

FACTORS INFLUENCING UPTAKE OF FREE MATERNITY  
SERVICES IN KAKAMEGA COUNTY 5 YEARS AFTER  
INTRODUCTION

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## **LIST OF ABBREVIATIONS**

<b>AIDS:</b>	Acquired Immunodeficiency Syndrome
<b>ANC:</b>	Antenatal care
<b>BCG:</b>	Bacillus Calmette - Guerin vaccine
<b>CEDAW:</b>	Elimination of discrimination against women
<b>CHW:</b>	Community Health Worker
<b>CHV:</b>	Community Health Volunteers
<b>DPT-Hep-Hib</b>	Diphtheria Pertussis Tetanus Hepatitis B Haemophylus Influenza type B Vaccine
<b>FMC:</b>	Free Maternity Care
<b>FP:</b>	Family Planning
<b>GOK:</b>	Government of Kenya
<b>HIV:</b>	Human Immunodeficiency Virus
<b>ICPD:</b>	International Conference on Population and Development
<b>KEPI:</b>	Kenya Expanded Program on Immunization
<b>KDHS:</b>	Kenya Demographic and health survey
<b>MCH</b>	Mother and child health
<b>MDG:</b>	Millennium development goal
<b>MMR:</b>	Maternal mortality ratio
<b>MoH:</b>	Ministry of health
<b>PNC:</b>	Post Natal Care
<b>SDG:</b>	Sustainable Development goal
<b>SMI:</b>	Safe motherhood initiative



## OPERATIONAL DEFINITIONS

**Awareness** - Knowledge gained through own perception or being informed by being cognizant of current development in regard to free maternal healthcare services offered in public hospitals.

**Free maternal health care:** non-payment for services offered to pregnant women i.e. antenatal, delivery and post-natal services.

**Hospital Infrastructure** - include physical and organizational structures required for effective and efficient operation within the hospital set up.

**Physical structure** include wards, theatre, incubators, beds, equipment's and other facilities like toilet, bathroom

**Organizational structures** include body of rules and regulations governing various system e.g. procedure of patient admission and discharge.

**Human resources** - include all human workforce or human capital , an a ray of personnel i.e. senior medical consultants( gynecologist) , midwives , laboratory technologist ,pharmaceutical technologists , hospital administrator ,drivers ,cleaners , cooks

**Implementation of free maternal healthcare services:** The removal of service charge in public hospital in relation to women delivering in these hospitals.

**Maternal HealthCare:** Services offered to a pregnant woman including, antenatal, and delivery and post delivery services

**Kakamega County;** one of the 47 administrative units in Kenya

**Public hospitals:** – Government operated hospitals e.g. Kakamega County referral Hospital

**Quality of services** – A states of how good or bad health services are. It measures whether healthcare services meet the basic requirements.

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## ABSTRACT

**Background:** Delivery with skilled birth attendance and access to basic and emergency obstetric care is the most crucial intervention for reducing maternal and new-born deaths. A significant proportion of women in Kenya especially those in rural settings deliver at home alone or with the help of TBAs. Health care charges are a significant barrier to access to skilled maternal health services. In June 2013 free maternity services was introduced in Kenya to encourage women to deliver in a public health facility .However, according to the KDHS 2014, 38% of women in Kenya still had home deliveries.In Kakamega County home deliveries were at 50.6 %

**Objective:** To determine the factors influencing choice of place of delivery among women in Kakamega county five years after the introduction of free maternity services in public hospitals in Kenya.

**Methodology:** This was an analytical study carried out at Kakamega County Referral Hospital MCH clinic among 416 women attending the MCH clinic for post-natal care services. Descriptive statistics in form of percentages were used to summarize the data values for the study variables. Chi-square test was used with p-value <0.05 considered significant. The analysis was done using the SPSS computer software version 24.

**Results:**Most of the respondents had facility based deliveries with 85% having hospital deliveries. Women who delivered at home were significantly older than those who delivered in a health facility (32.5yrs versus 25.8 yrs.)  $p < 0.003$ . Being single was associated with delivery from a health facility ( $p < 0.0001$ ). Women who stayed more than 5km from the facility were more likely to deliver at home  $p < 0.004$ . ANC attendance especially in the first trimester was associated with more facility delivery,  $p < 0.0001$ .

**Conclusion:** Based on the study results the proportion of women delivering in a health facility is higher than the national average. There is need to improve access and transport to health facility as it is a major reason given for home delivery based on the study findings

## CHAPTER ONE:INTRODUCTION

### 1.1: Background of Study

Kenya is one of the countries considered to have a high maternal mortality rate. The Kenyan maternal mortality ratio is estimated at 362 deaths/100,000 live births well above the Millennium Development Goal (MDG) target of 147/100,000 live births by 2015 according to the Kenya Demographic Health Survey (KDHS) 2014 report(1)(2).One of the targets of the Sustainable development Goals (SDG) Goal 3 is “by 2030 to reduce the global maternal mortality ratio to less than 70 per 100,000 live births(3).

For every woman who dies in childbirth it is estimated that another 20-30 women suffer serious injury or disability due to complications during pregnancy or delivery(4).The high morbidity and mortality is partly due to limited access to skilled maternal health services including antenatal care, delivery and post-natal care services especially among the rural and poor population.

Health care charges are a significant barrier to access of maternal health services especially among the poor population(5). Although health sector infrastructure has grown over the past decade,(4)many women still live at a considerable distance from health facilities and cannot afford to pay fees for maternal services, and / or face other barriers to accessing quality care. Access to skilled delivery is a particular challenge.

The Government of Kenya (GOK )on 1<sup>st</sup> June 2013 rolled out the Free Maternity Services (FMS) program to encourage women to deliver in a public health facility under skilled personnel by eliminating all charges of intrapartum care (6). The policy aims to improve the accessibility and utilization of quality maternal and newborn health care across all demographic groups in Kenya as well as to reduce unmet maternal health needs. It also intends to improve access to health services for disadvantaged communities by reducing the financial barriers of accessing skilled care.

According to the KDHS 2014 61% of births in Kenya occurred in a health facility while 62% was by a skilled provider (doctor, nurse or midwife) which was a big improvement from 2008/2009 where only 43% delivered in a health facility(7).However there is still the 38% who deliver at home either alone or with the help of traditional birth attendants ,friends or relatives(1).

## **1:2 Problem statement**

Maternal mortality continues to be a serious global health problem particularly in resource constrained countries like Kenya. Kenya did not achieve the MDG goal 4 and 5 targets to reduce child mortality and to improve maternal health by ensuring skilled birth attendance as evidenced by the KDHS 2014 report.

Women are having public facility delivery but more are still delivering elsewhere or at home alone or assisted by traditional birth attendants. There is poor utilization of public health services during delivery in Kakamega County as evidenced by the KDHS 2014(1) which showed facility delivery to be at 47%. Of these, 37.7% delivered in a public health facility while 9.2% of women delivered in a private health facility. Among the home deliveries 30.1% was by the help of a TBA, 1.2 % were assisted by a friend or a relative while 8.1% delivered alone. The study thus seeks to assess the uptake of free maternity services in Kakamega county and barriers to its utilization.

## **1.3 Rationale**

The Free Maternity Services (FMS) was rolled out in June 2013 by the government of Kenya. Despite this, many women mostly in rural communities still have home deliveries according to a study done by D. Hodgkin in rural South Nyanza in 1989(8) and most recently by Moindi et al in Kilifi County in 2016(9).

Records have shown that Kakamega County has a high fertility rate of 4.4 births per woman as opposed to the national average of 3.9 births per woman as per the KDHS 2014 (1). Kakamega was ranked fifth among the fifteen counties with the highest burden of maternal mortalities in Kenya during a survey by UNFPA in 2014 (10). This is despite mechanisms to increase use of free maternity services and delivery under skilled attendance with an intention to reduce these deaths.

Thus the purpose of this study is to determine the factors influencing choice of place of delivery among women in Kakamega County 5 years after the introduction of free maternity services in public hospitals in Kenya.

#### **1.4: Significance of the Study**

The study aims to determine the factors influencing choice of delivery area and barriers to use of the free maternity services if any. The findings will give recommendations on the strategies to put in place to solve these challenges and ensure mother attend ANC clinics and deliver in health facilities.

The study findings will also inform programs and the relevant authorities on the challenges and gaps of implementing the free maternity services and ways of improving facility delivery. It will also inform other countries planning to implement similar service based exception programs and contribute to the existing body of knowledge on maternal health.



## **CHAPTER TWO:LITERATURE REVIEW**

The health status of mothers and children is an important indicator of the overall economic health and well-being of country (UN 2010). In an effort to reduce maternal mortality the government and international agencies are promoting maternal health care services hence mothers are able to benefit as they freely access reproductive health education, vaccinations, pregnancy supplements and lab services at no cost from public hospitals.

The International Safe Motherhood initiative ( SMI ) was introduced in 1987 in an attempt to reduce maternal morbidity and mortality by half by the year 2000(11). This encompassed the need to improve women's status, educate communities and strengthen and expand core elements of maternal health including antenatal, delivery and postpartum care at both community and referral levels. It called for action at local, national and international levels to reduce high rates of maternal mortality and to improve women's health in the developing world. A variety of programs were developed whose aim was to improve the health status of pregnant women, improve access to health services during pregnancy and improve the quality of care available to those who experience complications during pregnancy and delivery.(12)(13).

