

**FACTORS ASSOCIATED WITH UPTAKE OF
POSTPARTUM FAMILY PLANNING METHODS
AMONG POSTPARTUM WOMEN IN MUHORONI SUB-
COUNTY, KISUMU COUNTY, KENYA**

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**Factors Associated With Uptake of Postpartum Family Planning
Methods among Postpartum Women in Muhoroni Sub-County,
Kisumu County, Kenya**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for
the Degree of Master of Science in Public Health of the Jomo
Kenyatta University of Agriculture and Technology**

2022

DECLARATION

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

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DEDICATION

I dedicate this thesis to my parents, Charles Ooko and Pamela Olik. You have walked with me through the journey and both of you are great mentors.

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ABBREVIATIONS AND ACRONYMS

DMPA	Depomedroxyprogesterone acetate
FGDs	Focused Group Discussions
IUD	Intrauterine Device
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KDHS	Kenya Demographic Health Survey
MEC	Medical Eligibility Criteria
MOH	Ministry Of Health
PPFP	Postpartum Family Planning
TO	Tubal Occlusion
UNFPA	United Nations Population Fund
WHO	World Health Organization

DEFINITIONS OF OPERATIONAL TERMS

Family planning	It is the use of a method of contraception to prevent bearing of more children or to increase the age gaps between children.
Infecund:	It is the inability of a woman to bear children.
Percentage of demand satisfied by modern methods	It is total number of people who use modern methods of family planning divided by the sum of those whose need for family planning has not been satisfied plus total contraceptive use.
Percentage of demand satisfied	It is the total number of people using contraceptives divided by the number of people whose need for family planning is not met plus total contraceptive use
Postpartum family planning	It is the initiation and use of contraceptive methods during the first year after delivery. The aim is to prevent unintended and closely spaced pregnancies.
Postpartum period	The postpartum period is the period commencing immediately after the birth of the baby and has duration of 42 days. During this period, the woman recovers from the changes and stresses her body went through during pregnancy and delivery, facilitating the restoration of the non-pregnant state.
Total demand for family planning	the sum of those whose need for family planning has not been satisfied plus total contraceptive use.

Unmet need

the sum of those who have unsatisfied desire to gap their future pregnancies plus the sum of those who have unsatisfied desire to stop childbearing or delay.

Uptake

taking up or making use of something that is available.

ABSTRACT

In most developing countries mostly in Africa and the in the middle east, the level of contraceptive uptake has been low which is attributed to poor health infrastructure and lack of good transportation networks that hinder access to family planning services. Pregnancies within the first 12 months after a birth are at the highest risk for adverse health outcomes to the mother and child which could lead to potentially unsafe induced abortion and are at elevated risk for giving birth before 28 weeks, giving birth to dead babies, giving birth to children who have a birth weight of less than 2800 grams and also giving birth to babies who are smaller than their gestational age. The study aimed to determine the factors associated with uptake of postpartum family planning methods in Muhoroni Sub-County of Kisumu County, Kenya. A descriptive cross-sectional study was used to collect data from the postpartum women with the use of structured questionnaires, focus group discussion and key informant interviews. Data were analyzed using descriptive and chi square test for comparison. 210 women participated in the study. Majority of the women were between the age of 25-29 with the prevalence of Postpartum Family Planning (PPFP) being 52.45%. The significant factors at $p < 0.05$ level were age (OR 0.77, 95% CI 0.60-0.99), education (OR 1.92, 95% CI 1.28-2.88) and employment (OR 1.12, 95% CI 1.12-2.28). Majority of the women are undecided as to the method of postpartum contraception they would opt for. This could either be due to limited knowledge of the available contraceptive methods or the influence of language barrier given that large numbers with diverse ethnicity and levels of education. Barriers to uptake of postpartum family planning were breastfeeding, distance to health facility, health system factors, side effects, perception of other people and male involvement. The need to engage partners and religious leaders in clarifying misguided information and misconceptions regarding contraceptive use may help improve the women's uptake and utilization of contraceptives in the postpartum period as this clearly has shown benefit in reducing maternal and neonatal morbidities and mortalities.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Postpartum family planning (PPFP) is the introduction of use of methods of contraception within the first 12 months following delivery to prevent closely spaced and unintended pregnancies (WHO, 2015). Pregnancies within the first 12 months after a birth, a birth-to-pregnancy interval of less than 12 month, are at highest risk for adverse health outcomes to the mother and child (Cleland, 2012) which are much more likely to end in potentially unsafe induced abortion (DaVanzo, 2007) and are at elevated risk for stillbirth, preterm birth, low birth weight, and small size for gestational age. Closely spaced births are also linked with increased likelihood of chronic undernourishment, stunted growth, and infant mortality (Rutstein, 2008). Because of these serious health risks, spacing pregnancies at least 2 years apart can avert an estimated 10% of infant deaths and 21% of deaths in children ages 1 to 4 globally (Cleland, 2012).

Contraceptives are used by 63% of married and reproductive women worldwide. Uptake of family planning in Africa in 1970 was 8% but there was an increase to 36% by 2017. At least one in ten married or childbearing women in most regions of the world have desire to stop or delay childbearing but are not using any method of contraception to prevent any future pregnancies. Worldwide, the demand for contraceptive methods has been satisfied by the use of modern methods. With the increase in demand for contraceptives, women should be given information, educated and counseled on how to use them. This will help to reduce the unmet need and increase the total demand. (Bongaarts, 2014). Information, education and counseling activities will be beneficial in Sub-Saharan Africa because of the low uptake and the high unmet need for contraception.

Since the early 2000s, the proportion of women reporting unintended pregnancy has been rising in Tanzania and Uganda; declining in Kenya and Ethiopia; and fairly stable in Rwanda. Reporting of unintended pregnancy among women of reproductive

age is currently highest in Kenya, Rwanda, and Uganda and lowest in Ethiopia and Tanzania. The relationship between contraceptive prevalence and unintended pregnancy in the sub-region is complex. In Uganda and Tanzania, unintended pregnancy is rising despite growing contraceptive prevalence. (Rutaremwya, 2011). The reverse is true in Kenya, where there is a reduction in unintended pregnancies with a high rate of uptake of contraceptives (Jalang'o, 2017). The incidence of unintended pregnancy in Rwanda has not been significantly affected by improvements in contraceptive prevalence (Izugbara, 2018).

During the postpartum period, the healthcare providers come into multiple contacts with the women during child immunization and growth monitoring services, yet there is still a high rate of unmet needs (Ndugwa, 2011). A study conducted by Ross, 2002 showed that only 25% of women in Kenya had started to use PFP by six months and 35% at one year. The World Health Organization (WHO) describes the postnatal period as the most critical and yet the most neglected phase in the lives of mothers and babies and most deaths occur during this period (WHO, 2014). Worldwide, there are 265 million unwanted pregnancies, 110 million unnecessary abortions, 590,000 avoidable maternal deaths and 8 million preventable infant deaths (Ross, 2002). Sub-Saharan Africa has a high fertility rate which is attributed to its low uptake of family planning methods (Audu, 2006).

Eighteen percent of Kenyan children are born less than 24 months after a previous birth with the most common birth interval being at 24-35 months (32 percent), while the least common birth interval is at 7-17 months (7 percent). The median birth interval is at 36.3 months, a slight increase from 33.1 months in the 2008-09 KDHS (KDHS, 2014). In Kisumu County, 47.7% of the births occur between 7-35 months with the most common interval being 24-35 months at 31%, the contraceptive uptake level is 62.4%. The county is characterized with high fertility rate, low per capita income and high child mortality rate (KDHS, 2014). Hence, investigation of context-specific magnitude and determinants of PFP utilization will help to design and implement evidence-based context-specific interventions. Moreover, the level of PFP knowledge and utilization in Muhoroni Sub-County is unclear. Hence, this

study aims to fill the research gap by assessing the knowledge, utilization, and associated factors of PPF among postpartum women.

1.2 Statement of the problem

Postpartum women are among those with the greatest unmet need for Family Planning (FP). Yet they often do not receive the services they need to support longer birth intervals or reduce unintended pregnancy and its consequences. The first twelve months after birth are very critical. When a woman becomes pregnant, the mother and the child are exposed to adverse health outcomes which could lead to unsafe induced abortion for the mother and risk for stillbirth, preterm birth, low birth weight, and small size for gestational age for the child (Cleland, 2012). Lack of adequate birth spacing intervals has been noted to lead to undernourishment, stunted growth, and infant mortality.

In Kisumu County, 29.8% of the births occur between 7-35 months with the most common interval being 24-35 months at 31%, the contraceptive uptake level is 62.4%. The county is characterized with high fertility rate, low per capita income and high child mortality rate (KDHS, 2014).

