effective channels for sensitizing the community on health issues.

Table 4.3 Sources of information influencing the utilization of FMS

Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.498	.060		8.328	.000
	Radio	.197	.010	.478	20.282	**.000**
	Television	.055	.013	.097	4.108	**.000**
	Health facility	.187	.006	.541	29.212	**.000**
	Community (Community volunteer, Leaders, relative)	.339	.015	.422	22.741	**.000**
a. Dependent Variable: Utilization of free maternity services						

The findings in Table 4.3 revealed that holding radio, television, health facility and community (community volunteer, leaders, relative) to a constant zero, the utilization of free maternity services would be at a factor of 0.498. A unit increase in radio would lead to a unit increase in the the utilization of free maternity services by a factor of 0.197. A unit increase in television would lead to a unit increase in the the utilization of free maternity services by a factor of 0.055. A unit increase in health facility would lead to a unit increase in the the utilization of free maternity

services by a factor of 0.187 and a unit increase in radio would lead to a unit increase in the community (community volunteer, leaders, relative) the utilization of free maternity services by a factor of 0.339.

The radio, television and community level were observed as significant sources of information to mothers on FMS according to results in table 4.3. The FDGs and KII expounded on the community level sources as community health volunteers, community leaders and relatives. Further, the FGD and KII indicated that the mothers in the sub-county had been sensitized to free maternity services in such forums as chief's meetings and social gatherings organized in the community.

4.4 Institutional factors influencing utilization of maternity services

The study sought to examine the institutional factors and their effects on maternity services. The respondents have rated their experiences as they sought maternity services at the health facilities. The degree of agreement was scored with the highest being 3 of strongly agreeand the lowest score being 1 with strongly disagreed.

Table 4.4: Respondents views

The degree of agreement: Strongly disagree-1. Disagree-2, Neutral 3, Agree-4, Strongly agree-5

Condition of the maternity unit	**Strongly Disagreed**	**Disagreed**	**Neutral**	**Agreed**	**Strongly Agreed**
	N (%)	*N (%)*	*N (%)*	*N (%)*	*N (%)*
Enough clean toilets	0(0)	12(3.1)	36(9.2)	264(67.3)	80 (20.4)
The Maternity unit had cleanrunning water	3(0.8)	14 (3.6)	24 (6.1)	274 (69.9)	77(19.6)
Adequate supplies during last delivery	31(7.9)	52(13.3)	49(12.5)	190 (48.5)	70(17.9)
Mothers did not share beds in the maternity unit	64(16.3)	57(14.5)	40(10.2)	153(39)	78(19.9)
The Maternity unit was clean	2(0.5)	14 (3.6)	39(9.9)	257(65.6)	80(20.4)
Did not wait for long when I sought maternal health services	22(5.6)	28(7.1)	46(11.7)	226(57.7)	70(917.9)

The respondents' views were further subjected to multiple regression analysis and it was found out that no sharing of beds was significant with P=0.033, which illustrates that sharing of beds is significant to the utilization of free maternity services.

Table 4.5 Respondents experiences on institutional factors

Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.220	.158		20.355	.000
	The health facility had enough clean toilets	.002	.035	.003	.057	.954
	The maternity unit had clean running water in the taps	-.035	.035	-.060	-1.004	.316
	I did not buy delivery related supplies during my last delivery	.008	.020	.024	.417	.677
	Mothers did not share beds in the maternity unit I delivered last	.038	.018	.130	2.141	.033
	The health facility I sought maternal health services was clean	-.003	.037	-.005	-.070	.944
	I did not wait for long when I sought maternal health services	-.045	.024	-.114	-1.852	.065
a. Dependent Variable: Utilization of free maternity services						

The FGD and KII results highlighted that inadequate supplies, inefficientreferral system, inaccessibility of services due to distances from facilities. The institutional infrastructure was also identified as a challenge in the management of the large number of clients who turn up for services.

4.5 Health System factors on free utilization of maternity services

The study in this section was assessing the health system factors and determined the free maternity service offered in the health facilities. The respondents were asked to

evaluate their experiences as they accessed services in various health facilities. The highestscore of 3 was for good and the 1 score for the poor experience.