Provision of high quality maternity care can make the difference between life and death by; ensuring clean and safe delivery hence preventing obstetric complications from occurring, providing treatment of pre-existing or emergent medical conditions and offering effective management of complications once they arise. A continuum of care during pregnancy, labor and delivery and the post-natal period results in reduced maternal and neonatal morbidity and mortality.

High quality care implies provision of services which are accessible, affordable, affective, appropriate and acceptable to women and this is encompassed in the pillars of safe motherhood. These include: Family Planning, Antenatal care, Clean and safe Delivery, Obstetric care, STD/HIV/AIDS Control and Post-abortal care(11).

The ICPD ( International Conference on Population and Development ) held in Cairo , Egypt in 1994(14) adopted the program of action which set to acknowledge the reproductive rights of men and women as individuals and emphasizing the challenge to provide comprehensive reproductive health services. It recognized that reproductive health and rights as well as

women's empowerment and gender equality are cornerstones of population and development programs. It thus called for the development of comprehensive reproductive health policies, programs and implementation plans among various governments.

The Millennium Development Goals( MDG ) was a commitment by world leaders in 2000 to enable people across the world improve their lives(2). Goal no 5 sought to" improve maternal health by reducing by three quarters between 1990 and 2015 the maternal mortality ratio and achieve by 2015 universal access to reproductive health". The indicators are maternal mortality ratio and the proportion of births attended by skilled health personnel. One of the MDG goal 5 targets was to have 100% ANC attendance and 90% delivery by a skilled provider(2).

According to the MDG 2013 progress report on Kenya, it was noted that challenges to improving maternal care include inadequate skilled health personnel(15). Most health officers lacked skills along the continuum of care including family planning, midwifery, emergency obstetric, post abortion and newborn care. There were also regional disparities in the availability of health officers, poor involvement of communities and households in maternal health due to socio-cultural barriers, lack of awareness on the benefits of skilled health care and reluctance to adopt good practices (including preference for home delivery) as well as limited male involvement in maternal health care practices. It also noted that access to health facilities is constrained in many places due to poor infrastructure and inadequate referral systems as many of the lower facilities do not offer Emergency Obstetric Care (EmOC), post abortion and essential newborn care(15).

The Sustainable Development Goals (SDG) were born in 2012 to replace the MDGs and goal 3 is to ensure healthy lives and promote well-being for all at all ages(3). Among the targets are : By 2030 to reduce the global maternal mortality ratio to less than 70 per 100,000 live births and to achieve universal health coverage, including financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

Various countries have attempted to meet these goals by provision of universal health care at no or very subsidized cost. Globally Japan is one of the countries with the lowest maternal mortality ratio in the world with 5 maternal deaths per 100,000 live births (16). Japan was

able to achieve this through implementation of universal access to skilled care at no cost. 100% of deliveries in Japan occur with the help of health professionals and in health facilities equipped to manage normal cases or promptly refer complications to higher level hospitals(16).

In the recent years several African countries including Burundi, Rwanda, Zambia, Burkina Faso, Liberia, Niger have enacted policies to make deliveries and or health care for mothers and children free or nearly free(17) .A study in Ghana in 2014 by Dzakpasu et al on the impact of free delivery care on health facility delivery and insurance coverage showed that facility delivery increased significantly and was greatest among the poor. (18). An analysis done in Ghana, Indonesia and Rwanda on the impact of health insurance on maternal health care utilization by Wang W et al showed increased use of maternal care in health with broadening health insurance to include income sensitive premiums or exemptions for the poor or low or no copayments at all. (19)

However in many developing countries the majority of births occur without the help of a skilled assistant at home or in other non-hospital setting as exemplified by various studies done in rural Kenya, Tanzania and Nigeria(20)(21)(9). Home deliveries in absence of skilled professional attendants have been associated with adverse infant and maternal outcomes. In a study conducted in Pakistan in 2010 by Shah N et al the most important adverse outcomes of home delivery are postpartum hemorrhage and retained placental tissue(12).

A study done in rural Kano Nigeria on barriers to use of ANC and obstetric care by Adamu at al found them to be mostly economic, cultural and those related to the women's perception of their condition(22). The three most important explanations obtained were limited financial means, God's will and the husband's denial of permission .Most women delivered at home with the assistance of family members saying it was easier and more comfortable at home and there was privacy and in company of relatives who understand their condition.. Hospital delivery was seen as a last resort. Women disliked certain hospital practices i.e. lithotomy position imposed on them instead of the squatting posture which was more natural, the lack of privacy, presence of a male staff attendant and episiotomies conducted without plausible explanations.

The Government of Kenya (GOK) on 1<sup>st</sup> June 2013 rolled out the free maternity services (FMS) program to encourage women to deliver in a public health facility under skilled personnel by eliminating all charges of intrapartum care(6). The FMS aimed to encourage facility delivery under skilled personnel so as to reduce maternal morbidity and mortality. It also aimed to improve the accessibility and utilization of quality maternal and newborn health care across all demographic groups in Kenya and to reduce the unmet maternal health needs. It also intended to improve access to health services for disadvantaged communities by reducing the financial barriers of accessing skilled care.

Despite availability of free maternal health services uptake is not universal and reasons given include physical distance and financial limitations to access the health care facility, perception that hospital deliveries were for women with complications, negative attitude towards health care providers, women's dependence on husband or other family members for decision making and family and religious objections. A study done in rural Coastal Kenya, Kilifi County by Moindi et al in 2015 showed that most women who delivered at home were of an older age group and lived a distance of more than 5km from the health facility(9). Most were also in polygamous marriages. In a study done in West Pokot by J.Ogolla in 2014 showed illiteracy and distance to health facility as the most common reason for home delivery(23)

According to the KDHS 2014, barriers to seeking health care include(1):Getting money to go for treatment 37%, Distance to the health facility 23%, Not wanting to go alone 11%,Not getting permission to go for treatment 6%.46% of woman had at least one of the above problems in seeking curative health care.

A study on health care service delivery in Indonesia by Titaley et al in 2010 and why rural women still prefer to deliver under traditional birth attendants, most women cited physical distance, financial limitations and the perception that facility deliveries were for women with obstetric complication(24).

In Zambia, a qualitative study done in 2015 on reasons for home delivery and use of traditional birth attendants various reasons given include women's lack of decision- making autonomy ,dependence on the husband and other family members for final decision, long distances to facility, lack of money for transport and the requirement to bring baby clothes and food while staying at the clinic, negative attitude towards the quality of services provided

at the clinic, positive attitude towards TBAs and perceived them to be respectful, skilled, friendly, trustworthy, and available when they needed them.(25)

The use of the three delay model by Thaddeus and Maine in 1994 focused on the activities required to reduce maternal, perinatal and neonatal deaths(26). Delay in deciding to seek appropriate care, Delay in reaching an appropriate health care level and delay in receiving adequate emergency care once at a facility were some of the primary delays identified(12). However they noted that patients who made a timely decision to seek care still experienced delay due to lack of accessibility of health services. In rural areas, it was noted that the closest facility may only be equipped for basic treatment. The facility may also not offer immediate treatment due to shortage of qualified staff, essential drugs and supplies and clinical mismanagement and this may also lead to adverse maternal and neonatal outcomes.

Other delays recognized to impede seeking of care by women include lack of recognition of seriousness of condition, lack of money, transport or someone to leave other children with, preference for home remedies and traditional practitioners and negative perceptions of the treatment and providers at “modern “health facilities.(1)

Causes of maternal death are not only limited to the final medical diagnosis but also include the social, cultural, economic, legal and political factors that define a woman’s status in the society. The reproductive and health seeking behavior of a woman influences the risk of adverse pregnancy outcomes and provision and utilization of care plays an important role through appropriate management of normal pregnancies and deliveries so as to prevent complications timely management of complications to avert adverse outcomes.

While the Kenyan Maternal Mortality Ratio has declined from 488/100,000 in 2008/2009(7) to 362/100,000 in 2014(1) there are still inequalities in the various counties. A study by the UNFPA on the burden of maternal mortalities and their distribution in Kenya found that 15 out of the 47 counties contributed to 98.7% of the total maternal deaths in Kenya.(10). Mandera County accounted for 2136 out of the total 6623 maternal deaths in Kenya. Kakamega County accounted for 364 placing it fifth after Wajir County (581), Nairobi County (533), and Nakuru County (444). Kakamega County is thus considered among the counties with the greatest burden of maternal deaths and has a maternal mortality ratio of

316/100,000. 20 % of deaths were noted to be during pregnancy, 44% during delivery, and 36% 2 months after delivery according to the UNFPA report on 13<sup>th</sup> August 2014.

According to the KDHS 2014, in Kakamega county 47 % of deliveries were in a health facility (37.7 % in a public hospital and 9.2% in a private hospital) while 48.6 % were attended by a skilled provider. 50.6% had home deliveries(1). 15.3% had deliveries conducted by a doctor, 33.4% by a nurse or a midwife, 0.7% by a community health worker, 30.1% by a TBA, 11.2 % by a relative or friend, and 8.1% alone. Culture, poverty and distance to the health facilities were the most common reason given by the rural and poor communities. Others cited financial barriers, family and religious objections and negative provider attitudes.

Attendance of ANC and receipt of professional delivery care has been associated with a reduction of maternal deaths(1)(27).In Kakamega County 96.4% of women had ANC care given by a skilled provider while 45% of women had a minimum 4 ANC visits(1).A study conducted in western Kenya by Anna M van Eijk, *et al*, in 2006 thou showed that ANC scheduled visits were made late in the pregnancy period with no time left for focused interventions(28). Perceived lack of quality of facility based ANC services was associated with late first ANC visits denying women a chance for disease detection and the benefits of essential health interventions.