1.3 Justification

World Health Organization (WHO) shows an increase in women who are able to get contraceptive methods and use them. However, in most developing countries, the level of contraceptive uptake has been low due to poor health infrastructure and lack of good transportation networks that hinder access to family planning services (UNFPA, 2012). The recommended time for the initiation of contraceptives in the postpartum period is 4 weeks after delivery (MOH, 2017). Adequate space intervals between pregnancies contribute to the fertility rate of women and also the health outcomes of the mother and child. Children born less than 24 months after a previous birth are at a higher risk of poor health and this can threaten the maternal health. Spacing of pregnancies appropriately could help prevent adverse maternal and perinatal outcomes (Conde, 2007). A comprehensive postpartum family planning (PPFP) service should therefore enable women make adequate and informed choices on a

preferred contraceptive method, starting that method while encouraging them to use that method for two years or more depending on their reproductive intentions (RCOG, 2015). The purpose of PPFPP will be to help women to decide on the contraceptive they want to use, to initiate that contraceptive, and to continue contraceptive use for 2 years or longer, depending on the reproductive intentions of the woman or couple.

The findings of this research will be used to inform on how to improve the uptake of postpartum family planning in Muhoroni Sub-County Hospital and in Kisumu County. This will be achieved by informing healthcare providers and decision makers of the most appropriate directions for their efforts and the most effective ways to allocate the available financial and personnel resources towards improving the health outcomes of postpartum women in Muhoroni Sub-County Hospital and Kisumu County.

1.4 Research Questions

1. What is the proportion of postpartum women taking postpartum family planning in Muhoroni Sub-County, Kisumu County, Kenya?
2. What are the socio-demographic and socio-economic characteristics of postpartum women associated with uptake of postpartum family planning methods in Muhoroni Sub-County, Kisumu County, Kenya?
3. What are the contraceptive methods used by postpartum women in Muhoroni Sub-County, Kisumu County, Kenya?
4. What are the barriers to uptake of postpartum family planning among the postpartum women in Muhoroni Sub-County, Kisumu County, Kenya?

1.5 Objectives

1.5.1 Broad Objective

To determine factors associated with uptake of postpartum family planning methods in Muhoroni Sub-County, Kisumu County, Kenya.

1.5.2 Specific Objectives

1. To determine the proportion of postpartum women using postpartum family planning in Muhoroni Sub-County, Kisumu County, Kenya.
2. To determine the socio-demographic and socio-economic characteristics of postpartum women associated with uptake of postpartum family planning methods in Muhoroni Sub-County, Kisumu County, Kenya.
3. To determine the contraceptive methods used by postpartum women in Muhoroni Sub-County, Kisumu County, Kenya.
4. To determine the barriers to uptake of postpartum family planning among the postpartum women in Muhoroni Sub-County, Kisumu County, Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Postpartum Period.

The postpartum period is the period commencing immediately after the birth of the baby and has duration of 40 days. During this period, the woman recovers from the changes and stresses her body went through during pregnancy and delivery, facilitating the restoration of the non-pregnant state. The new mother tries to understand and adopt to her new role for the care and nurture of her baby. Both parents experience a period of transition to the new family life. The physiological adaptations of the postpartum period include the recovery from birth, the healing of the episiotomy or the caesarean section wound, the lochia and the establishment of lactation for the mothers who choose to breast feed their babies. During the postpartum period new mothers may have to deal with a variety of emotions varying from love and happiness to panic, guilt, fear or depression. The health care team should focus on promoting the physical and emotional health of the mother, her infant and the new family. They should identify promptly and take appropriate action if there is deviation from normal physiological or psychological adaptation. Moreover, they should support and strengthen the new mother's and new father's confidence and facilitate their transition to parenting role and provide information and guidance concerning adequate care and feeding of the newborn (Panagopoulou, 2017).

WHO (2013), recommends the uptake of the following methods after childbirth: Immediately after delivery to 6 months, a woman exclusively breastfeeding can use the lactational amenorrhea method (LAM) and several other methods safely. If a mother chooses LAM, she should transition from LAM to another modern contraceptive method by the time the infant reaches 6 months of age, or sooner if LAM criteria (WHO 2009) are not met. She should be provided information in a timely manner to enable her to choose another modern contraceptive method. A copper-bearing intrauterine contraceptive device (IUD) can be inserted immediately after delivery or up to 48 hours after birth, or any time after 4 weeks post-delivery.

Female sterilization or tubal occlusion (TO) can also be done as a method of family planning if the woman consents to it. For those who are not breastfeeding, progestogen-only methods can be started after delivery. Combined oral contraceptives can be introduced after 6 months. For breastfeeding women, progestogen-only pills, injections, implants can be given at 6 weeks post birth. Combined estrogen and progestin pills cannot be introduced until 6 months after birth. All women, breastfeeding or not, can use condoms immediately after birth, emergency contraception after 4 weeks, and the diaphragm or cervical cap after 6 weeks (WHO, 2013).

2.2 Proportion of postpartum women using postpartum family planning

According to KDHS (2014), unmet need for family planning refers to women of childbearing age who are not on any method of family planning but they wish to postpone their next birth or stop childbearing altogether. Eighteen percent of married women have an unmet need for contraception, with 9 percent having an unmet need for spacing and 8 percent having an unmet need for limiting. Fifty-eight percent of women have a met need for family planning. Currently, 77 percent of the family planning needs of married women are being met. Unmet need is 20% in rural areas and 13% in urban areas. North-eastern region has the highest unmet need of 30% while central region have the lowest unmet need of 9%. Unmet need decreases with an increase in knowledge levels whereby women with no education have a higher unmet need than those who are educated. It also declines steadily as household wealth increases, from 29 percent in the lowest wealth quintile to 11 percent in the highest quintile. Total demand for family planning is highest among women age 35-39 (82 percent) and lowest among women at the beginning (age 15-19) and end (age 45-49) of their reproductive years (each 61 percent). Demand for family planning does not vary much by urban-rural residence; however, there are wide variations by region. North Eastern has the lowest demand (33 percent) and Eastern the highest (83 percent). Women with no education (47 percent) and women in the lowest wealth quintile (60 percent) have a lower demand than their more educated or wealthier counterparts.

Zafar (2014), found that twenty percent of the married women's family planning services need has been unmet due to poor health system related factors that may have affected the country's family planning programs. Gaffield (2014), found that postpartum women have high unmet need for both limiting and spacing methods. Given their high unmet need and the benefits of longer pregnancy intervals, postpartum women should be encouraged to use contraception as much as, if not more than, non-postpartum women, and barriers to use should be studied further.

2.3 Socio-demographic and socio-economic characteristics associated with uptake of postpartum family planning.

Ujah et al. (2017) found that most women, who intended to use a postpartum family planning method were aged 31-35 years they had post-secondary education, 2-4 children alive, married for 2-5 years, were Christians and their pregnancies were intended. This showed that the women's age, level of education, parity, religion and duration of marriage plays an important role in uptake and utilization of PPF. Utilization of postpartum family planning was closely associated with women's level of education, income status, religion, age, number of living children, exposure to the media and utilization of reproductive health services (Rutaremwana et al., 2015).

Eliason et al. (2014), found that distance to healthcare facilities affects the uptake of PPF. Those within a distance of less than 5 km away were more likely to use family planning methods as opposed to those within a distance range of more than 5 km. This finding differs with a study in done Nigeria which showed that 40% of women interviewed did not attend the clinic nearest to their homes due to lack of better services (Mensch,1994).

Almost half of all married women in reproductive age have never used any contraceptive methods and the prevalence estimates remain higher than many developing countries with similar or worse socio-demographic profiles (Khan, 2015). The number of living children has been shown to be an important factor affecting use of contraceptives. Those who have one child is estimated at 13%, two children is 22% and three children or more is 27% (Ojaka, 2008).

Eliason et al. (2014), found out that women with some formal level of education were found more likely to use modern methods of contraception than those with no formal education. A similar relationship was shown among their partners. A study by Stephenson et al. (2007) revealed that post-primary education was associated with increased odds of modern contraceptive use. The education level of a woman had a significant effect on the contraceptive use and it is shown that the better educated women are, they may delay to marry and freely discuss about family planning use with their partners or spouses. According to Stephenson et al. (2007), literate women were more likely to use contraceptives than illiterate women. The literate women had a relative high awareness and opportunities to have information from various sources about the contraception. Increase in the education level also raised the chances of using contraception than it did to those who had education, because low education level was associated with lack of awareness and acceptability of family planning services and these contributed to the usage of contraceptives. The knowledge level was seen to influence the accessibility level and acceptance to family planning methods Literacy, particularly female literacy is seen to influence awareness level and acceptance of family planning method in this study (Jamie, 2006).

There is a close relationship between per capita income, knowledge and acceptance of family planning methods. Higher monthly income is associated with higher knowledge and use of family planning methods (Hussain, 2011). Women's employment status influenced PPFp uptake. Women who were employed were more likely to adopt PPFp (Jalango, 2007). Helweldery, (2004) found that occupation often contributes to decision making hence contributing to the uptake of PPFp among postpartum women. The employment status among women has been shown to increase the status of women and gives them a higher level of freedom in the decision making process. Women who were working showed a higher probability of using PPFp than women who were not working.

2.4 Contraceptive methods used by postpartum women.

According to KDHS (2014), women are more familiar with modern methods of contraception (98 percent) than with traditional methods (84 percent). The most

widely known modern methods of contraception among women are the male condoms, injectables and the pill. The least known methods among women are the lactation amenorrhea method (LAM), male sterilization and emergency contraception. The traditional methods known to most women are the rhythm method and the withdrawal method.