Table 4.6 Mothers views on maternity services

Maternity services received at the health facility	Linkert scale (Poor-1); (Satisfactory- 2);(Good-3)		
	N(%)	*N(%)*	*N(%)*
Quality of Services received	23(5.9)	109(27.8)	260(66.3)
Adequacy of staff	38(9.7)	111(28.3)	243(62)
The attention received	25(6.4)	88(22.4)	279(71.2)
Health personnel conduct & Professionalism	16(4.1)	81(20.7)	295(75.3)
Availability of essential medicines and supplies	58(14.8)	99(25.3)	235(60)
Level of involvement of the client on decisions made on their care	63(16.1)	103(26.3)	226(57.7)

Mothers' responses to their experiences were further analyzed to establish the significance of the variables on the utilization of maternity services.

Table 4.7 Mothers' responses on experiences on utilization of FMS

Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.894	.127		22.699	.000
	Maternity care Services received at the public Health facility	.025	.032	.052	.791	.429
	Adequacy of staff at the facility I was served in my last visit	-.035	.027	-.076	-1.272	.204
	Attention of care received from health workers	.021	.037	.044	.584	.560
	Health personnel conduct and professionalism	.055	.036	.103	1.536	.125
	Essential medicines and supplies at the health facility	-.006	.023	-.014	-.255	.799
	Level of involvement of the client on decisions made on their care	-.020	.021	-.054	-.942	.347
a. Dependent Variable: Utilization of services						

The study established that when maternity care services received at the public Health facility are increased by one unit, they will lead to a unit increase of 0.025. When adequacy of staff at the facility served in the last visit are increased by one unit, they will lead to a unit decrease of 0.035. When attention of care received from health workers is increased by one unit, they will lead to a unit increase of 0.021. When the health personnel conduct and professionalism is increased by one unit, they will lead to a unit increase of 0.055. When essential medicines and supplies at the health facility are increased by one unit, they will lead to a unit decrease of 0.006 and when the level of involvement of the client on decisions made on their care are increased by one unit, they will lead to a unit decrease of 0.020.

Mothers' responses analysis on health system factors on utilization of maternity services were not significant. Focus group discussion and key informant interviews responses pointed out that the free mater services have been adversely affected by shortages and frequent strikes of health care workers. A comment from an FGD member stated 'Frequent nurses strike keeps us the community away from seeking services from the government hospitals'.This goes along to deny clients timely quality service provision.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the study findings as it relates to other studies conducted on the utilization of free maternity services. The specific aspects of discussion comprise of utilization level of free maternity services, socio-demographic factors, mothers' level of knowledge, institutional factors and health system factors.

5.1.1 Utilization level of free maternity services

The study aimed at examining the level of utilization of services. The study findings revealed that the uptake of Antenatal care at 97%, facility deliveries was 95%, postnatal care was 88% and family planning was 68%. These results imply that there is low utilization of family planning despite the fact the other services indicators are good.

It was also notable, the study established that the Public health facilities were utilized more than the Private and NGO facilities despite the fact all of them had been accredited by the National Insurance Health Fund (NHIF) to offer free maternity services. The mothers in this study actively used maternity services during their first, second and third pregnancies followed by a sudden decline. This could be a reflection on the socio-demographic characteristics of the respondents indicating that most of them gave birth to one to three children. These results are supported by Owiti *et al,* (2018), on a study on uptake of maternity services in Kibera, stating that the mothers preferred seeking services at the public health facilities.

The study results concur with the findings presented by the World Health Organization (2015) which revealed the importance of Universal Health Coverage and described it as the main component of ‘ensuring healthy lives and promoting the wellbeing of humanity by enabling access to quality care service needed without serious financial constraints. The study results also agree with the findings of Steele et al.,(2019), that stated that the removal of user fee from health facilities enhance access to maternity services thereby increasing facility deliveries by 40%, thus reducing the neonatal deaths from 4.8 to 1.3 deaths per 1000 live births. According to the health policy of 2013, Kenya instituted and implemented FMS to help reduce the mortality rate of mothers and infants.

The findings of this research study established that the mothers aged between 18 to 49 go-to health facilities for all sorts of maternity services ranging from antenatal, delivery, postnatal services to family planning services. Many mothers attend all these maternity services following the initiation of the health policy of 2013 which allowed the implementation of free maternity services. The outcome of the study is mirrored in the results of research conducted in Turkana, Wajir and Garissa (Lang’at et al.2019). According to Lang’at et al.,(2019). facility deliveries and live births had improved by 89%, 97%, and 98% respectively.