Women were also noted to attend post-natal clinics at least 2 days after delivery either for post-natal checkup, infant vaccination or for family planning(1). 53% of women had received post-natal checks within 2 days of delivery according to the KDHS 2014. It was noted that 98% of babies had had the initial KEPI vaccination by the time of the survey (BCG 97%, DPT-Hep-Hib 1<sup>st</sup> dose 98%, Polio 98% ) .Only 2% of the children in Kakamega county had not received any immunization at all(1). This means that despite women having home deliveries, they still attended post-natal clinics and took their children for immunization.

The total fertility rate of Kakamega County is 4.4 births per woman while age at first birth is 19.4 years according to the KDHS 2014.Age at first birth was noted to increase with increasing education and wealth. Women in the highest wealth quintile had their first birth 3 and half years later than women in the lowest wealth quintile.

The age at which child bearing starts has important consequences on the health and welfare of the mother and child. Teenage pregnancy and motherhood is associated with higher morbidity and mortality for both the mother and child(23). Among women aged 15 to 19 years in Kakamega County, 13.5 % had had a live birth, 6.0% were pregnant with their first child and 19.4 % had begun child bearing as per the KDHS 2014.

Regular ANC attendance has been proven to be helpful in helping identify and prevent adverse pregnancy outcomes when sought early and continued until delivery(28). WHO recommends at least 4 visits and more visits are advised in case of a complication. In Kakamega County it has been noted that health facility delivery increased with increasing number of ANC visits. 18.6 % of women who did not attend ANC delivered at a health facility compared to 75.7% of women who had 4 or more ANC visits(1).

Health facility delivery also increased with increasing education and wealth.85.1 % of women who had had secondary education or higher delivered in a health facility compared to 26.4% who had no education. 92.1% of women in the highest wealth quintile delivered in a health facility compared to 31.1% in the lowest wealth quintile.

By age health facility delivery was least common among births to women between age 35 to 49 years (53.9%) compared to 62.1% in women who were 20 years and less. Health facility delivery also decreases as the birth order increases. For the first child 79.1% delivered in a health facility compared to 37.2 % who were delivering their 6<sup>th</sup> child and above.

## **2.1: Conceptual Framework**

The focus of the study is to define the relationship between the dependent and independent variables that influence maternal morbidity and mortality. The dependent variable is the maternal and perinatal morbidity and mortality whose indicators are the number of deliveries under skilled attendance and good neonatal outcomes. The independent variable is the free maternal health care program (which includes availability of health infrastructure and abolition of all payments and user fees) hence free ANC, free delivery, free emergency services and free post-natal care.

The provision and uptake of accessible, acceptable, affordable, effective and appropriate is what encompasses high quality of care. Affordability affects uptake and delay in seeking care. Evidence from other developing countries indicates a direct decline in utilization of maternity services with implementation of user fees(5)(29). The introduction of the FMS aimed to encourage facility delivery under skilled personnel by making it free hence affordable.

In terms of accessibility there are more service delivery points for ANC and essential obstetric care evidenced by increased uptake and facility attendance for ANC, maternity services, child health, lab and operative services according to KDHS 2014(1) and the MOH review on status of implementation of FMS in the devolved health system(30)

Effective, appropriate and acceptable care relate to the physical facilities, equipment and consumables, and skills of the providers both clinical and interpersonal. The government has tried to provide equipment and ambulances in case of need for referral. Majority of health care workers (75%) have received some form of reproductive health training and most are qualified, updated with current practice, have job aids and receive support supervisions from partners. 60% of health facilities conduct CMEs with 55% holding them weekly and 35% holding them monthly(30). However there was reported inadequate staff in various health facilities especially the specialized carders i.e. gynecologists, medical doctors, clinical officers and nurses(30).

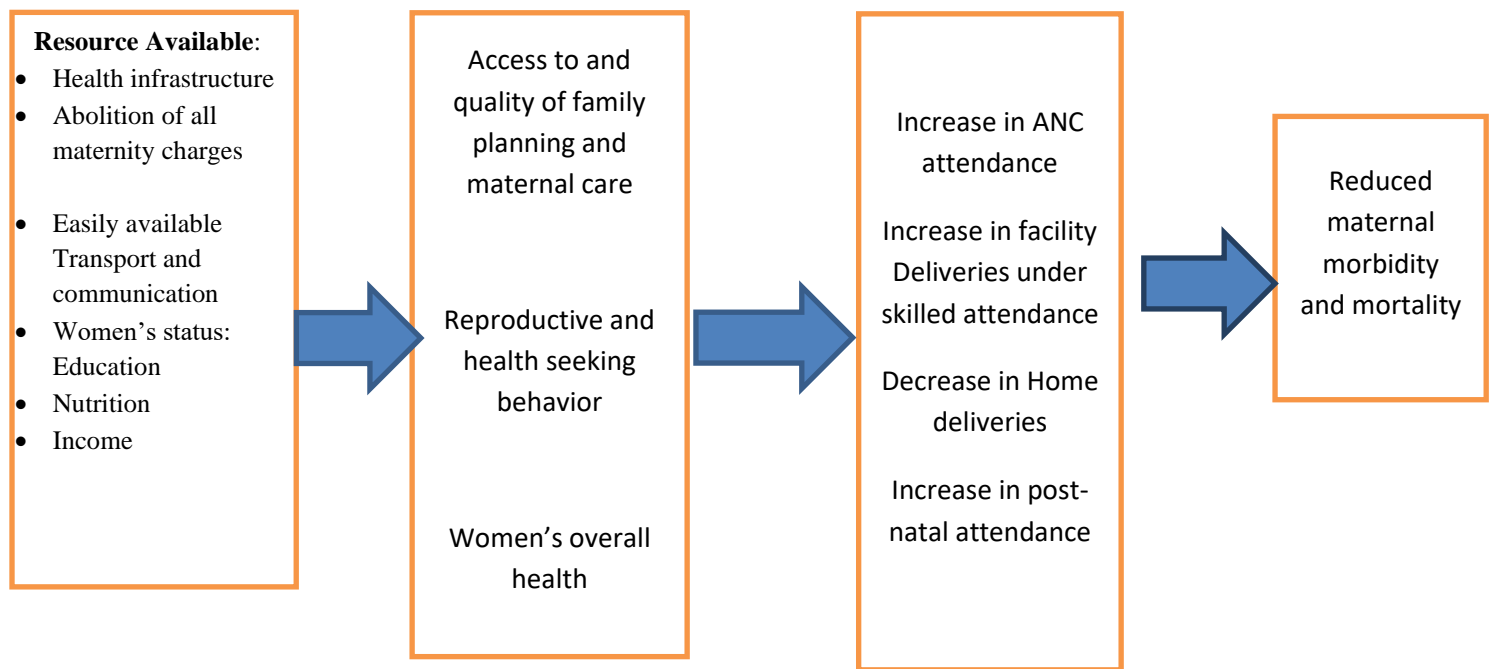
The factors defining the socioeconomic status of women that have a direct impact on safe motherhood include poor health and nutritional status before during and after pregnancy, limited knowledge and awareness of health, lack of decision making power and resources for



seeking healthcare, weak negotiating power in terms of sexual and reproductive rights, heavy physical workload regardless of pregnancy status and exposure to violence related injury.

A study has shown that ANC, facility delivery and PNC attendance increased with increasing education and wealth. According to the KDHS 2014 98% of urban women were more likely to receive ANC services from a skilled provider compared to 94% of rural women(1). Delivery in a health facility increases with the number of ANC visits the mother made and also with increasing mother’s education and wealth i.e. 25% of births to mothers with no education in a health facility compared to 84% of births to mothers with secondary to higher education(1).

A woman’s nutritional status has important implications for her health and the health of her children. Malnutrition in women results in reduced productivity, increased susceptibility to infections, slowed recovery from illness and an increased risk of adverse pregnancy outcome.



**Figure 1:** Conceptual Framework Illustration

### **2.3 Justification**

According to a study by UNFPA in 2014 on the burden of maternal mortality in Kenya, Kakamega County was ranked 5<sup>th</sup> out of the Fifteen counties with the highest burden of maternal mortality(10) . The maternal mortality ratio was 316/100,000 which was slightly lower than the national average of 364/100,000 (1).Therefore maternal health and child survival are identified as areas of concern.

Skilled attendance is aimed at preventing or reducing maternal morbidities and mortality as various studies have shown. Attendance of ANC and receipt of professional care at delivery has been associated with a direct reduction of maternal deaths(1). Studies have shown that home deliveries in absence of skilled professional attendants has been associated with adverse infant and maternal outcomes.

Many women deliver in hospitals but more are having home deliveries despite availability of free maternity services and in many developing countries including Kenya(31). Currently the number of health facilities has gone up hence more easily accessible.(1) Women have been noted to attend ANC and PNC and take their children for immunization as evidenced by the high ANC attendance (96%) and high immunization coverage rate by the KDHS 2014 (1).

Thus the question still remains; “beside abolition of user fees in health facilities and easy availability and accessibility what influences a woman’s choice of delivery area? Why do some women still prefer to have home deliveries?” What other factors besides cost influence choice of delivery area?

Has Free Maternity Services achieved its intended purpose to increase facility delivery?

The aim of this study is thus to find out other factors influencing uptake of FMS. It can also be used to inform programs so as to be able to get suitable interventions to promote facility delivery and uptake of free maternity service

### **2.4Research Question**

What are the factors influencing uptake of free maternity services among women in Kakamega county 5 years after its introduction?