Jalango (2017), found that a high percentage of women attending the family planning clinics preferred the DMPA injection. Women with secondary education and above were more likely to opt for long term methods as compared to those with primary education and below. According to Weisband (2017), on a study on intentions on contraception use and method choice among breastfeeding women attending a university hospital in Ohio, most respondents reported interest to use PPF. Among those who reported this intention, 55% planned to begin using a method before hospital discharge or within 6 weeks postpartum. An additional 35% preferred to begin the use of contraception between 6 weeks and 6 months. Intrauterine devices (IUDs) were the most commonly reported planned contraceptive method (24%), followed by condoms (23%), combination oral contraception (13%), and progestin-only contraception (12%). Among women who reported planning to begin using a method before hospital discharge, the most common method choices were female sterilization (38%) and implants (38%), followed by injectables (12%), male sterilization (6%) and intrauterine devices (IUD) (6%). Only 21% of women indicated breastfeeding safety as the reason for choosing the type of method they wanted to use with 35% citing convenience.

Ujah et al. (2017) found that 25.9% of the postpartum women were undecided about their preferred choice of contraception. However, 19.2% preferred to use the subdermal implant, 18.4% injectables, 14.7% intrauterine contraceptive device, 7.9% preferred a natural method, 5.6%, 4.14% wanted to use the male condoms and only 3.8% wanted a permanent method of contraception. Rahmanpour et al. (2010) found that the most preferred contraceptive used after delivery were the minipill and the intrauterine contraceptive device while in the study by Chaovisitsaree et al. (2012) DMPA and the progestin only pills were the preferred PPF methods. In a similar Nigerian study by Adegbola (2009), the condom and the IUD were the most

preferred. The oral contraceptive pills tend to be preferred compared to the implants and the intrauterine contraceptive device since they are easily affordable, readily accessible and do not necessarily require a skilled provider (WHO, 2014).

Peterson (2000), found that breastfeeding can be used as a preferred method of PPF if the baby is breastfed exclusively, during absence of menstrual and for 6 months after birth. A study conducted by Pasha et al. (2001) showed that women who had no desire to have more children in the future were on short term methods hence need for improvement for counseling services to promote long acting methods.

2.5 Barriers to utilization of postpartum family planning among postpartum women.

Ikechebelu (2005) found that husband disapproval contributed to poor uptake of PPF. They believed it would lead to immorality and also make them look weaker in the houses. In a study in Kenya by Wambui (2009) revealed partner's influence was found to be a barrier, based on the husband's authority to decide on the number of children and method of contraception to be used. Some of the methods were not accepted because they were associated with poor health, infertility, birth defects, infidelity and promiscuity. A study in Nyanza, Kenya by Naomi (1997) established that women do not have the authority to make the decision on the start and discontinuation to use any method family planning. The choices are usually made by their husbands, people in authority and have influence in the community or household. Much of this opposition, they said, was due to lack of adequate knowledge on the side effects of contraceptives and cultural beliefs around sex and fertility.

Ochako (2015), found that side effect, myth and misconceptions, spousal refusal, religion and lack of education were the challenges mentioned by a majority of women as one of their greatest fears. The main side effects mentioned by the women were weight gain, lack of sexual desire or arousal, constant headaches and an increase in their blood pressure. KDHS (2014) found that 36% of women reported having stopped using a method of contraception within the first 12 months due to side effects; and 16% of married women not currently using any method due to fear

of developing any side effects. In a study by Oindo (2002), health providers and other sources of educational health information were rarely mentioned as a source of information about family planning. Instead, peers and neighbors were the main sources of information, and their perceptions influenced the decision to use any method of contraceptives or not. The sources often propagated myths such as infertility, birth defects and over exaggerated side effects.

Eltomy (2013) found that 8.2% of the women did not use family planning because it was not accepted in their culture and religion. Culture and religion are very influential factors in our society and for a program to be successful, they have to be taken into consideration and respected. Esike (2017), found that despite the high level of awareness of family planning, majority of the participants, 71.4% did not think they have enough information on family planning and 95.5% needed more information. This was confirmed in a study by Ujah et al. (2017) that observed that majority of the women were undecided as to the method of postpartum contraception they would opt for due to limited knowledge, language barrier given that large numbers with diverse ethnicity and levels of education seek care at the health facilities. The use of injectables in Ghana in a study by Eliason et al. (2013) was associated a number of health-related myths and misconceptions. A common misconception is that the injectables reduce breast milk and should not be used postpartum until menstruation resumes. Hussain (2011) found that fertility related reasons were the most reported reasons that affected the family planning services utilization among participants. Religious opposition appeared to be an important barrier to poor uptake of PFP methods which accounted for 7.6 per cent of the non-users. The most reliable methods were not used due to misperceptions and concerns about their health. These were health concerns, fear of side effects, distance to the facilities, too much costs and health care provider bias. Knowledge and sources of family planning methods also played a role non-utilization of family planning due to respondent's lack of knowledge on the type of method or they did not know the source of family planning methods.

2.6 Conceptual framework

The following is a conceptual framework of the determinants of postpartum family planning use among postpartum women in Muhoroni Sub-County.

Independent variables

Dependent variable

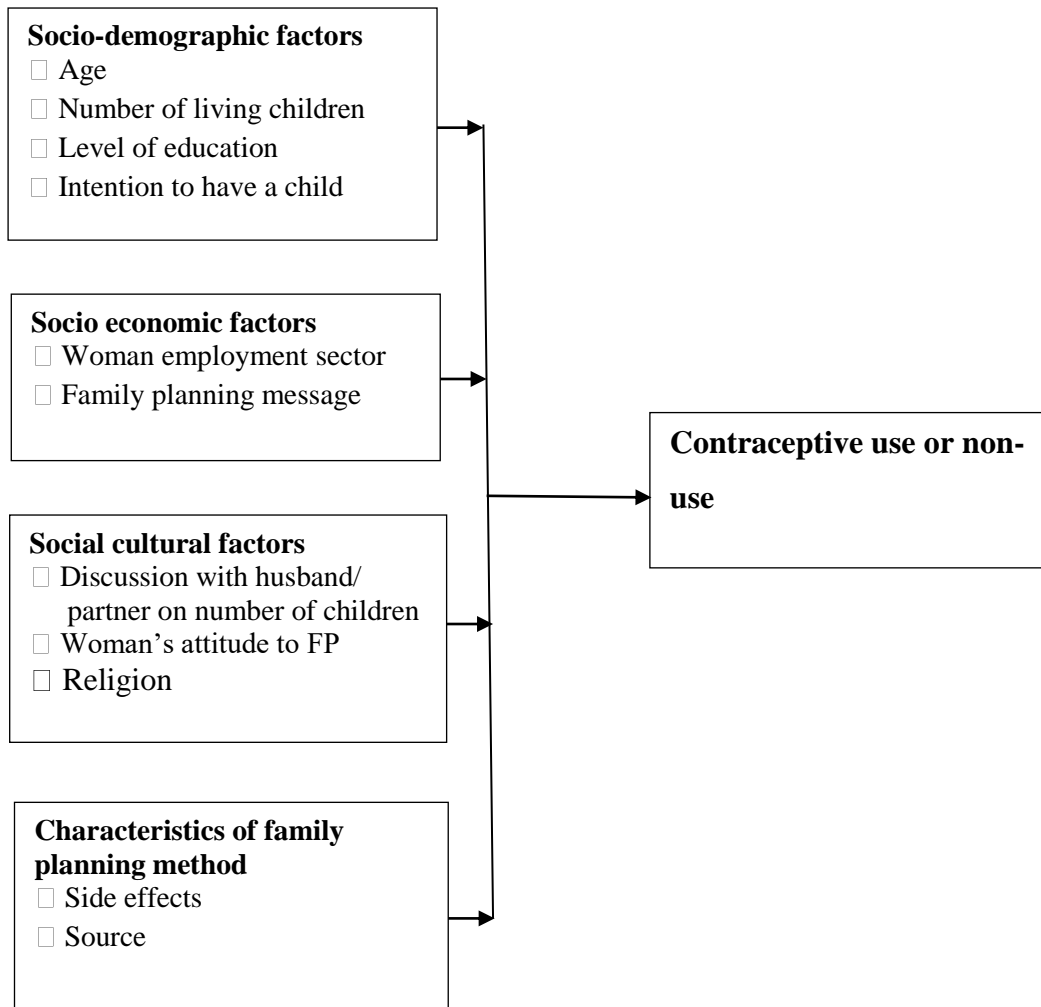


Figure 2.1: Conceptual framework; Adapted from Altakhuyagiin *et al.* (2003)

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study area

The study was conducted at Muhoroni Sub-County, Kisumu County. About 44% of its total population lives in an urban area (Census, 1999). Muhoroni Sub-County has five wards namely: Fort Ternan, God Nyithindo, Koru, Muhoroni Town and Owaga.. Muhoroni has 31 health facilities, the largest is Muhoroni sub-district hospital which is operational 24 hours. Most of the residents live in semi-permanent houses and majority of the employed people in the region work in Muhoroni sugar factory. The Sub-County is located 50 kilometres east of Kisumu County.