Free maternity services are an important policy instituted by the government to reduce mortality rates. Even though this is a great policy, it is faced with many challenges that affect its effective utilization. The study found that poor communication and distances to the health facilities were the challenges that hinder the effective utilization of free

maternity services. To avoid such challenges, communities are developing ways to ensure that they are informed about the free maternity services like instituting chiefs' barazaa, community policing, and involvement of community health volunteers. This corresponds with the findings of Pyone et al.(2017) who found that Kenya introduced free maternity services to all public health facilities to ensure that maternal and neonatal deaths are reduced significantly hence advocating for every member of the public to have current information about the free maternal services.

5.1.2 Socio-demographic factors and utilization of maternity services

The study determined the socio-demographic factors that influence the use of free maternity services among mothers aged between 18 to 49 in the Naivasha Sub-county. Among the socio-demographic factors that influenced the use of maternity services were age, the number of children, age at first birth, household income and residential location. This study revealed that the majority of mothers below 40 years visit health facilities for maternal care than mothers above 40 years.

The research results agree with the findings of Tekelab *et al*.,(2019) who in their study revealed income, accessibility to care and residential location influences the use of antenatal services. Further, Orwa *et al.,(*2019) found from their study that early enrollment to antenatal care service contributed to health facility deliveries and improved use of postnatal care services. The mothers' age, number of children and place of residence had a significant relationship with the utilization of maternity services. The study findings on marital status with the utilization of free maternity services agree with Rurangiriwa *et al,,(*2017) research that was conducted in Rwanda on

determinants of utilization of ANC services. It indicated that the older, single, divorced and widowed women lacked support and were not able to attend the recommended four ANC visits. These findings contradict,Tekelab *et al*.,(2019) that postulated the existence of a relationship between the use of maternity services and mothers' level of education and religious afflation. Further, this study findings do not agree with a study conducted in NCheu District, Malawi by Chimatiro *et al.* (2018) what prevent women from starting ANC visits in the first trimester.The barriers were largely contributed by cultural beliefs and socio-economic factors (Chimatiro *et al.*,2018).The expectant women had to rely on marriage counsellors from the husband side (Chimatiro *et al.*, 2018) to advise them when to start the antenatal clinic. Other barriers included, pregnancy being held in secrecy, women delayed antenatal attendance because they were waiting for new clothes, spouses refusal to accompany them to the clinics and the health workers rudeness (Chimatiro *et al.*, 2018).

5.1.3 Mothers' level of knowledge on free maternity services

The purpose of the study was to assess the mothers' level of knowledge on free maternity services. The results of the study showed that mothers' level of knowledge was rated 80% and above on assessment on their responses on what constitutes free maternity services and the importance of seeking these services. The mothers' responses on what entails antenatal care service, the importance of regular ANC and the beneficiaries of maternity services were also rated above 80%.

The results of this study agree with Pica and Sandberg (2018) who revealed that the perceptions of women about quality care influence their future healthcare-seeking

behaviour. The study found that women would seek maternity services depending on how they were attended to previously. The study revealed that the use of maternity services was higher among mothers who accessed standby ambulances and lived in the rural than those in peri-urban areas. The findings support Oberoi et al., (2016) that stipulated that the environment in which one resides, economic incentives, and free ambulance services contributed immensely to whether a mother will go for free maternity services or not. The same study findings agree with Owiti et al., (2018) who found out that more women use free maternity services in public health facilities than those in private hospitals.

The study findings showed that women understand that free maternity services are mostly offered in public health facilities. Most of the mothers knew about free maternity services from different media ranging from; radio, television, health worker, community health volunteer, relatives, chiefs and assistant chiefs, religious leaders among others. The study also found out that mothers know the importance of visiting health facilities for maternity services. They know that the services offered during maternity visits help them secure their lives and the lives of their unborn children. The study findings would support that the mothers be sensitized to free maternal health services through different channels like community health workers, chief's barazaas, community health volunteers and other media that allows eased interaction.