## **2.5 Objectives of the Study**

### **a) Broad Objective**

To determine the factors influencing choice of place of delivery among women in Kakamega county 5 years after the introduction of free maternity services in public hospitals in Kenya.

### **b) Specific Objectives**

1. To describe the socio demographic characteristics of women attending post-natalcare services at the Kakamega County Referral Hospital
2. To determine the factors that influence the choice of delivery area of women attending post-natal care services at the Kakamega County referral Hospital
3. To determine the hospital facilitators and barriers to uptake of facility delivery 5 years after inception of Free Maternity Services in Kakamega County referral Hospital

## **CHAPTER THREE: METHODOLOGY**

### **3.1: Study Design**

This was an analytical study carried out in Kakamega County Referral Hospital

### **3.2: Study Site and Setting**

The study was conducted at the Kakamega County Referral Hospital MCH clinic situated within Kakamega County. Kakamega County has an estimated population of 1,660,651 people the largest proportion of this population being between 15-64yrs (KDHS 2014). The poverty level is at 57%. Most people practice large scale sugarcane farming, mixed farming, commercial business and “boda boda” transport business.

The hospital receives referrals from neighboring counties in Kenya such as Vihiga, Bungoma and Busia. It is located 1km from the Kakamega Central Business district inside Kakamega town and can easily be accessed by road. The hospital is among the approved teaching and referral hospitals in Kenya, and is also an internship center for medical officers, clinical officers, nursing officers and also community health and development graduates from their respective colleges.

The hospital offers both inpatient and outpatient services. The hospital has a bed capacity of 449 beds and 79 cots. Kakamega County referral Hospital MCH clinic was used for data collection as it has a wide catchment area and is also located centrally and in an urban set up. It is situated near the main gate of the hospital and provides ANC and PNC services, childhood immunization, growth monitoring programs, family planning, and HIV and AIDS guiding and counselling. It also sees sick children who are under 5 years old, has a gynecological outpatient clinic and offers cervical cancer screening services.

There are 2 gynecologists, 2 pediatricians, 4 medical officers, 2 clinical officers with diplomas in Reproductive health, 3 clinical officers with diplomas in pediatrics and child health and 14 nurses and 1 nutritionist. There is an average of 709 ANC attendees, 265 post-natal care attendees, 831 Child welfare Clinic attendees and 399 FP service attendees per month. The clinic is open from Monday to Friday 8am to 5 pm. On weekends it only attends to the sick under 5 year's old children. The services offered are free except the ANC profile which clients have to pay for and other laboratory fees.

### 3.3: Study Population

The study population was women attending MCH clinic for post-natal services within Kakamega County referral hospital from 1<sup>st</sup> August 2018 to 31<sup>st</sup> October 2018.

#### 3.3.1: Inclusion Criteria

The study included women who were willing to participate and were able to give informed consent .those who met the following requirement were recruited:

1. Women who had delivered in the past 2 months before the study either at home or in hospital
2. Women who were accessing the MCH clinic at the Kakamega County referral Hospital for post-natal care services

#### 3. 3.3.2: Exclusion criteria

1. Women who had elective caesarean delivery
2. Women who were sick or had brought sick children to hospital.

### 3.4: Sample Size Determination

$$n = \frac{Z_{\alpha/2}^2 p(1-p)}{e^2}$$

Reference: Fleiss, Statistical Methods for Rates and Proportions, formulas 3.18 &3.19

Where;

p = proportion of women who delivered at health facility (here 47%)

$Z_{\alpha}$  = Represents the desired level of statistical significance (typically 1.96 for 95% confidence).

e = error margin (5%)

n = Sample size (here n=383 women)

### 3.5. Sampling Procedure

Women who met the inclusion criteria during the study period were randomly selected and recruited until the desired sample size was achieved. Recruitment was as they came to the facility and were waiting for service delivery or had already been attended to. They were screened to see if they met the inclusion criteria and were recruited after having given consent. Consent was in a language they understand (both English and Swahili version were

available).Kakamega is a cosmopolitan town with various local dialects but most people understand English and Swahili. They were interviewed using a structured questionnaire and data obtained thereafter.

### 3.6: Recruitment and Consenting Procedures

Study participants were approached and recruited into the study as they were attending post-natal care at the facility. They were informed about the study and those consenting were recruited. The consent form was in both English and Swahili and was administered individually and privately so as to maintain confidentiality. Those who could not read or write were assisted by a witness chosen by the participant to sign the consent form and fill the questionnaire.

### 3.7 Data Variables

Table 1 Data variables of the various objectives

	Independent exposure	Dependent exposure	Source of data
Objective 1	Sociodemographic factors Age, education level, marital status, status of employment, income, Distance to nearest health facility, means of transport	Health facility versus Home delivery	Questionnaire
Objective 2	Affordability, Accessibility, Previous birth experience Knowledge of the available options	Health facility versus Home delivery	Questionnaire
Objective 3	Affordability, Easily accessible, knowledge of free maternity services, previous uneventful hospital delivery	Health facility versus Home delivery	Questionnaire

### **3.8: Data Collection**

This was done by the principal investigator and two research assistants who had been thoroughly trained on the study protocol for data collection. Interviews were conducted using a structured questionnaire and data collected. Each questionnaire had a study number for confidentiality. No caregiver or patient identifier was used.

After the initial entry of data, the principal investigator counter checked proper data entry for every 5 entries. The database was protected using an encrypted password that was accessible to the principal investigator and statistician only.

### **3.9: Data Management, Storage and Analysis**

Data was collected using structured questionnaires and entered into a password protected Microsoft Access Database. They were checked for completeness before the respondents were allowed to leave. The hard copy data forms were stored during collection, data entry and after analysis. Upon completion of data entry, hard copy forms were compared with the entered data to identify errors and corrections made appropriately.

Descriptive statistics was carried out where discrete variables were summarized with frequencies and percentages while continuous variables were summarized using measures of central tendency and dispersion such as mean, median, mode, standard deviation and inter-quartile ranges.

Bivariate analysis was carried out to compare women who delivered at a health facility with those who did not in terms of socio-demographic characteristics, reproductive history, and other co-morbidities. Comparison between means was done using t-tests/ANOVA while chi-squared tests were used to compare proportions. During multivariate analysis, independent factors associated with hospital delivery were determined while adjusting for confounders and effect modifiers. This was achieved using binary stepwise backward logistic regression.

The quantitative data was entered into Statistical Package Social Sciences (SPSS) for data cleaning and analysis. Qualitative Data Analysis was done by identifying key themes associated with pregnancy and delivery, and eliciting responses along these themes. These

results were summarized by highlighting key responses along the themes and they complemented the quantitative results.

### **3.10 Study strengths and Limitations**

#### **Study strengths**

- Study was carried out at a County referral facility which is centrally located hence wider catchment area
- The study was carried out at 2 months after delivery and was inclusive of all the women attending post-natal clinic whether they had a facility or a home delivery to minimize recall bias.
- The study had a large sample size of 416 women hence able to capture a wide range of data and responses.

#### **Limitations**

- This was a hospital based study hence the findings may not be generalizable to the general population
- The study was done at a referral facility hence bias in that those who came for PNC services were likely to have delivered at the facility and most could either be referrals or those who had complicated pregnancies
- Selection bias in the clinic attendants as it only captured those who came for PNC services hence missing out on those who chose not to immunize their children and they may have been the ones who had home deliveries.

### **3.11: Ethical Considerations**

This proposal was submitted to the University of Nairobi/Kenyatta National Hospital Ethics and Research Committee and approval obtained prior to data collection (P759/12/2017)(Appendix 4). Administrative approval was then sought from the Kakamega County Referral Hospital Ethics and Research Committee (004/06/2018) (Appendix 5). Consent was obtained from the participants after informing them about the study objectives and benefits. Participants seeking to withdraw from the study were allowed to do so. Confidentiality was maintained throughout the process.



### **3.12: Study Results Dissemination**

The findings will be relayed through meetings and copies of the findings will be relayed to the following; Kakamega County Referral Hospital staff and management, Ministry of Health both national and Kakamega County, KNH/UON ERC and KNH/UON Department of Obstetrics and Gynecology.

### **3.13: Study Closure Plan and Procedure**

The study was closed after reaching the target number of participants and analysis completion. Lessons learnt will be shared appropriately to the relevant authority as detailed above.