3.2 Study design

This was a community based cross-sectional study design using quantitative and qualitative methods among postpartum women (individual) who are the women who were 4 weeks post-delivery up-to 24 months. Cross sectional design was used so as to give a snapshot of the status of uptake of PFP methods in the study location. Data was collected between 17th January and 29th march 2019.

3.3 Study population

The study target population were postnatal women between 4 weeks and 24 months postpartum in Muhoroni Sub-County. According to KDHS (2014), the modern contraceptive uptake rate in Kisumu County is 62.4%. This was used to help determine the sample size.

3.4 Inclusion criteria

The criteria used to enroll participants in the study included:

- Postpartum women between 4 weeks and 24 months postpartum.
- Willing and voluntarily give consent to participate in the study.

- Postpartum women between the duration of 4 weeks to 24 months living in Muhoroni Sub-County.

3.5 Exclusion criteria

The criteria for exclusion included:

- Postpartum women whose babies are less than 4 weeks or older than 24 months.
- Postpartum women who have no need for family planning.
- Those who needed to be included but declined to sign consent forms.

3.5.1 Sample size determination

Sample size in the study was determined using a single proportion formula (Cochran, 1977). As follows,

$$N_o = \frac{z^2 pq}{e^2}$$

Where; N_o = sample size when population is more than 10,000

z = the standard normal deviate at the desired confidence interval, in this case it is 95% confidence interval hence the standard normal deviate is set at 1.96

p = is the estimated proportion of the population with the desired characteristics. 62.4% (0.624) which is the modern contraceptive uptake rate in Kisumu County (KDHS, 2014).

q = is the proportion of the population estimated not to have the desired characteristics whereby ($q=1-p$). Hence found to be 37.6% or 0.376.

e = the desired degree of precision/accuracy which will be set at 5% (0.05)

$$n = \frac{1.96^2(0.624)(0.376)}{0.05^2} = 361 \text{ women}$$

Since the study population was less than 10,000 sample adjustment was done. The correction formula is;

$$n = \frac{n_0}{1 + (n_0/N)}$$

Where n= final sample size

n_0 = the initial sample size

N= Assumed study population of 500

$$n = \frac{361}{1 + (361/500)} = 210 \text{ women}$$

3.5.2 Sampling for key informants and focused group discussions.

All (6) health workers at the mother and child clinic directly involved in patient care were sampled purposively as key informants since they were directly involved in managing the postpartum women to give in depth knowledge on PPF.

Four groups of postpartum women were formed to take part in discussions since they are the ones who were on a method of PPF. The breakdown of the study participants in the qualitative data collection approaches are outlined in Table 4.6.

3.6 Study variables

3.6.1 Independent variables

Age, sex, religion, occupation, intention to have a child, number of living children, marriage status, discussion with husband/partner on number of children, woman's highest level of education, woman/wife's attitude to family planning.

3.6.2 Dependent variables

Dependent variable was use of postpartum family planning or non-use. It's measured by the proportion of postpartum woman aged 4 weeks to 24 months using family planning method among those that participated in the study.

3.7 Sampling procedure

Multi-stage and simple random sampling was done. At first stage, postpartum women aged 4weeks to 24 months were clustered by sub-county level with Muhoroni sub-county randomly selected based on having contraceptive rate close to the regional average and at second stage, postpartum women aged 4weeks to 24 months were clustered by sub-county wards with Muhoroni town randomly selected based on urban and peri-urban population distribution and then simple random sampling of all enlisted households in Muhoroni town were randomly selected to participate in the study.

3.8 Data collection tools

Quantitative data was collected using a semi-structured questionnaire which had four parts; Part A was the socio-demographic details, Part B captured the Contraceptive methods known, Part C captured the contraceptive methods used and Part D was to capture the barriers to utilization of PPF. The questions were formulated in both open ended and close ended forms.

Qualitative data was collected by use of the Key Informants and FGDs. Key informant interview guide had three questions; experiences on PPF, challenges when it comes to uptake of PPF and experiences with family planning counselling practices. FGD interview guide had five questions including; Availability of PPF methods, Knowledge on the family planning methods, views on the PPF, barriers that hinder uptake and how they can be removed and availability of the PPF methods.

3.8.1 Validity and Reliability of the tools

A pilot study for testing of the tools was done on all the data tools in Rachuonyo Sub-County, Homabay County. The choice of this pre-test site was based on its similarity to the actual study location. The reliability was computed based on the Cronbach alpha, such that an alpha value of above 0.7 was considered reliable. Experts in the area of study were consulted throughout the construction of the tool. Colleagues and research assistants evaluated the tool for face validity.

3.9 Data collection procedure

The participants were requested and explained to the need to participate in the study where consent of the participants was obtained by completing a consent form. All who consented to participate in the study completed the research questionnaires.

The researcher was responsible for conducting all the interviews assisted by research assistants who had been trained on how to collect the data. All FGDs were conducted in closed meeting rooms of the respective health facilities. Only the moderator and two research assistants, one taking notes, were present in the FGDs to maintain confidentiality and reduce bias. The moderator first explained the objective of the FGD and introduced the research team to the participants. The research assistants were familiar with the reasons for conducting the research and a relationship with the research team had already been established. The FGDs took around 40 to 45 min to complete. All FGDs were audio recorded and field notes were transcribed by hand.

Data was downloaded on a password protected computer to limit unauthorized access to data and protection from loss was achieved by backing up the data on password protected google and hard disks.

3.10 Data analysis and management

Data was stored in a password protected computer to limit unauthorized access and protection from loss was achieved by backing up password protected data on google drive and hard disks. The collected data was coded, entered into the computer, cleaned and analyzed using the Statistical Package for the Social Sciences (SPSS)

software, version 23. The analysis was done at three levels; univariate, bivariate and multivariate analysis.

Descriptive statistics were calculated to generate summarized statistics for continuous variables whereas frequency tables was used to summarize categorical variables. Bivariate analysis was done to establish association between independent and dependent variables. Chi square tests of association and Odds ratio were calculated. Multivariate analysis was used to establish the relationship between the dependent variable and independent variables that turned out to significant at bivariate analysis level.

Qualitative data from Key informant interviews and focus groups was analyzed using Atlas.ti 6.2 software. Grounded theory approach with inductive reasoning (McCallin, 2009) was applied to help with exploration of the barriers from the participants' point of view, about their believe rather than testing a pre-existing theory. Inconsistent results were reviewed by the coders until a consensus is reached. The data was then presented through explaining the findings in a narrative way.

3.11 Ethical considerations

Ethical clearance was sought from Scientific Steering Committee and Ethical Review Committee of University of East Africa Baraton and approval from Kisumu County research department. Participant's voluntarily participated. Written informed consent was obtained from the study participants. There was no risk of harm to the participants. Confidentiality, anonymity and privacy were fully guaranteed throughout the study. The patients were set free to participate without coercion and there was no monetary benefit to the patients except gain knowledge on PFP. Interview was conducted in enclosed rooms this ensured privacy and the questionnaire was translated to Kiswahili for ease communication and understanding of the questions. Hospital protocols and regulations were adhered to while collecting the data.

CHAPTER FOUR

RESULTS

The results presented in this chapter were obtained from both quantitative (questionnaires) and qualitative (focused group discussions) sources. A total of 210 postpartum women took part in the study at Muhoroni Sub-County 40 postpartum women participated in FGDs. We collected both quantitative and qualitative data between July 2019 and October 2019. The following sections provide the detailed analysis of the data. PFP was defined as the initiation and use of contraceptive methods during the first year after delivery. The aim is to prevent unintended and closely spaced pregnancies.

4.1 Social Demographic characteristics of study participants

A total of 210 postpartum mothers were interviewed giving 100% response rate. The mean age of the study participants was 26.2 with a standard deviation (SD) of ± 3 years with the age range of 15 to 49 years. The majority of the study participants were married 121 (58.1%) and 121 (57.6%) were protestant by religion. On level of education, 89(42.4%) were educated up-to secondary level nearly half of the study participants were self-employed 104 (49.3%). (Table 4.1).

Table 4.1: Social demographic characteristics of study participants

Characteristic	N= 210
	N (%)
Marital Status	
Single	59 (28.1)
Married	1 21 (58.1)
Divorced	30 (13.8)
Education level	
Primary	88 (41.9)
Secondary	89 (42.4)
Tertiary	33 (15.7)
Age	
15-19	13 (6.2)
20-24	36 (17.1)
25-29	101 (48.1)
30-34	36 (17.1)
35-39	15 (7.1)
40-44	7 (3.3)
45-49	2 (1)
Employment Status	
Student	24 (11.4)
Housewife	61 (28.9)
Self-employed	104 (49.3)
Employed	22(10.4)
Religion	
Catholic	58 (27.6)
Protestant	121 (57.6)
Muslim	31 (14.8)

4.2 Proportion of postpartum women using postpartum family planning.

Overall, 97 (46.8%) postpartum mothers reported that they were already on a method of family planning post-delivery. About 60.2% of married women were not using any method of family planning. Whereas 30% wanted to delay childbearing for more than two years but they were not on any method of family planning. (Table 4.2).