5.1.4 Institutional factors influencing the use of maternity services

The study aimed at determining the institutional factors influencing the use of maternity services. The study focus was on the condition of maternity units infrastructure, supplies and waiting time. The items evaluated were the cleanliness of toilets, quality of

water, adequacy of delivery supplies and beds, the waiting time to access the maternity services.The study revealed that most of the mothers were drawn to particular health facilities due to their enough clean toilets, clean running water in taps, availability of delivery related supplies, clean and unshared beds, and less time on the line waiting for the maternity services. Ngesa,Kirui, Matheka,Otieno and Yoos,(2021)study findings supports and indicates that the cleanilines of a facility influences the utilization of FMS.The study by Kruk *et al.,(*2016) advises women and mothers to look at the quality of basic maternal services when deciding on where to seek care services. The women tend to look for health facilities that can handle large volumes of clients and those who have professionals and facilities to perform surgical operations such as caesarian sections. The study by Kruk *et al.,* (2016) found that the undeveloped countries' health facilities offering obstetric services has no capacity for caesarian section and this makes mothers not choose such facilities even if their maternity services are free of charge. The study found out that sharing of beds is a significant institutional factor and this agrees with Kruk *et al,(*2016), that the institutional factors influence the health-seeking behaviour of those who require maternity services. The FMS as onserved by Tama,*et al*(2017) indicated that sharing of beds and overstreched the gains that were expected to be realised following the implemetation of FMS. The health providers reported burnout due to increased workload. This was largely experienced in the public health facilities ,Gitobu *et tal*,(2018) following the abolishment of fee that caused a signicant change in maternLand neonatal preventable mortalities moved from the community to the health facilities.

5.1.5 Health system factors influencing the use of free maternity services

The study purposed to assess the health system factor on the use of maternity services offered in health facilities. The study findings demonstrated that no health system factor was significant to the use of free maternity services.From the FGD and KII perspective, the Sub-county had experienced frequent strikes of health workers that affected the service delivery that included maternity services.In addition, shortage of supplies of medicine and health personnel were reported to affect services accorded to the mothers. These findings agree with Pyone *et al.,* (2017) that postulated that health factors are such a determinant to the utilization of free maternity services. A clear free maternity policy if not well executed denies mothers getting the needed medicines and other supplies since the facilities remain not well equipped for these services. The challenge of shortage of staff was supported by the study conducted in Pondeni Maternity in Nakuru County by Wamalwa,(2015) that examined the health workers' perspective following the roll-out of free maternity services.

5.2 Conclusions

The first specific objective was to determine the utilization level of free maternity services among mothers aged 18-49 in the Naivasha Sub-county of Nakuru County. The study concludes that mothers preferred to utilize maternity services in Public health facilities that include ANC, delivery services, postnatal care, and family planning. All free maternity services (FMS) uptake was above 70% except family planning that was at 68%.

The study determined socio-demographic factors.The Mothers' age, number of children, age at first birth, household income and residential area were significant and influenced utilization of free maternity services.

The study determined the mothers' level of knowledge on free maternity services among mothers aged 18-49 in Naivasha Sub-county. The mothers' level of knowledge was above 80%; the study also concludes that the majority of mothers learnt about free maternal care services through various media including; radios, televisions, health workers, community health volunteers, relatives, chiefs and assistant chiefs, religious leaders among others.

The study also determined institutional factors influencing the use of maternity services among mothers aged 18-49 in the Naivasha Sub-county. The study concludes the sub-county health facility visited by the mothers found out that sharing of beds was a significant factor.

The study examined the health system factors influencing the use of FMS among mothers aged 18-49 in the Naivasha Sub-county. The study concludes that maternal care services received at the public health facility were generally good except that there were concerns about frequent health workers strike and inadequate staff.

5.3 Recommendations

5.3.1 Recommendations from the study

1. Conduct sensitization to improve the family planning uptake to 70%
2. Consider age, number of children, age at first birth, household income and residential area when formulating free maternity services policy

3. Utilize more radio, TV and community approaches in the dissemination of information
4. Addresses the infrastructural challenges and shortage of staff and supplies by reviewing policy following the rollout of free maternity services
5. Actively engage its staff to avoid frequent strikes and expose them to continuing professional development activities

5.3.2 Recommendations for further research.

The author recommends future studies on the following aspects: -

1. The Health workers' perspective on the implementation of free maternity services policy
2. A correlational study should investigate the factors that influence the utilization of free maternity services.Further, establish a comparative study of access and use of free maternity services in rural counties and city counties
3. Expound on institutional and health system factors that were found not to be significant to the utilization of free maternity services