## CHAPTER FOUR: RESULTS

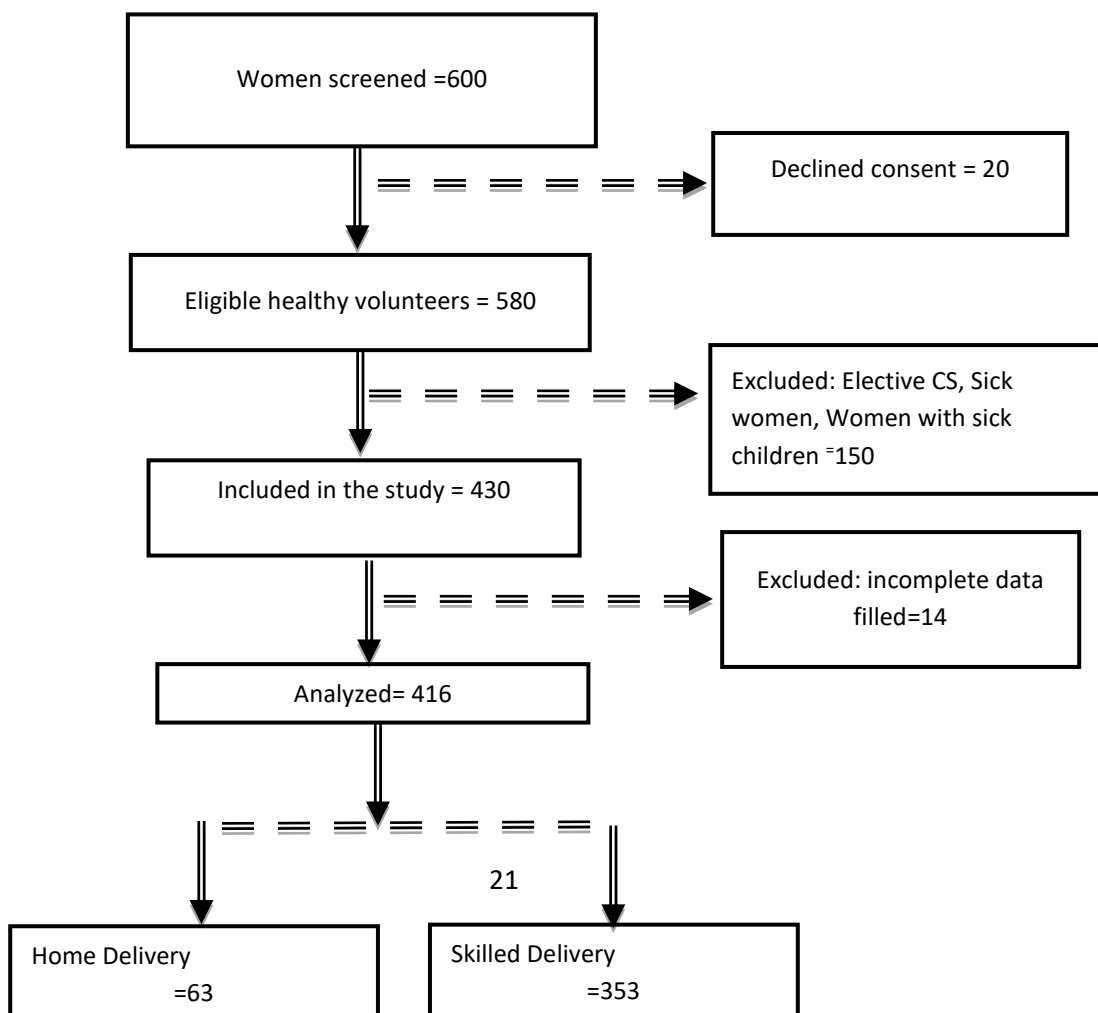
### 4.1 Introduction

This study, conducted among women attending post-natal clinic at the Kakamega County Referral Hospital, was designed to establish the utilization and factors influencing the utilization of skilled delivery services in Kakamega County following the introduction of Free Maternity Services. The study was conducted between 1<sup>st</sup> July 2018 and 31<sup>st</sup> September 2018. To achieve the study objectives, a total of 416 were enrolled into the study and a questionnaire administered to obtain information on their socio demographic, obstetric, sexual characteristics and the factors affecting influencing their choice to deliver at a health facility.

### 4.2 Enrollment Procedure

The enrollment and data collection procedure was as the women came to the clinic for post-natal services including immunization and family planning services. They were recruited on arrival and questionnaires administered as they were waiting in line to be attended to.

**Figure 2: Study flow process of the study participants**



### 4.3 Choice of Place of delivery among the Study Participants

There was a predominance in facility delivery as per the study results with 85% of the study participants having facility delivery compared to 15% who had home deliveries. This is higher than the national average of 61% who had facility delivery as per the KDHS 2014 report (1).

Of the 416 women interviewed, 353 women had facility delivery either in a public or a private facility. 63 women (15% of the respondents) reported to have had home deliveries either at home alone, assisted by a friend or relative or at a TBAs place. The figure below shows the above results

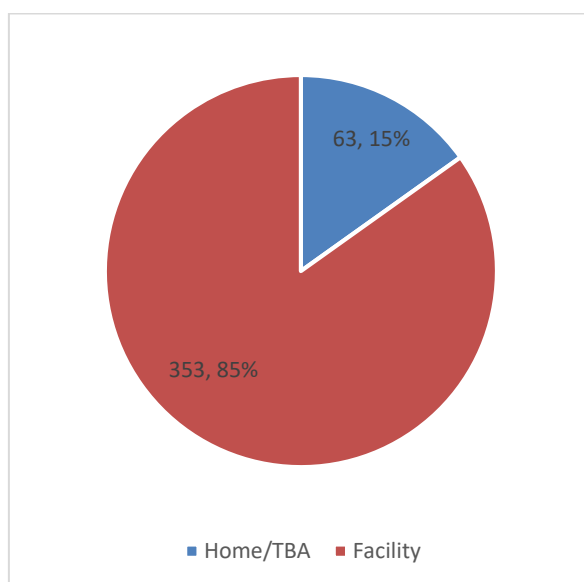


Figure 3: Choice of Place of Delivery among study participants

### 4.4 Sociodemographic characteristics of participants interviewed.

The table below shows the baseline characteristics of the study participants. There were 416 women who were recruited into the study. The mean age of the respondents was 26.1 yrs with a median age of 25 yrs. Most of the participants had attained post primary education with only 10% having had no formal education.

71% of the respondents were married either in a monogamous or polygamous relationship.

More than 50% of the respondents were married ranging from self-employment to being salaries

Majority had a monthly income of less than KSh 5000 (38% of the respondents). Only a small percentage had a monthly income of more than Ksh 15000.

Most of the respondents lived less than 4Km from a health facility and had access by road either by bicycle, motorcycle or Matatu

Table 2: Summary of the sociodemographic characteristics of the study participants

	Mean	Standard Deviation	Median	Percentile 25	Percentile 75
Age	26.1	7.0	25.0	22.0	29.0
				n	%
Education level	Non-formal education			42	10.1
	Primary			86	20.7
	Secondary			163	39.2
	Tertiary			125	30
Marital status	Single			117	28.1
	Monogamous			262	63
	Polygamous			33	8
	Divorced/Separated			4	1.0
Employment status	Self-employed			83	20
	Salaried			143	34.4
	Housewife			114	27.4
	Student			76	18.2
Monthly income	Less than 5000			158	38
	5000-10000			137	33
	10000-15000			68	16.3
	>15000			53	12.7
Distance to health facility	<1 km			110	26.4
	1-2 km			99	23.8
	2-4 km			138	33.2
	>4 km			69	16.6
Means of transport	Bicycle			29	7
	Motorbike			257	62
	Matatu			101	24

The mean age at last delivery for those who delivered at home was 32.54yrs as compared to the mean age of those that had facility deliveries which was 25.78yrs. As per the study results, younger women tended to have more facility delivery while women of an older age group had more home deliveries.

As regards the education status, of the women who had home deliveries, 63.5% were noted to have had no formal education. The higher the level of education, the lower the chance of having a home delivery. Only 1 woman (1.6%) who had tertiary education had a home delivery, compared to 42.5% who had primary education and 7.9% who had secondary education. Of the women who had facility delivery, only 0.6% had no formal education. The higher the level of education, the higher for predominance for facility delivery as evidenced by 44.8% of women who had secondary education and 35% who had tertiary education. As per the KDHS 2014 report, 73.7% of the women who had home deliveries had no formal education. 84.4% of women with tertiary education had facility delivery compared to 24.5% who had primary education. Thus the study findings are comparable to the KDHS 2014 report where the higher the level of education, the higher the chance of facility delivery.

As per the study results there was no statistically significant difference in marital status and choice of delivery area. However majority of women in polygamous relationships had predominant home deliveries (20.6%) compared to 5.7% of polygamous women who delivered in health facilities.

There was a positive association between status of employment, level of income and choice of delivery area as most of the women who were employed and earned more than Ksh 5000 a month tended to have more facility delivery as per the study results.

Distance to health facility had an impact on choice of delivery area as there was an increase in the number of women with home deliveries who stayed more than 1km from the nearest health facility. 85.7% of women who stayed more than 1km from the nearest health facility had predominant home deliveries.

Table 3 below shows a summary of the association between the baseline characteristics of the study participants and the factors that influence the choice of delivery area.

Table 3: Association between the baseline characteristics of the study participants and choice of delivery area

Category	Variable	Place of delivery		p-value
		Home/TBA (%)	Facility (%)	
Mean Age at last delivery (n=416)	Home/TBA( n=63) Facility (n=353 )	32.54 yrs.	25.78yrs	
Education Level (n=416)	Non formal education Primary Secondary Tertiary	40(63.5) 17(27) 5(7.9) 1(1.6)	02(0.2) 69(19.6) 158(44.8) 124(35.13)	0.356
Marital status (n=416)	Single Monogamous Polygamous Divorced/Separated	16(25.4) 32(50.8) 13(20.6) 02(3.17)	101(28.6) 230(65.2) 20(5.7) 02(0.6)	0.01
Employment status (n=416)	Unsalariated Salaried	35(55.6) 28(44.44)	230(65.2) 123(34.8)	0.179
Monthly income (n=416)	Less than 5000 At least 5000	35 (55.6) 28(44.44)	230(65.2) 123(34.2)	0.85
Distance to health facility (n=416)	<1 km 1-2 km 2-4 km >4 km	09(14.3) 21(33.33) 18(28.6) 15(23.8)	101(28.61) 89(25.21) 124(35.13) 39(11.05)	0.004
Means of transport (n=416)	Bicycle Motorbike Matatu Private car	08(12.7) 42(66.7) 12(19.05) 01(1.5)	21(5.95) 215(60.9) 89(25.2) 28(7.9)	0.176

The table 4 below shows the obstetric characteristics of the study respondents. The mean age at the last delivery for the study respondents was 26.42yrs. The mean age at the last delivery for women who had home deliveries was 32.54yrs compared to 25.78yrs for those that had facility deliveries. Therefore as per the study results women who had home deliveries were significantly older than women who had facility deliveries by at least 6years.