Table 4.2: Uptake of postpartum family planning among postpartum women

Characteristic	Yes n (%)	n (%)
Marital Status		
Single	28 (28.9)	59 (28.1)
Married	54(55.7)	121 (58.1)
Divorced	15 (15.5)	30 (13.81)
Education level		
Primary	32 (33.0)	88 (41.9)
Secondary	46 (47.4)	89 (42.4)
Tertiary	19 (19.6)	33 (15.7)
Age		
15-19	8 (8.3)	13 (6.2)
20-24	23 (23.7)	36 (17.1)
25-29	44 (45.4)	101 (48.1)
30-34	12 (12.4)	36 (17.1)
35-39	8 (8.3)	15 (7.1)
40-44	1 (1.0)	7 (3.3)
45-49	1 (1.0)	2 (1)
Employment Status		
Student	14 (14.4)	24 (11.4)
Housewife	22 (22.7)	61 (28.9)
Self-employed	45 (46.4)	104 (49.3)
Employed	16 (16.5)	22(10.4)
Religion		
Catholic	19 (19.6)	58 (27.6)
Protestant	65 (67.0)	121 (57.6)
Muslim	13 (13.4)	31 (14.8)
Period of waiting		
Less than one year	26 (26.8)	44 (21.0%)
One to two years	27 (27.8)	62 (29.5%)
More than two years	23 (23.7)	59 (28.1%)
I don't know	21 (21.66)	45 (21.4%)

4.3 Social Demographic Characteristics associated with uptake of Postpartum Family Planning

Univariate analysis was conducted in the study to establish the socio-demographic and socio-economic characteristics associated with uptake of postpartum family planning methods in Muhoroni Sub-County. After the univariate analysis, the significant factors were transferred to do multivariable analysis, which in this study is logistic model. The significant factors at $p < 0.05$ level were age (OR 0.74, 95% CI 0.58-0.958), marital status (OR = 1.56, 95% 1.03-2.34), education (OR 1.65, 95% CI 1.08-2.51) and employment (OR 1.53, 95% CI 1.07-2.19). (Table 4.3.1)

Table 4.3: Univariate Analysis

Use family planning	Odds Ratio	Std. Err.	z	P>z	[95% Conf. Interval]
Marital Status	1.561	0.325	2.14	0.032	1.038 2.348
Age Category	0.744	0.096	-2.29	0.022	0.578 0.958
Education level	1.650	0.355	2.33	0.020	1.083 2.514
Employment level	1.533	0.279	2.35	0.019	1.073 2.190
Religion	1.012	0.119	0.11	0.916	0.804 1.276
More children	1.194	0.197	1.07	0.283	0.864 1.649

Table 4.3 displays results of the multivariate analysis testing predictors associated with postpartum uptake among postpartum mothers. The overall model was statistically significant ($p < 0.05$) and age of the mother was significant at 0.05 level, secondary education was a significant factor, and the occupation of being a housewife was significant too. This has the implication that women who have attained secondary education are 1.96 times more likely to have postpartum uptake compared to those who have primary education. Women who are housewives are 0.243 less likely to have postpartum uptake compared to those who are employed.

Table 4.4: Multivariate Analysis

Use family planning	Odds Ratio	Std. Err.	z	P>z	[95% Conf. Interval]
Age mother education	0.9546698	0.030445	-1.45	0.146	0.8968253 1.016245
Secondary	2.636643	0.884471	2.89	0.004	1.366195 5.088501
Tertiary	1.809099	0.967896	1.11	0.268	0.6339517 5.162601
employment					
Housewife	0.6483423	0.569188	-0.49	0.622	0.1160175 3.623141
Self-employed	1.389569	1.15305	0.4	0.692	0.2732513 7.066398
Employed	2.291046	2.01053	0.94	0.345	0.4102546 12.79423
_cons	1.966208	1.813851	0.73	0.464	0.322393 11.9915

4.4 Contraceptive methods used by postpartum women.

Overall, 187 (89.1%) postpartum mothers indicated that the family method commonly known to them was the oral pills with the least 30 (14.3%) reporting that they know male sterilization. 41 (19.5%) of the postpartum mothers indicated that they are currently using implant as a method of family planning, 32 (15.2%) use injection, 27 (12.9%) use oral pills, 8 (3.8%) use female condom, 3 (1.4%) use lactational amenorrhea, 2 (1.0%) use IUD and 97 (46.2%) use none of the family planning methods. The postpartum mothers 42 (19.4%) reported that since delivery, they have gotten their method of choice of PFP from Government facility, 39 (18.1%) from private facility, 24 (11.1%) from faith-based organization and 4 (1.9%) from chemist/pharmacy. The main source of information of PFP was the hospitals with 150 (71.4%) indicated that the health system asks them about family planning preference, 175 (83.3%) indicated that the health system did talk about side effects of the family planning methods while 35 (16.7%) indicated that the health system workers did not talk about side effects of the family planning method. The postpartum mothers indicated the side effects of the family planning methods they use or they have ever used with 89 (42.4%) reported to experience heavy periods, 78 (37.1%) experience severe abdominal pain, 68 (32.4%) experience late period, 54

(25.7%) experience severe leg pain while the 38 (18.1%) experience no pain at all. Most of the study participants (76.2%) do not involve their spouse in family planning. Overall, 108 (51.4%) of the postpartum mothers reported that the health system give them a return date while 102 (48.6%) indicated that they are not given a return date.

Table 4.5: Knowledge and Uptake of contraceptive methods

Characteristics	Frequency	Percentage
Source of Family Planning		
Healthcare workers	158	75.2
Media	150	71.4
Family and friends	90	42.9
Method Known		
Oral Pills	187	89.1
Injection	169	80.5
Implant	160	76.2
IUD	91	43.3
Male condom	90	42.9
Female sterilization	59	28.1
Lactational Amenorrhea	50	23.8
Natural Family Planning	49	23.3
Female Condom	38	18.1
Male sterilization	30	14.3

4.5 Qualitative Data

The participants of the KII comprised of healthcare workers at the Muhoroni Sub-County hospital. In total, 6 healthcare workers participated. They represented different age groups and working experiences. The oldest was above 45 years of age and had over 25 years of working experience while the youngest was 26 years old and had working experience of less than a year.

The participants of the FGD comprised of a subgroup of postpartum who had participated in the quantitative study. In total, 24 postpartum women participated and each FGD group had six participants. They represented different age groups with the oldest being above 35 years of age and the youngest was 20 years old. FGD interview guide had four themes including; Knowledge on the family planning methods, views on the PFP, barriers that hinder uptake and how they can be removed and availability of the PFP methods.

Table 4.6: Summary of Key informants and Focus Groups participants

Key informants interview				
Professional Cadre	Male		Female	Total
Nurses	1		3	4
Clinic officers	1		1	2
Total Participants	2		4	6
Focus group discussions				
Characteristic	1 st group	2 nd group	3 rd group	4 th group
AGE				
20-24	1	1	3	2
25-29	2	1	2	2
30-34	3	2	0	2
35-39	0	2	1	0
TOTAL	6	6	6	6

Table 4.7: Theme from FGDs and KIIs

Themes	Categories	Code
1. Knowledge on PFP	General knowledge of PFP	New concept Personal experience
	Applied Knowledge on PFP	General Knowledge Misconceptions on PFP Personal perspective
2. Perception of PFP	Impression on the process	Length Content
	Usefulness	Most useful/impressive aspect
3. Challenges	Societal barriers	Misconceptions Social disparity
	Personal Fear	Personal fear
4. Suggestions	Process of counseling and administering PFP	Length of hospital visit
		PFP delivery Opportunities for peer teaching/learning
	Sustainability	Involving other stakeholders Continuity

4.6 Barriers to utilization of postpartum family planning among the postpartum women.

The study sought to investigate the barriers to utilization of postpartum family planning among the postpartum women. The barriers identified were; breastfeeding, distance to health facility, health workers availability and general attitude, availability of preferred method, husband or male partner perception towards family planning, health worker inexperience in providing different family planning methods, fear of side effects and perception of other people on family planning.

4.6.1 Breastfeeding

The respondents felt that it would affect the production of milk, as expressed in the verbatim:

“My neighbor told me that when you take the pills when breastfeeding the milk will dry on the breasts and you will not be able to breastfeed.” Participant 1D.

4.6.2 Distance to health facility

The study participants felt that sometimes the hospital is far to go for the family planning methods and they felt that they can get them from the pharmacies, as said by the participant 2E:

“I cannot waste my time and money to go for the family planning methods in a hospital since I can get the same methods in a nearby chemist.”

4.6.3 Health system factors

The respondents felt that the health care workers had an unfavorable attitude towards the women, according to the following:

“Some of those nurses are full of attitude as if they are not in the same predicament as ours.” Participant 3B.

Most of the respondents 80%, felt that some of the postpartum family planning methods were not available. A respondent put it that:

“Most of those health care workers ask us to choose the method of family planning knowing very well that the only thing available is the pills and I don’t want that.” Participant 4A.