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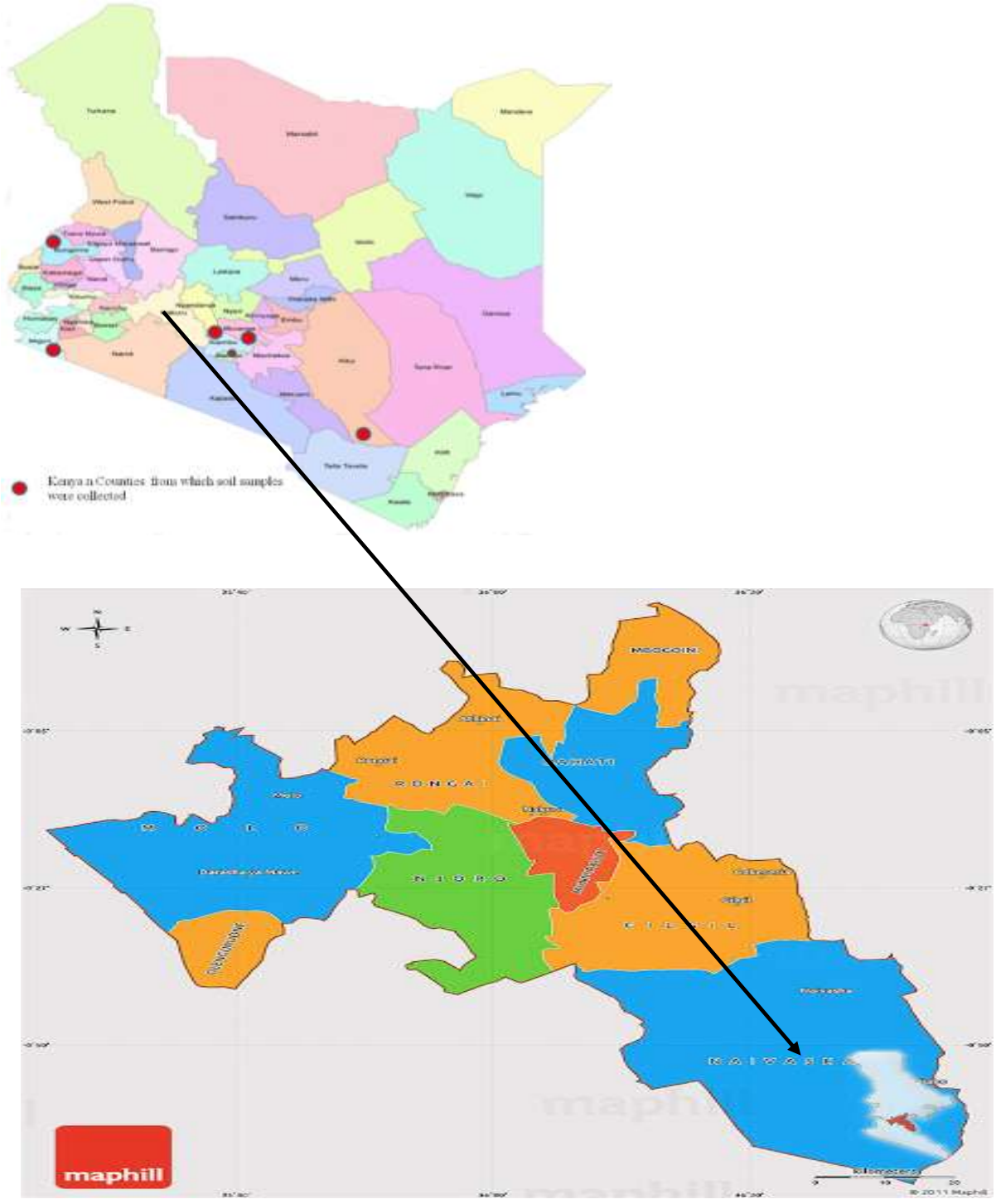
APPENDICES

Appendix I: Study location map



Appendix II : Consent Form

UTILIZATION OF FREE MATERNITY SERVICES AMONG MOTHERS AGED 18-49 IN NAKURU, KENYA.

Ward name……..

Good morning/Afternoon.

I am Priscilla Najoli, IMPACT fellow pursuing a Master's programme in Health System Management at Kenyatta University. My research area is on the utilization of free maternity services among mothers. I wish to request your participation in the research, you being among the mothers who have utilized the free maternal child services at Naivasha sub-county. This means that I will not associate your name with any responses.