There was no significant difference between the number of pregnancies or the number of live births between those who had facility delivery and those who had home deliveries as they all had an average of two pregnancies and two live births.

Table 4: Obstetric characteristics of the study participants

		N	Mean	Std. Deviation
Age at last delivery	Home/TBA	63	32.54	36.835
	Facility	353	25.78	6.217
	Total	416	26.42	12.816
No. of pregnancies	Home/TBA	63	2.38	1.256
	Facility	353	2.24	2.473
	Total	416	2.25	2.386
No. of live births	Home/TBA	63	2.31	1.183
	Facility	353	2.03	1.050
	Total	416	2.06	1.064

Table 5 below shows the relationship between the participants' antenatal history and the place of delivery. Most of the respondents did not report any complications in their last pregnancy. Only 67 out of the 416 women interviewed talked of complications and most of them mentioned malaria in pregnancy.

Most of the respondents attended ANC with 89.2% (n=371) of the women interviewed reporting in the affirmative. Based on the study results there is a statistically significant relationship between attending ANC and time of attending ANC with the place of delivery. Women who attended ANC and those who first attended ANC in the first trimester were more likely to deliver at a health facility (p<0.0001).

Table 5: Antenatal history of the study participants in regards to place of delivery.

Category Variable		Place of delivery		
		Home/TBA	Facility	p value
History of	Yes	07(11.1)	60(17)	0.749

complications during last pregnancy	No	56(88.9)	293(83)	
ANC attendance during last pregnancy	Yes	25(40)	346(98)	<0.0001
	No	38(60)	07(2)	
Timing of start of ANC	1st Trimester	05(20)	193(55.8)	<0.0001
	2 <sup>nd</sup> -3 <sup>rd</sup> Trimester	20(80)	153(44.2)	
No. of times of ANC attendance	>4 times	16(64)	142(41)	0.088
	≥4 times	9(36)	204(59)	
Were antenatal profiles performed?	Yes	20(80)	318(91.9)	0.060
	No	05(20)	28(8.1)	

On further analysis of the data collected, all the respondents who delivered in health facilities (n=349) reported that the services were free and they did not pay for anything. . 96% of the women were aware of the free maternity policy from various sources including the media, friends and relatives and 71% had previous admissions under the free maternity policy.

The women (95%) would still deliver at the health facility where they delivered before in their next pregnancy and reported they were satisfied with the services they received. 85% noticed an improvement in service delivery with most reporting availability of more staff and medication. However, a small number of women complained of congestion in the ward and having to share beds with other women who had come to deliver. They also noted that despite an increase in the number of staff, at times they tended to be overwhelmed with a big number of women delivering at almost the same time. Overall, they reported that they would encourage more women to have facility deliveries.

#### **4.6 Reasons for choice of hospital delivery among Study Participants**

Most of the respondents gave multiple reasons for hospital delivery. Majority of the women (49%) reported that delivery services were free and this appealed to them as they would have very minimal cost to incur during delivery. 33% of the women preferred hospital delivery due to previous uneventful hospital delivery experience. They also noted that services were skilled hence they were reassured of being in good hands in the event of a complication. Some of the respondents noted that the hospital was easily accessible by road, being located at a central place within Kakamega town.



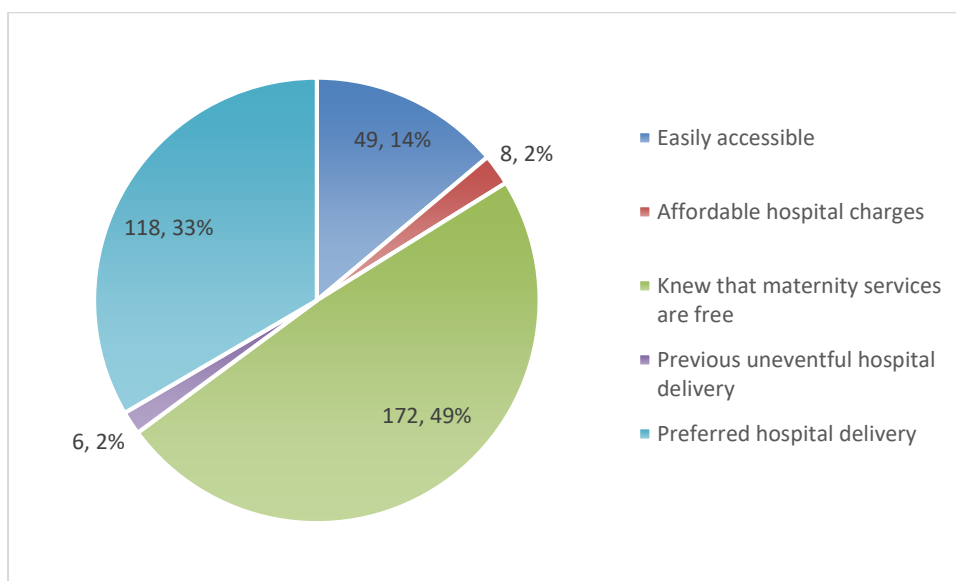


Figure 4: Reasons for Hospital delivery among study participants

#### 4.7 Reasons for Home Deliveries among Study Participants

Among the 416 women who participated in the study, 15% (n=63) had home deliveries in their last pregnancy. This was either at home alone or with the help of a friend or relative, on the way to hospital or at a TBAs place. This was a big decline compared with the national average of 50.6% as per the KDHS 2014 survey.

Various reasons were given with respondents giving multiple reasons. Previous arrangement with a TBA, previous uneventful home delivery, lack of finances for delivery fees, and lack of transport to the health facility were the main reasons given for delivery at home. A small number of women had a previous bad experience with hospital delivery and opted to deliver at home. The reasons given include staff who were rude to them and sometimes beat them up during delivery, congestion in the ward and being forced to share beds with strangers or sleep on the floor due to lack of enough beds. Some women reported previous fetal demise during delivery hence a traumatic hospital experience.

A few women did not know about the free maternity services policy and were therefore avoiding exorbitant maternity fees.

The figure below shows a summary of the reasons for home deliveries among the study participants

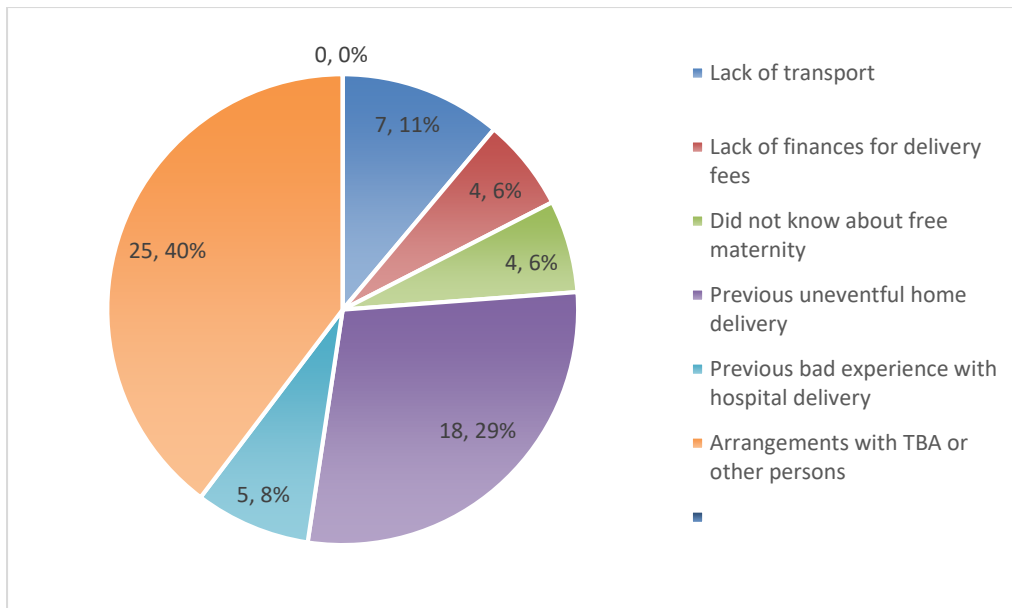


Figure 5: Reasons for Home Delivery among the study participants

#### 4.8 DISCUSSION

There was a predominance for facility delivery according to the results of this study with 85% of respondents having delivered in hospital, a health Centre or dispensary. Only 15% delivered at home either alone, with the aid of a friend or relative or in the TBAs place.

Majority of those who delivered health facilities reported to have been aware that maternity services were free. This was either due to prior delivery under the free maternity policy hence knowledge on the same or prior information from the media, friends and relatives.