Others felt that the service providers are not well skilled to provide the methods of family planning. According to one respondent:

“One of the nurses could not even remove the implant from arm and she had to cut me and spent over one hour removing it.” Participant 2F.

4.6.4 Male involvement

Majority of the respondents, 76% agreed that their male counterparts had a say on using family planning methods. One respondent said:

“My husband feels that the unfaithful ones are those who use the pills and he can’t allow me to use them.” Participant 1F.

The use of contraceptives was also associated with mistrust especially on the use of condoms where the respondents believed that their men felt that it means you don’t trust them. A respondent said:

“I cannot use condoms since I am married. We live together with my husband and I am not sleeping with any other person, so I don’t prefer them.” Participant 3A.

4.6.5 Fear of side effects

A total of four FGD were conducted where the common side effects expressed by the respondents were abdominal and leg pain, weight gain, bleeding, and lack of sexual desire.

A respondent indicated that after having the injectable she was in a lot of pain, she said:

“Immediately I got the injection, I started experiencing pain in the abdomen which was like the menstrual cramps” Participant 2A.

One respondent agreed that most of the methods caused weight gain, she responded:

“The injectables have always made me gain weight until I look undesirable which makes me insecure” Participant 1B.

In all the FGDs the respondents reported about bleeding during menstruation, as indicated by a respondent:

“After I got the implant inserted I bled for one month and sometimes it was like fresh blood.” Participant 3F.

It was noted among the respondents that the PFP reduce their sexual desire, with one respondent claiming:

“Some of these methods make me loose the sexual desire especially the pills” Participant 4A.

“Every time I start using the family planning methods I always feel cold during sexual intercourse with my husband and it affects our relationship.” Participant 4D.

4.6.6 Perception of other people.

The respondents reported that their use of the family planning methods was dictated by other people or sources of information. The respondents said they mostly learnt about the side effects and myths from other people especially their family members, peers, and sometimes their male partners. Most of them used pronouns like ‘he’, ‘she’, ‘others’, and ‘they’, to show that other people influenced their choices.

“Other people usually feel that these family planning methods are not safe and some don’t prevent pregnancies.” Participant K5.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Preamble

This chapter shows the findings from this study and how they relate with other studies in the following areas: socio-demographic, socio-economic, knowledge, uptake and barriers to utilization of PPFp.

5.1.1 Discussions and overall findings

The study sought to address an issue of global health concern and currently more in low and middle-income countries (UNFPA, 2012). In Kisumu County, 47.7% of the births occur between 7-35 months with the most common interval being 24-35 months at 31%, the contraceptive uptake level is 62.4%. The county is characterized with high fertility rate, low per capita income and high child mortality rate (KDHS, 2014).

Study findings revealed 46.8% of the study participants were on a method of PPFp. Significant factors included Age, level of education, and employment. Further insights were obtained from the focus group discussions. For instance, the participants reported that breastfeeding, distance to health facility, healthcare workers availability and general attitude, availability of preferred method, husband or male partner perception towards family planning were among the barriers to utilization of PPFp.

5.2 Proportion of postpartum women taking postpartum family planning.

The prevalence of postpartum family planning method (PPFP) use in this study was 46.8%. This finding was lower than that of a study conducted in: Addis Ababa Ethiopia where the prevalence of PPFp was 80.3% (Gebremedhin, 2018), Kenya, Nairobi 95.2% (Wairagu, 2013) and South Africa 89.0% (Crede, 2010). The discrepancy could be due to the presence of socio-economic differences, cultural variations, service accessibility and reproductive characteristics among participants.

For instance, literature documented that educational level has a direct relationship with PFP use (CSA, 2013). The possible reason for the difference in the prevalence of PFP use might be the difference in educational level of study participants. For example, the proportion of women who did not have any post primary education was lower (11.1%) than that of this study (42.9%). The proportion of women who had secondary education and above was higher (56.6%) in this study compared to (23.7%) of Uganda (Rutaremw, 2015) and 42.6% of rural Uganda (Sileo, 2015). The other possible reasons for the differences between this work and the study done in Uganda might be variations in spousal educational status and birth intention, not only women's educational level, but also that of their husbands can take part in PFP use. If spouses are educated, they can understand the benefits of having adequate space between births and encourage and advise on the use of family planning methods, which could contribute to the uptake of PFP.

Marital status of women might have contribution to the observed differences in the prevalence of PFP use. If a woman is married, she may have early postpartum sexual contact than those who are not married. So, there may be differences in risk perception between the two groups of women that risk perception relating to unwanted or mistimed pregnancy is expected to be high among married women than none married ones. The proportion of the participants who were married was lower (46.7%) than that of the study done in Ethiopia (Gebremedhin, 2018). Another possible reason for the difference in PFP use among postpartum women might be differences in peri-natal service utilization. Women who had history of antenatal and postnatal care visits might have better chances of getting counseling about contraceptive use. The proportion of mothers who had postnatal care visits was lower in this study (51.4%) than the study done in Addis Ababa, Ethiopia 80.3% (Gebremedhin, 2018).

The proportion of women who were not on any method of PFP and they felt they do not want any more children or that they want to wait two or more years before having another child and those mothers whose pregnancy is unintended are considered to have an unmet need for family planning. Conversely, women using a family planning method are said to have a met need for family planning. Both unmet

and met needs are categorized as such based on whether the need is for spacing or limiting births. The combination of women with unmet need and women with met need for family planning constitutes the total demand for family planning (EDHS 2011). The unmet need for family planning was 47.6%. It was relatively lower among married women at 24%. Approximately 27% of currently married women's need for family planning was met. Although, 46.7% of the currently married women had a demand for family planning, the unmet need for spacing was 35.7% and 11% for limiting. The unmet need in the current study is relatively higher than that of studies conducted in Nigeria and Sudan (Igwegbe, 2009) though lower than that of the study conducted in India (Bhattacharya, 2006). When it is compared with the latest demographic health survey in the country it is higher (KDHS, 2014). These differences might be because of the differences in the access to health services and awareness level of the communities. The findings can be a source of alert to be able to reduce the unmet need. The majority of the unmet need is the need for spacing whereby the mother doesn't want any child in the next two years and is not on any long acting method of family planning.

5.3 Socio-demographic and socio-economic characteristics of postpartum women associated with uptake of postpartum family planning methods.

Several socio-demographic and socio-economic characteristics of postpartum women were found to be associated with uptake of postpartum family planning methods. The significant predictors were age and employment status of the postpartum mothers. Majority of the women 101 (48.10%) were aged between 25 and 29, the least of the mothers 2 (0.95%) were aged between 45 and 49 years. 58.1% had attained secondary education, 28.6% had attained primary education and 13.3% had attained tertiary education. This was not the same case in a study by Ujah, (2017) which showed that women, who intended to use a contraceptive postpartum, the rates were higher among women who were aged 31-35 years (71.4%), had post-secondary education (67.3%), and had 2-4 children alive, married for 2-5 years (56.6%), were Christians (66.5%) and whose pregnancies were intended (60.8%). This suggests that women's age, level of education, parity, religion and duration of marriage play an integral role in uptake and utilization of postpartum contraception. This is also seen

in the study by Rutaremwa et al. (2015), which showed that utilization of modern postpartum family planning was significantly associated with women's education level, wealth status, religion, and age of the woman, number of surviving children, exposure to the media and utilization of reproductive health services.

Majority of the women had attained secondary education. This could be shown to influence the uptake of PFP. Eliason et al. (2014), found that women with some formal level of education were more likely to use modern methods of contraception than those with no formal education. A similar relationship was shown among their partners. A study by Stephenson et al. (2007) revealed that post-primary education was associated with increased odds of modern contraceptive use.

The knowledge level was seen to influence the accessibility level and acceptance to family planning methods. Literacy, particularly female literacy is seen to influence awareness level and acceptance of family planning method in this study (Jamie, 2006). The education level of a woman had a significant effect on the contraceptive use and it is shown that the better educated women are, they may delay to marry and freely discuss about family planning use with their partners or spouses. Literate women were more likely to use contraceptives than illiterate women. They also had a relative high awareness and opportunities to have information from various sources about the contraception. Increase in the education level also raised the chances of using contraception than it did to those who had education, because low education level was associated with lack of awareness and acceptability of family planning services and these contributed to the usage of contraceptives.

5.3 Contraceptive methods used by postpartum women.

The present study found that the contraceptives methods used by postpartum women included: oral pills, female condoms, IUCD, implant, injection and lactational amenorrhea. The preferred source of family planning method used was the government health facility this was similar to KDHS (2014), the public sector was the major source of family planning methods. This could be attributed to the cost of the family planning methods, easy accessibility and availability.