This is a detailed interview schedule and you might get in the study.

The information you will provide will be used for the intention of this study only and confidentiality of the same will be kept. tired midway. You may also find that other questions may be offending. However, you do not have to respond to every question and are free to discontinue the interview at will.

I appreciate the effort and time you will direct to this exercise and you are free to ask clarification of unclear questions.

In case of any concern, contact my supervisor.

Dr, Joyce Kirui Tel No. 0710988103

Kenyatta University, Kenya.

Please provide accurate answers.

If you accept, please consent.

Signature…….

Date…….

Thank you for your participation

Questionnaire Code	

Appendix III : Questionnaire

UTILIZATION OF FREE MATERNITY SERVICES IN NAKURU COUNTY

I am an IMPACT fellow based in Nakuru County Health department. I am conducting a cross-sectional study in the community on the utilization of free maternity services. The study will establish the utilization level and its influencing factors at the Naivasha sub-county. The findings will inform policy and assist in the development of strategies to address any constraints that will be existing.

For any queries contact the researcher on the mobile number: 0723-841996 All questions contained in this document are confidential and will only be used for the study.

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

1. Sex Male ☐ Female ☐
2. What is your age (years)? Kindly indicate
   ……...
3. What is your highest level of education?

   No education ☐ Primary☐ Secondary ☐ College ☐ Others ☐
4. How many children do you have? Kindly indicate

   One Child ☐ Two Children ☐ Three Children ☐ Four Children ☐
   Five and more children ☐
5. What age were you at first birth? Kindly indicate
   ……
6. What is your marital status?
   Married ☐ Single ☐ Divorced ☐ Separated ☐
   Widowed ☐
7. What is your present occupation?

   None ☐ Housewife ☐ Employed ☐ self-employed ☐

   Others ☐ (Please Specify)……
8. What is your household total monthly income, specify in Kshs……
9. Who is the breadwinner in the family?

   Self ☐ Husband ☐ Husband and wife ☐ Significant other ☐
10. Which ward is your residential place located?
    Biashara ☐ Hell's gate ☐ Lakeview ☐ Maimahiu ☐

Maella ☐ Olkaria ☐ Naivasha East ☐ Viwandani ☐

11. How long have you lived in this community (months)? Kindly indicate
……

12. What is your religious affliction?

Christian ☐ Muslim ☐ Hindu ☐ Other ☐
Specify……..

SECTION B: UTILIZATION LEVEL OF FREE MATERNITY SERVICES

13. Indicate in order of pregnancies have you carried since June 2013 to date where you delivered them and benefited with FMS.

Order of pregnancies	Public facility	Private	Other(specify)
1st			
2nd			
3rd			
4th			
Other(specify)			

14. When was the date of your last delivery?
(Specify)……..

15. Indicate in the following boxes where you sought the following maternity services during your last pregnancy

Type of services	Public facility	Private facility
ANC services	☐	☐
Delivery service	☐	☐
Postnatal service	☐	☐
FP	☐	☐
Other, Specify	☐	☐

SECTION C: MOTHER'S KNOWLEDGE LEVEL

16. What consists of free maternity service?
FP ☐ ANC ☐ Delivery ☐ Postnatal care ☐
All the above-listed ☐ ☐Others specify……

17. How did you get information on free maternity services in your ward? Tick (√) where applicable.

Radio	☐
Television	☐
Health worker	☐
Community Health volunteer	☐
Relative	☐
Subchief/Chief	☐
Religious leader	☐
Others	☐ Specify……

18. Why do you attend the ANC clinics?
---

19. Who is the beneficiary of ANC services?
Mother-Child ☐ Child ☐ Both ☐ I don't know ☐

20. In my last/current pregnancy, the consistency of ANC visits were/are
Regular ☐ sometimes ☐ Never attended ☐

SECTION D: INSTITUTIONAL FACTORS

Use the Likert scale to answer the statements in Qs 21 -28. Tick (√) the appropriate box.
Key: 1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly disagree

Statement	**Degree of disagreement**				
	1	**2**	**3**	**4**	**5**
21. The health facility had enough clean toilets					
22. The maternity unit had clean running water in the taps					
23. The health facility I delivered my baby has adequate delivery equipment					
24. Health facility delivered in last was prepared to handle birth related emergencies					
25. I did not buy delivery related supplies during my last delivery					
26. Mothers did not share beds in the maternity unit I delivered last					
27. The health facility I sought maternal health services was clean					
28. I did not wait for long when I sought maternal health services					

SECTION E: HEALTH SYSTEM FACTORS

29. What free maternity service did you receive from the health facility during your last pregnancy?
Tick (√) all that applies
Antenatal care ☐ Normal delivery ☐ Postnatal care ☐ Family planning ☐
Others, ☐ Specify……

Use the Likert scale to answer the statements in Qs 30- 35. Tick (√) the appropriate box.