Cost had been seen to be a major deterrent to facility delivery in various studies both locally in Kenya and across Africa(22). Countries which had instituted reduced maternity charges or totally abolished user fees during delivery noted a significant increase in facility delivery. A study in Ghana on the effect of free delivery care showed a significant increase after the 2005 policy of free delivery care and 2008 policy of free national health insurance for pregnant women (32). Locally, a study done by Gitobu et al in 77 facilities across 14 counties in Kenya showed a 29.5% increase in facility deliveries in Kenya after introduction of free maternity Services(33). An analysis done by Njuguna et al on the Impact of free delivery policy on utilization of maternal health services in county referral hospitals in Kenya showed an increase of 26.8% on number of deliveries across all the county referral Hospitals (34).

The age at the last delivery also seemed to have an effect on the choice of delivery area. The mean age at last delivery for home deliveries was 32.54yrs while the mean age for hospital deliveries was 25.78yrs. Women who delivered at home tended to be older than those who

had facility delivery. All the women had had at least two prior deliveries hence there was no difference in the number of births. In a study done in West Pokot County on reasons for home deliveries, women were noted to be older with prior birth experience(23). These findings were also similar in a study done in Kilifi county on reasons for home deliveries(9).

The prevalence of ANC attendance during the previous delivery was 97% which was a slight improvement from 96.4% in Kakamega according to the KDHS 2014. 49.9% had a minimum of 4 visits. Most participants (84.1%) attended ANC in a public health facility with 54.2% first attending in the 1<sup>st</sup> trimester, 40.1% starting in the 2<sup>nd</sup> trimester and 5.8% starting in the 3<sup>rd</sup> trimester. Timing of ANC attendance was noted to have an influence on facility delivery with 55.8% of those who first attended ANC in the 1<sup>st</sup> trimester having facility deliveries compared to 44.2% facility delivery among those who first attended ANC in the 2<sup>nd</sup> and 3<sup>rd</sup> trimester.

Early ANC attendance could be because of diseases in pregnancy beginning in the first trimester e.g. hyperemesis gravidarum, early pregnancy bleed, malaria in pregnancy. It could also be due to prior knowledge and information on the importance of early ANC attendance from the media, health education talks or due to a positive experience in the previous pregnancy and hospital delivery

Marital status also had an impact on place of delivery with single women having more facility delivery than married women. Those in polygamous relationship were noted to have more home /TBA place deliveries (40%). A study in Kilifi County in 2014 by Moindi et al showed lack of spousal permission for treatment as a barrier to facility delivery(9).

Distance to health facility was also a factor noted to influence choice of delivery area with those staying more than 1km having home or TBA deliveries. The KDHS 2014 noted that distance to health facility was a major constrain to facility delivery with 23% having home deliveries due to this(1). This mirrored similar studies done in West Pokot and Kilifi where the women cited distance as a major barrier to facility delivery (9)(23)

As per the study results, 15% of the study respondents had home deliveries in their last pregnancy either alone, with the help of a friend or relative or at a TBA's place. This was lower than the national average of 38% and the average for Kakamega County which was 50.6% as per the KDHS 2014 survey(1). The figure may however not be representative of Kakamega County as these were results from only one facility which is the county referral hospital. Most of the women delivering in referral facilities in the country are mostly seen as

referrals due to complications during pregnancy, labor and delivery thus the figure may not entirely reflect a true picture of what happens facilities across the country(34)(35).

Previous arrangement with a TBA, previous uneventful home delivery, lack of finances for delivery fees, and lack of transport to the health facility were the main reasons given for delivery at home. They reported that TBAs were easily available and accessible to them and most were friendly, respectful and caring towards them. A study done in rural Zambia by Sialubanje et al in 2015 mirrored these sentiments with women reporting TBAs to be respectful, skilled, friendly, trustworthy and available when needed. (25).

Studies in the past in various low income countries have reported the effectiveness of TBAs in improving maternal and neonatal outcomes during pregnancy and delivery i.e. A study in Lufwanya Zambia by Gill et al showed that training TBAs to manage common perinatal conditions significantly reduced neonatal mortality(36). Although training TBAs was seen to provide them with basic midwifery skills, most TBAs lacked access to clean delivery tools and drugs for the necessary obstetric care as per this study. The TBAs have no access to referral services to the hospital in case of complications during and after labor. Most countries including Kenya have had a policy change and training and funding of TBA programs has been stopped. Women are thus encouraged to delivery in health facilities under skilled care.

Despite this, women still continue to deliver under TBAs due to the above reasons. A small number of women had a previous bad experience with hospital delivery and opted to deliver at home. The reasons given include staff who were rude to them and sometimes beat them up during delivery, congestion in the ward and being forced to share beds with strangers or sleep on the floor due to lack of enough beds. Some women reported previous fetal demise during delivery hence a traumatic hospital experience. Some of these reasons mirror a study done in Indonesia by Titaley et al (24).

A few women did not know about the free maternity services policy and were therefore avoiding the perceived exorbitant maternity fees as TBA services were reported to be cheaper and payment could be done slowly over a long period of time. .

## **CHAPTER FIVE**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 CONCLUSIONS**

This study found that there was a predominance in facility delivery among the study participants and most of the respondents cited abolition of user fees as the main reason for hospital delivery

Distance to health facility and lack of transport is still a major reason for home deliveries as shown in the study above hence need to improve infrastructure i.e. roads and access to facilities.

ANC attendance and timing of the first ANC visit is a major determinant in choice of delivery area. As per the study results most of the women who attended ANC especially starting in the first trimester tend to have facility delivery.

#### **5.2 RECOMMENDATIONS**

1. There is need to improve infrastructure and access to health facilities and increase the number of health facilities as there are some women who find access difficult due to lack of transport to the nearest health facility
2. There is need for mobilization to encourage early ANC attendance especially in the first trimester or as soon as a woman discovers she is pregnant.
3. There is need to continue creating awareness about free maternity services to encourage more facility delivery as some people are still not aware that delivery services are free

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## APPENDICES

### Appendix 1: STUDY QUESTIONAIRE Study ID \_\_\_\_\_

Date (day/month/year) \_\_\_/\_\_\_/\_\_\_\_\_

1. Age \_\_\_\_\_

2. Education Level

Non-formal education

Primary education

Secondary education

Tertiary education

3. Marital status

Single

Married (monogamy)

Married (polygamy)

Divorced/separated

4. Employment status

Self-employed

Salaried

Housewife

Student

5. Monthly Income

Less than 5000

Between 5001-10000

Between 10001-15000

Over 15,000

6. Distance to health facility

Less than 1km

1-2km

2-4km

>4km

7. Means of transport

Bicycle

Motorbike

Matatu

Private car

PART 2: SEXUAL AND REPRODUCTIVE CHARACTERISTICS

1. Age at last delivery \_\_\_\_\_

2. Have a stable partner  Yes  No

3. No. of pregnancies (parity) \_\_\_\_\_

4. No. of live births \_\_\_\_\_

5. History of unwanted pregnancy  Yes  No

6. History complications during pregnancy

No

Yes (specify) \_\_\_\_\_

PART 3: LAST ANTENATAL AND DELIVERY HISTORY

1 Did you attend ANC clinics during your last pregnancy?

Yes  No

2 If yes which facility. If No skip to question 9

a. Public

b. Private

c. TBA

d. Others ( Specify ) \_\_\_\_\_

3 When did you start attending ANC Clinic

a. First Trimester

b. Second Trimester

c. Third Trimester

4 No. of times

- Once
- 2-3 times
- 5-6 times
- >6 times

5 Were ANC Profiles done?

- a. Yes
- b. No

6 If Yes Which ones ( Check in ANC booklet and indicate parameters )

- a. Hemoglobin level
- b. Blood group
- c. VDRL
- d. Serology
- e. Urinalysis

7 What other parameters were observed during your ANC visits

- a. Blood Pressure
- b. Weight
- c. Height
- d. Others (Specify)\_\_\_\_\_

8 Who advised you to attend ANC clinic?

- Spouse
- Relative
- Friend
- Other

9 If No (question 1), why did you not attend ANC clinic?

- Financial Constrain
- Lack of means of transport
- Had other source of care during pregnancy
- Did not see the need

Other ( Specify )-----

10 Other sources of care during Pregnancy

- TBA
- Religious leaders
- Herbalists
- Traditional healers
- Other (Specify).....

11 Date of last delivery (day/month/year) \_\_\_/\_\_\_/\_\_\_\_\_

12 Age of baby \_\_\_\_\_

13 What was the mode of delivery

- Spontaneous vaginal delivery
- Caesarean Section
- Assisted Vaginal Delivery ( Vacuum )

14 Place of delivery

- Home
- TBA place
- En route to hospital
- Health center / Dispensary
- Hospital
- Other ( Specify )

15 Type of attendant during Delivery

- Alone
- Relative / friend
- TBA
- Skilled attendant( Specify if doctor, nurse, midwife )
- Other

16 Reasons for choice of delivery area if home delivery

- Lack of transport to access health facility
- Lack of finances to pay for delivery charges
- Did not know about free maternity services

- Previous uneventful home delivery
- Previous bad experience with hospital delivery
- Arrangements with TBA or other person to attend delivery
- Other ( Specify )

17 Reasons for choice of delivery area if in Hospital

- Easily accessible
- Affordability of hospital charges
- Knew that maternity services were free
- Previous uneventful hospital delivery
- Preferred hospital delivery
- Other ( Specify )