The most common known method of family planning was Oral pills 89.04%, Injections 80.47%, Implants 76.19% and the least common was the lactational amenorrhoea 23.81%. According to KDHS (2014), the most widely known modern methods of contraception among women are male condoms 96%, injectables 95% and the pill 94%. The least known methods among women are the lactational amenorrhoea method (LAM) 12%, male sterilization 47%, and emergency contraception 59%. The most preferred contraceptive methods from Ujah et al 2017, were the implants 19.2% and injectables 18.4%. Rahmanpour et al. (2010), found that the most preferred contraceptive used after delivery were the minipill 29.3% and the intrauterine contraceptive device 25% while in the study by Chaovisitsaree et al. (2012), Depot medroxy progesterone acetate 38.4% and the progestinonly pills 26.0% were the preferred postpartum contraceptive methods. From this figures, it is clearly shown that in some other parts of the world, the oral contraceptive pills tend to be used more compared to the implants and the intrauterine contraceptive device. It is possible that these methods are easily affordable, readily accessible and do not necessarily require a skilled provider.

Majority of the women were asked about their family planning preference, talked to about the side effects, and given a return date. This result was similar to the KDHS (2014) report where 60% of the current users of modern contraceptive methods were informed about potential side effects of their method, 52% were told what to do if they experienced side effects, and 79% were given information about other methods. Since the 2008-09 KDHS, only one of these indicators, being informed about alternative methods (61 percent in 2008-09), has improved. This shows that the healthcare workers put more effort in talking about the different methods. Though some participants felt that the healthcare workers only talk about the methods they have in the facility.

Women in the postpartum period whose duration of postpartum from 6-12 months were more likely to utilize postpartum contraceptive than duration between 6 week and 3 month postpartum. This study is supported by recent cross-sectional studies conducted in Rural Kenya (Jalang'o, 2017) and in Marrakesh Morocco (Moultrie, 2009). The reason might be due to the reluctance of women in the early postpartum

period to use contraceptives as coital frequency and fertility might be reduced. Besides, family planning providers might defer to give contraceptives immediately after birth. The other possible justification could be due to the fact that the majority of women were abstainers in the first three months of postpartum period.

5.4 Barriers to utilization of postpartum family planning among the postpartum women.

Majority of the women reported that the use of contraceptives brought health problems like: severe abdominal and leg pain, heavy periods and late periods. In a study by Ochako et al. (2015), they found that the major health problems were infertility, birth defects and abnormalities, changes in their normal body processes or inability to menstruate regularly. Similar findings of health related concerns in Kenya are reported in a study on discontinuation of injectables (Burke, 2011). The Kenya DHS reports health related concerns as the second most common reason for non-use or contraceptive discontinuation (KNBS, 2009).

Side effects were reported as one of their greatest fears. The main side effects mentioned were weight gain, reduced sexual desire, headaches and painful menstruation. These results are supported by the Kenya DHS that found, overall, 36% of women report discontinuation within the first 12 months of using a method due to side effects; and 16% of married women not currently using were not doing so due to fear of side effects (Kenya National Bureau of Statistics (KNBS) and ICF Macro 2009). Disruption of menstrual cycle was the most common reported reason for discontinuation of hormonal methods among women in Nyando district, Kenya (Burke, 2011).

Health providers and the media were mentioned as the frequent source of information on contraception. Though the sources, mostly the media, often propagated myths (infertility, birth defects) and exaggerated rare side effects (uncontrollable bleeding, enormous weight gain/loss).

Women do not make decisions to use contraceptives in isolation, but in consultation with others in their social networks (Michellea, 2012). Both information and

misinformation are spread through social networks. In this way, networks provide an opportunity to encourage or discourage use; a way of sharing potentially positive information on contraceptive technologies but also a channel for rumors, which may negatively influence use (Okanlawon, 2010). An interesting finding in Kenya, which was noted during in-depth interviews suggest that men and women were influenced more by their perception of their social network's approval of family planning than by their own approval (Ochako, 2015). Women do not always have control on the start and discontinuation of a contraceptive; it is their husbands or other influential people in their community or household who make the decision. Much of this opposition, they report, was due to low levels of knowledge regarding side effects and cultural beliefs around sex and fertility (Ochako, 2015).

Within the social network, our findings point to the importance of partner views in determining use or nonuse of modern contraceptives. In a study in Kenya, partner's influence was found to be a key barrier, based on the husband's desire to exert influence on childbearing and unfounded concerns about family planning methods. Partners were reported not to accept the use of some methods because they associated them with poor health, infertility, birth defects, infidelity and promiscuity. Contraceptives were also seen by partners to reduce a woman's libido, thereby interfering with marriage, and sometimes resulting in less pleasure during sex.

Husband approval of contraception was significantly associated with women's use of contraceptive method during the postpartum period. This was also in a study done by Adegbola, 2009 in Nigeria. This can be explained by the fact that any factor that influences the partner's attitude towards contraceptives would also affect women's use of postpartum contraceptives either negatively or positively.

5.5 conclusion

A total of 210 postpartum mothers were interviewed giving 100% response rate. The mean age of the study participants was 26.2 with a standard deviation (SD) of ± 3 years with the age range of 15 to 49 years. The majority of the study participants were married 121 (58.1%) and 121 (57.6%) were protestant by religion. On level of

education, 89(42.4%) were educated up-to secondary level nearly half of the study participants were self-employed 104 (49.3%).

The prevalence of postpartum family planning use was low at 46.8%. Marital status, level of education and age were factors significantly associated with postpartum contraceptive use. 60.2% of married women were not using any method of family planning. Whereas 31.9% wanted to delay childbearing for more than two years but they were not on any method of family planning.

Majority of the women were undecided as to the method of postpartum contraception they would opt for. The common source of information on family planning was from health care workers. Majority of the women said they know about the pills but most of them were using the implant.

It was noted that despite women indicating and stating their preference for a postpartum contraceptive method, these women were not using the method they had chosen and hence a reflection of wide gaps in prenatal contraceptive counseling. Health providers and the media were mentioned as the frequent source of information on contraception.

5.6 Recommendations

1. The community should be engaged frequently on the benefits of postpartum family planning through the use of media and barazas.
2. Women should be advised frequently during each antenatal clinic on the benefits of family planning methods. It would help to prepare them when the time comes for postpartum family planning.
3. While the providers are in a position to provide women with the full range of widely available contraceptive methods, following a tiered approach, women should be provided with information on the most effective methods before providing information on the less effective methods.
4. Women should be made aware frequently on the information on family planning and also how the side effects are handled. This will help them to seek answers frequently when they hear the misconception.

5.7 Recommendations for Further research

Further research that involves the male counterparts is recommended to help generate more information that would be helpful in formulating policies, which will be major steps in achieving the Sustainable Development Goals (SDGs).

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APPENDICES

Appendix I: Data Collection Form

Informed consent

I am Lynnet Frances Adhiambo Ooko, a Master of Public Health student at JKUAT main Campus. I am carrying out a study on the: **Factors Associated With Uptake Of Postpartum Family Planning Methods In Muhoroni Sub-County**. I kindly request for your informed consent to participate in this study. Your responses will be of great importance to inform the county and national government and other stakeholders on how to improve the policy programs hence ensure better services.

The questionnaire plays a key role in the study.

Confidentiality will be maintained throughout the study.

Your name and personal details will not be needed in the study.

You are free to choose to participate or not.

Signed Date

Appendix II: Respondent's Questionnaire(English)

Interviewer:

Participant's Identification number:

Date:

Thank you very much for agreeing to participate. Am going to start asking the questions:-

Socio-demographic Information

1. How old are you?..... years
2. How old is your child?.....(in months)
3. What is your current marital status? (Circle one answer only)
 1. Single
 2. Married
 3. Divorced
 4. Widowed
4. What is the highest level of your education? (Circle one answer only)
 1. Primary
 2. Secondary
 - 3 Tertiary
5. Which of the following best describes your employment status over the past 12 months? (Circle one response)
 - 1 Student
 - 2 Housewife
 - 3 Self-employed
 - 4 Employed

Social cultural information

6. What is your religion? (Circle one answer only)
- 1 Catholic
 - 2 Protestant
 - 3 Muslim
7. Which family planning methods do you know? (Circle all those mentioned)
1. Oral pills
 2. Female condom
 3. Male condom
 4. IUCD
 5. Implant
 6. Injection
 7. Female Sterilization
 8. Male sterilization
 9. Natural family planning
 10. Lactational Amenorrhoea (LAM)
8. Where did you get information on family planning? (Circle all those mentioned)
- 1 Media
 - 2 Family and Friends
 - 3 Healthcare workers
9. Did you use any form of family planning within one year of delivery?
- 1 Yes
 - 2 No
10. Which method of family planning did you use?
1. Oral pills
 2. Female condom
 3. Male condom
 4. IUCD
 5. Implant
 6. Injection
 7. Female Sterilization
 8. Male sterilization

9. Natural family planning
10. Lactational Amenorrhoea (LAM)
11. None

11. Was your spouse involved in the selection of family planning method?

1. Yes.
2. No.

12. Where did you get the family planning method you were using? (Circle one answer)

1. Private facility
2. Government health facility
3. Faith based organization
4. Chemists / Pharmacy
5. None

Health system factors

During your visits to the hospital within one year of delivery, did the health care worker

13. Provide information on different methods of family planning?

- 1 Yes
- 2 No
- 3 I don't know

14. Ask about your family planning preference?

- 1 Yes
- 2 No
- 3 I don't know

15. Help you select a family planning method?

- 1 Yes
- 2 No
- 3 I don't know

16. Talk about possible side effects?

- 1 Yes
- 2 No
- 3 I don't know.