Key: 1. Very poor 2. Poor 3. Satisfactory 4. Good 5. Very good

Statement:	**1**	**2**	**3**	**4**	**5**
30. Maternity care Services received at the public Health facility					
31. Adequacy of staff at the facility I was served in my last visit					
32. The attention of care I received from health workers					
33. Health personnel conduct and professionalism					
34. Essential medicines and supplies at the health facility					
35. Level of involvement of the client on decisions made on their care					

Appendix IV: Focused Group Discussion Guide.

Utilization of free maternity services

1. What prohibits the community members from accessing free maternity services?
2. What assists the community in accessing free maternity services?
3. What are the benefits of delivering in a health facility?
4. What are the challenges of delivering in a Public health facility?

Mother's knowledge level

1. What methods were used to sensitize the community on free maternity services?

2. Why were these methods used for sensitization preferred?

Institutional factors

1. How does the quality of service at the Public Health facilities affect the use of free maternity services? What are the most important things to consider?
2. How is the preparedness of primary Public Health facilities to offer free maternity services?

Health system factors

1. What are your thoughts on the current status of the following?
    - Essential medicine supplies
    - Health workforce
    - Referral system
    - Involvement of community members in the management of health care service provision at the sub-county

Appendix V: KII Guide

Title of informant: Midwife in-charge, Maternity unit, Naivasha sub-county hospital		
1.	What free maternity services does your hospital offer?	Probe Any policy
2.	What are the bed occupancy and delivery rates at the maternity unit?	
3.	How would you rate the general infrastructure of the maternity unit in supporting maternal child services?	Probe -Organization -Subsections - Adequate washrooms -Water and electricity supply
4.	What has been put in place to ensure the working environment is conducive for both clients and staff?	
5.	In your opinion, state challenges affecting the women in accessing free maternal child services at the hospital	Probe Staffing level Supplies – Medical, Pharmaceutical
6.	Does your health facility receive any referrals of mothers seeking delivery services? ☐ Yes ☐ No	Probe If Yes, from where and why are they referred?

Tittle of informant: Medical of Health, Naivasha Sub-county		
1.	How far has the implementation of free maternity services been implemented in the sub-county?	
2.	How would you rate the utilization level of these services? And Why?	
3.	What measures have been put in place to facilitate the dispensaries and health centres in handling emergency maternity cases that include surgical procedures e.g. caesarian section?	
4.	In your opinion, what do you think are some of the challenges affecting the community in accessing health services at the sub-county?	Probe Staff, essential supplies, referral systems
5.	How is the community involved in the management of health services at the Sub-county?	
6.	What strategies are in place in the Sub-county to support the free maternity services	

Appendix VI : Post Graduate approval, Kenyatta University

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
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P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School

DATE: 7th July, 2020

TO: Priscilla Jemeli
C/o Health Management & Informatics

REF: Q142/26858/2018

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 1st July, 2020 approved your Research Project Proposal for the M.S.C. Degree Entitled, **"Utilization of free maternity services among mothers between ages 18-49 in Nakuru County, Kenya".**

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

Elijah Mutua
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Health Management & Informatics

Supervisors:

1. Dr. Joyce Kirui
C/o Health Management & Informatics
Kenyatta University

JG/ns

Appendix VII : NACOSTIC Approval

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **449316**

Date of Issue: **27/July/2020**

RESEARCH LICENSE

This is to Certify that Ms. PRISCILLA JEMELI NAJOLI of Kenyatta University, has been licensed to conduct research in Nakuru on the topic: UTILIZATION OF FREE MATERNITY SERVICES AMONG MOTHERS BETWEEN AGES 18- 49 IN NAKURU COUNTY, KENYA. for the period ending: 27/July/2021.

License No: **NACOSTI/P/20/5947**

449316

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

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