18 If facility delivery did you have to pay for the services?

- Yes
- No

19 If home did you have to be taken to a health facility following delivery?

- Yes
- No

20 If Yes Specify Why? \_\_\_\_\_

21 Do you know about free maternity services?

- Yes
- No

22 Do you know what free maternity services entails?

- Yes (Specify).....
- No

23. Have you ever been admitted for maternity services before the free maternity care?

- Yes (If yes, answer question 22)
- No

24. Were you satisfied with the services you received then?

- Yes
- No

Specify \_\_\_\_\_

25 Is there a difference between the services before and the services after the introduction of free maternity care?

- Yes
- No
- Specify \_\_\_\_\_

26 In your next delivery will you still deliver where you had your previous delivery?

- Yes
- No
- Why \_\_\_\_\_

27 What would you like changed or improved at the hospital to facilitate your next delivery in hospital? \_\_\_\_\_

28 Reason for PNC attendance at specific health facility

- Post-natal check up
- Infant Immunization
- Family Planning
- Cervical cancer Screening
- Other

29 Would you advice other mothers to attend PNC in this facility

- Yes
- No
- Why \_\_\_\_\_

30. How would you rate the quality of service you have received today?

1 Poor      2 Fair      3 Good      4 Excellent

31 Has the quality of services improved compared to the last time you were here.

- Yes
- No
- Don't Know
- Specify \_\_\_\_\_

## **Appendix 2: INFORMED CONSENT FORM (ENGLISH)**

### **FACTORS INFLUENCING UPTAKE OF FREE MATERNITY SERVICES IN KAKAMEGA COUNTY 5 YEARS AFTER ITS INTRODUCTION**

**Study number: P759/12/2017**

**Investigator: Dr. Linda Chiriswa Nasengo**  
**Obstetrics and Gynaecology Resident, University of Nairobi**  
**Tel Number: - 0721978747**

**Supervisors: Professor Guyo Jaldesa**  
**Professor of Obstetrics and Gynaecology,**  
**Department of Obstetrics and Gynaecology, University of Nairobi**

**Dr George Nyakundi Gwako**  
**Lecturer, Department of Obstetrics and Gynaecology,**  
**University of Nairobi**

#### **Introduction**

Delivery with a skilled birth attendance and access to basic and emergency obstetric care is the most crucial intervention for reducing maternal and newborn deaths. Most obstetric complications occur around the time of delivery and cannot be predicted hence skilled attendance at birth is important for all pregnant women. The free maternity services program was started in Kenya to encourage women to deliver in a public health facility under skilled personnel. However, a lot of women especially in rural settings still have home deliveries either alone or with the help of traditional birth attendants

#### **Purpose**

To determine the factors influencing home deliveries among women in Kakamega county 5 years after the introduction of free maternity services in public hospitals in Kenya.

#### **Procedures**

This study will be conducted through abstraction of data from the facility's records office on number of home verses facility delivery. There will be use of a pre-tested questionnaire for

the post-natal mothers on reasons for home delivery despite availability of free maternity services. In addition, a focused group discussion of the health care givers and in depth interview will be conducted.

### **Safeguarding Privacy**

The interviewer will keep all information about you secure. Your name will be removed from all records involved in the study. A number will be assigned to the survey questionnaire instead. Only project staff will have access to the study data. We will not use your name when we report results of the survey.

### **Risks and Benefits**

There are no known risks to you as a person taking this survey. There are no known direct benefits to you. However, the overall impact for your community may be great because this study will help to determine the factors limiting facility delivery despite these services being free and find acceptable ways to improve uptake.

### **Problems or questions**

If you have any questions about this research or about the use of the results, you can contact the principal investigator, Dr Linda Chiriswa Nasengo by calling 254-721978747.

If you have any questions on your rights as a research participant you can contact Professor

Chindia M.L, secretary, KNH/UoN- ERC by calling Tel. 2726300, ext. 44102, Nairobi.

### **Respondent Agreement**

---

I agree to participate in the study that seek to find out reasons why women deliver at home despite availability of free maternity services.. I understand that there is no financial benefit to be acquired by being in the study. I understand that all the information I provide will be confidential. I have the right to leave the study at whatever point of my choosing. If I have any query I am free to contact the Principal Investigator on the contacts provided or the

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Ethics Review Committee.

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Signature of the subject.....Date.....

Witness.....Date.....

I certify that I have provided information to the subject about the purpose and the nature of the study, the potential benefits and risks.

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**Appendix 3: INFORMED CONSENT FORM (SWAHILI)**

**SABABU ZINAZOWAFANYA WAMAMA KUZALIA NYUMBANI BAADA YA KUANZISHWA KWA MPANGO WA WAMAMA KUJIFUNGUA BILA MALIPO KATIKA KAUNTI YA KAKAMEGA**

**Nambari ya utafiti:**

**Mtafiti Mkuu: Daktari Linda Chiriswa Nasengo**

**Obstetrics and Gynecology Resident,**

**University**

**of**

**Nairobi**

**Tel Number: - 0721978747**

**Watahini: Professor Guyo Jaldesa**

**Professor of Obstetrics and Gynecology,**

**Department of Obstetrics and Gynecology,**

**University of Nairobi**

**Dr George Nyakundi Gwako**

**Lecturer, Department of Obstetrics and Gynecology,  
University of Nairobi**

**Kuanzishwa**

Kujifungua kwenye hospitali kwa usaidizi wa mkunga aliye somea ukunga ama daktari ndio moja ya njia za kuzua vifo vya wamama na watoto wakati wa kujifungua. Madhara mengi ya kizazi hufanyika wakati wa kujifungua na kuzalishwa na mkunga aliye hitimu ni muhimu kwa wanawake wote waja wazito. Mpango wa wamama kujifungu bila malipo ulianzishwa nchini kenya kuhamasisha wamama wajifungue katika vifaa vya afya vya uma chini ya uangalifu wa wakunga waliyo hitimu. Lakini bado kuna baadhi ya wamama wengi waja wazito ambao bado wanajifungua nyumbani wakiwa pekee yao ama chini ya uangalifu wa wakunga wa kienyeji

**Umuhimu wa utafiti huu**

Watafiti kutoka Chuo Kikuu cha Nairobi wanatafuta sababu za wamama kujifungua nyumbani chini ya wakunga wa kienyeji katika kaunti ya kakamega ili hali kuna mpango wa wamama kujifungua bila malipo katika vifaa vya afya vya uma

Nia ya utafiti huu ni kubaini sababu zinazochangia wamama waja wazito kujifungua nyumbani na si katika vifaa vya afya vya uma ,changamoto zilizoko na njia ya kuboresha huduma. Kukubali kwako kujibu maswali kutachangia pakubwa kutusaidia kujua sababu hizii na njia za kuboresha

**Utaratibu wa utafiti**

Utafiti utafanyika kutumia maswali kwa wamama wanaoleta watoto wao kwa chanjo au wanaokuja kwa kliniki kwa sababu nyengine.

**Hiari ya kushiriki na siri ya utafiti**

Kushiriki katika utafiti huu ni kwa hiari yako. Ukiamua kutoshiriki hautanyimwa matibabu yoyote unayopokea. . Iwapo utataka kuacha kujibu maswali kabla ya kukamilisha maswali yetu, hiyo ni kwa hiari yako wala hutotozwa faini ya aina yoyote.

Kushiriki kwako katika utafiti huu utasaidia kuchangia katika kulielewa suali hili zaidi na kuchangia katika kupendekeza marekebisho yanayolenga shida za uzazi katika kaunti ya kakamega.

Majibu yote utakayopeana yatawekwa vizuri kwa siri. Majina yako hayataandikwa mahali popote. Tutatumia tu nambari ya utafiti peke yake. Watafiti pekee ndio wataruhusiwa kusoma maoni yako

Kushiriki kwako katika utafiti huu hatatakugharimu chochote, tumeweka mikakati kadhaa ya kusaidia kadri ya uwezo wetu ili kuhifadhi ushiriki wako katika utafiti huu. Tutakuomba nambari yako ya simu ambayo itatumika iwapo tungependa kufafanua majibu yako au kupendekeza tiba kulingana na afya yako

**Madhara na Manufaa ya utafiti huu**

Utafiti huu hauna madhara yoyote kwako. Majibu yako yatasaidia jamii kwa jumla kwa sababu itatujulisha sababu zinazozuia wamama kujifungua katika vifaa vya afya vya uma na njia za kuboresha huduma hizi.

**Matatizo au maswali:**

Ukiwa na maswali yoyote kuhusu utafiti au matumizi ya matokeo unaweza kuwasiliana na mpelelezi mkuu, Daktari Linda Chiriswa nasengo kwa kupiga nambari 254-721978747.

Kama una maswali yoyote juu ya haki zako kama mshiriki katika utafiti huu, unaweza kuwasiliana na Professor Chindia M.L, katibu, KNH/UoN- ERC,simu. 2726300 ,Ext. 44102, Nairobi

**Kukubali kwa muhojiwa**

Nimeisoma au nimesomewa fomu hii ya kutoa idhini ya kushiriki katika utafiti huu. Nimeelewa manufaa yake na athari za kushiriki kwangu. Nimekubali kushiriki na nafahamu kuwa ninaweza kutoendelea kujibu maswali iwapo sitapenda kuendelea kushiriki katika utafiti huu. Nimefahamu kuwa wanatafiti watajitahidi kadri ya uwezo wao kutonitambulisha nje ya utafiti huu na kutia sahihi kwangu haimanishi kuwa nimepoteza haki zangu kama mshiriki katika utafiti huu.

Jina la mshiriki: ----- sahihi: -----

Tarehe: -----

**Appendix 4: KNH/UON ERC APPROVAL FORM**

**Appendix 5:KAKAMEGA COUNTY REFERRAL HOSPITAL APPROVAL FORM**