17. What are some of the side effects discussed with you? (Circle all those mentioned)

- 1. Vision loss or blurring
- 2. Severe abdominal pain
- 3. Severe leg pain
- 4. Late period
- 5. Heavy periods
- 6. Jaundice
- 7. Neurological signs
- 8. None
- 9. Others

18. Did they give you a return date?

- 1 Yes
- 2 No
- 3 I don't know

Behavioral Factors

19. How many living children of your own do you have?

- 1 Record number.....
- 2 Don't know

20. Would you like to have more children in the future? (Circle one answer)

- 1 Yes
- 2 No
- 3 Depends on husband
- 4 I don't know

21. How long would you like to wait from now before the conception of another child? (Circle one response)

- 1 Less than one year.

- 2 One to two years
- 3 More than two years
- 4 I don't know

THANK YOU FOR YOUR TIME

Appendix III: Respondents questionnaire (Kiswahili)

Hojaji

Mhoji:

Tarehe..... Muda

Asante sana kwa kukubali kushiriki. Nitaanza kukuuliza maswali.

Maswala ya demografia ya jamii

1. Una umri wa miaka ngapi ?
2. Mtoto wako ana umri wa miezi ngapi?
- 3 .Je, hali yako ya ndoa ni ipi? (Choral mduara kwa jibu lako)
 - a. Umeoleka ?
 - b.Waishi na mchumba?
 - c.Mumetengana?
 - d.Mumetalakiana ?
 - e.U mjane?
 - f.Huna uhusiano wowote wa ndoa ?
4. Kama jibu lako ni ndio ,kwa muda upi?
- 5.Ni upeo upi kati ya hizi zasimulia kitengo cha elimu ambacho umeafikia ?
 1. Sina Elimu ya kitengo chochote

2. Niliacha katika shule ya msingi
 3. Nilikomea elimu katika shule ya msingi
 4. Niliacha katika shule ya Upili
 5. Nilikomea elimu katika shule ya Upili
 6. Nilikomea elimu ya chuo cha ufundi /chuo kikuu
 7. Nimetimiza elimu ya chuo cha ufundi /chuo kikuu
 8. Nimetimiza uzamili
 9. Sikutaka elimu
6. Ipi kati ya hizi yasimulia hali yako ya kuajiriwa kwa miezi kumi na mbili iliyopita?
(Chora mduara kwa jibu lako)
- a. Mwajiriwa wa serikali
 - b. Mwajiriwa wa taasisi zisizo za Serikali
 - c. Umejiajiri
 - d. Mfanyikazi wa hisani (asiyelipwa)
 - e. Mwanagenzi
 - f. Mama wa nyumbani
 - g. Mfanya kibarua

Maswala ya utamaduni wa jamii

7. Je, washiriki katika dini ipi kati ya hizi

- a. Kikatholiki
- b. Kiislamu
- c. Mwanasabato (Seventh Day Adventist)
- d. Kiprotestanti
- e. Dini yoyote nyingine

8. Ni mbinu zipi za upangaji uzazi uzijuazo wewe?

- a. Matumizi ya vidonge
- b. Mipira ya kondumu ya kike
- c. Mipira ya kondumu ya kiume
- d. IUCD
- e. Mbinu ya kupachika au kupanda
- f. Sindano
- g. Utakasaji wa kike
- h. Utakasaji wa kiume
- I. Mbinu asilia ya upangaji uzazi
- j. Mbinu ya kukosa hedhi baada ya kujifungua kwa muda wa miezi sita huku shughuli za kunyonyesha zikiendelezwa

9. Je ,ulipata kujua kwa njia ipi kuhusu upangaji uzazi?

- 1.Runinga
2. Redio
3. Gazeti/Jalada
- 4.Wafanyikazi wa Afya
- 5.Marafiki
- 6.Mwenzako wa ndoa
7. Mtandaoni
8. Njia yoyote nyingine....

10.Je,umetumia njia yoyote ya upangaji uzazi katika mwaka wako wa kwanza wa kujifungua?

1. Ndio
- 2.La

11.Kama jibu lako ni ndio ,ulianza kutumia katika miezi ngapi?

- 1.Andika miezi
2. Sijui
- 3.Haihusiki

12. Ulitumia mbinu ipi ya Upangaji uzazi ?

1.Vidonge

2.Mipira ya kondomu ya kike

3. Mipira ya kondumu ya kiume

4.IUCD

5.Mbinu ya kupanga au kupachika

6.Sindano

7. Utakasaji wa kike

8. Utakasaji wa kiume

9. Mbinu asilia ya upangaji uzazi

10. Mbinu ya kukosa hedhi baada ya kujifungua kwa muda wa miezi sita huku shughuli za kunyonyesha zikiendelezwa

11. Haipo

13. Je.mwenzako wa ndoa alishiriki katika uchaguzi wa mbinu ya upangaji uzazi?

1. Ndio

2.La

3.Haihusiki

14.Je, ni wapi mlipoipata mbinu ya upangaji uzazi mliotumia ?

1. Kituo cha kibinafsi

2.Kituo cha serikali cha afya

3.Kituo cha kidini

4.Duka la sawa

5. Kokote kwingine.....

6. Haipo

Katika mwaka wako wa kwanza wa kujifungua ,ulipotembelea hospitali ,Je,mhudumu wa afya

15.Alikupa maarifa juu ya mbinu tofauti za kupanga uzazi?

1.Ndio

2.La

3. Sijui

16. Alikuuliza mbinu ya upangaji uzazi uliopendelea kutumia

1.Ndio

2.La

3.Sijui

17. Alikusaidia katika uchaguzi wa mbinu ya kupanga uzazi?

1.Ndio

2. La

3.Sijui

18. Alizungumzia madhara ya mbinu hizi ?

1. Ndio

2. La

3. Sijui

19. Ni madhara yepi aliyoangazia na kujadili nawe?(chora mduara kwa jibu lako)

1. Kupoteza uwezo wa kuona

2. Maumivu ya tumbo yaliyokithiri

3. Maumivu ya mguu ya yaliyokithiri

4. Kuchelewa kwa hedhi

5. Hedhi nzito

6. Homa ya manjano

7. Dalili ya mfumo wa Neva

8. Hakuna

9. Nyingine....

20. Alikuambia au kukueleza cha kufanya ukikumbana na madhara ya kupanga uzazi?

1. Ndio

2. La

3. Sijui

21. Alikupa tarehe mahususi ya kurejea hospitalini?

1. Ndio

2. La

3. Sijui

22. Je ,una watoto wako ngapi walio hai?

1.Andika nambari...

2. Sijui

23.Je,ungependa kuwa na watoto wengine Sikh zijazo mbeleni?(Chora mduara kwa jibu lako)

1.Ndio

2. La

3. Hilo lategemea uamuzi wa mume wangu

4. Sijui

24. Je ,ungependa kungoja kwa muda upi tangia sasa kabla ya kupata mimba ya mtoto mwengine?

1. Chini ya mwaka mmoja

2. Kati ya mwaka mmoja na miaka miwili

3. Zaidi ya miaka miwili

4. Sijui

Asante kwa muda wako

Appendix IV: Focus Group Discussion Guide

1. What consideration do you make when choosing family planning methods?
2. What are your opinions on postpartum family planning?
3. What are the barriers that hinder you from taking postpartum family planning?
4. What do you think can be done to remove these barriers?
5. How available are the family planning methods?

Appendix V: Key informants interview guide

1. How many (Name of cadre which the interviewee is in-charge of) are deployed in this clinic?(MCH)

Qualification	Number

2. How many have been trained on family planning guidelines as per the National Family Planning Guidelines for Service Providers?

Number:

3. How many are on duty at any given clinic day?

Number:

4. What are your experiences in family planning among the postpartum women?
5. What challenges do you face when it comes to uptake of postpartum family planning?
6. What are your experiences with family planning counseling practices?

Appendix VI: Ethics clearance



OFFICE OF THE DIRECTOR OF GRADUATE STUDIES AND RESEARCH

UNIVERSITY OF EASTERN AFRICA, BARATON

P. O. Box 2500-30100, Eldoret, Kenya, East Africa

January 16, 2019

HSHS311-2910/2016

Lynnet Ooko
School of Public Health
Jomo Kenyatta University of Agriculture and Technology

Dear Lynnet,

Re: ETHICS CLEARANCE FOR THESIS PROPOSAL (REC: UEAB/14/01/2019)

Your master thesis proposal entitled "*Factors Associated with Uptake of Postpartum Family Planning methods among Postpartum Women in Mukoroni Sub-County*" was discussed by the Research Ethics Committee (REC) of the University and your request for ethics clearance was granted approval.

This approval is for one year effective January 16, 2019 until January 15, 2020. For any extension beyond this time period, you will need to apply to this committee one month prior to expiry date.

Note that you will need a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI) and clearance from the study site before you start gathering your data.

We wish you success in your research.

Sincerely yours,

A handwritten signature in black ink that reads "Jackie K. Obey".

Prof. Jackie K. Obey, PhD
Chairperson, Research Ethics Committee

