FAMILY PLANNING IN THE EXTENDED POSTPARTUM PERIOD AMONG WOMEN ATTENDING THE WELL BABY CLINIC, IN MOI TEACHING AND REFERRAL HOSPITAL, UASIN GISHU COUNTY, KENYA

BY

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DECLARATION

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DEDICATION

This research work is dedicated to my family; my late father Mr Andrew Ng’eno, my mother Dr Anne Koske Ngeno, my son Aiden Kimaru and my siblings Faith, Victor and Diana Ng’eno and. Their prayers, love, patience and support have brought me this far.

ABSTRACT

Background The extended postpartum period is a one-year period after delivery which is critical for women to prevent unintended pregnancy and to reduce the risk of maternal and child mortality by ensuring safe birth intervals. The World Health Organization has identified birth interval length as a critical determinant of child mortality risks, recommending that women space their births between three and five years apart to reduce health risks to children and mothers. In Kenya half of births occur within 36 months of a previous birth.

Objectives: The objectives of the study were determining the prevalence of family planning and to establish the socio-economic factors associated with use of family planning in the extended post-partum period among women who were attending the well-baby clinic in MTRH, Uasin Gishu County.

Research design: Descriptive, Cross-Sectional Design was used.

Study population: A total of 322 women aged 18 to 49 who delivered within the last one year were sampled.

Study site: Moi Teaching and Referral Hospital, well baby clinic.

Study methods: A total of 322 women were selected for the study using systematic sampling. Data was collected using interviewer administered questionnaire from women who had delivered within the last one year and were attending the well-baby clinic in MTRH. Chi Square was used to test for association between proportions of categorical variables. A p-value of less than 0.05 was considered statistically significant. A pilot study was carried out in Uasin Gishu District Hospital well baby clinic to pre-test the method of data collection. This was done to verify the accuracy and consistency of the instrument. SPSS version 22.0 was used to perform statistical analysis.

Results: The results of this study showed that the prevalence of family planning use was 66.1 % (213), majority of the respondents 29.1 % (62) used injections, 22.1% (47) used oral pills, and minority 15% (32) used implant. Marital status ($p=0.004<0.05$) and employment ($p=0.018>0.05$) had a significant association while level of education ($p=0.279>0.05$) and prior use ($p=0.378>0.05$) had no significant association with use of family planning in the extended post-partum period.

Conclusion: Use of family planning in the extended postpartum period was high. Marital status and employment of the women were factors associated with use of family planning in the extended postpartum.

Recommendations: The Government through the Ministry of Health should put in more effort to increase prevalence of family planning in extended postpartum period in women who have never been married, who are cohabiting, separated and widowed. The government should create more employment opportunities for women.

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ABBREVIATIONS

ANC:	Antenatal care
DHS:	Demographic and Health Survey
FP:	Family planning
IREC:	Institutional Research and Ethics Committee
IUCD	Intra-uterine Contraceptive Devices
KDHS :	Kenya Demographic and Health Survey
MCH	Maternal and Child Health
MDGs:	Millennium Development Goals
MNH:	Maternal and Neonatal Health
MTRH:	Moi Teaching and Referral Hospital
PPFP:	Post-partum family planning
SPSS:	Statistical Package for Social Sciences
USAID:	United States Agency for International Development
WHO:	World Health Organization
WHO GHO:	World Health Organization Global Health

OPERATIONAL DEFINITION OF TERMS

Contraception – The deliberate use of artificial methods or other techniques to prevent pregnancy as a consequence of sexual intercourse. The major forms of artificial contraception are barrier methods, hormonal contraceptives, intrauterine devices and voluntary sterilization (smith et al., 2005)

Inter-pregnancy Interval – Number of months between the previous live birth and the conception of the current baby (WHO, 2010)

Unmet need for family planning –Women are considered as having an unmet need of family planning if they are fecund and wish to space their next birth or to limit child bearing all together but are not using contraceptive. (Measure, 2014)

Postpartum family planning (PPFP) -The prevention of unintended pregnancy and closely spaced pregnancies through the first 12 months following childbirth (WHO, 2013).

Postpartum period- Includes a 12-month interval following birth; and is sometimes referred to as "extended postpartum period" (Ross and Winfrey, 2001; McKaig and Dellar, 2006.)

Extended postpartum- One full year post-birth (ACCESS-FP)

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The extended postpartum period is a one year period after delivery which is critical for women to prevent unintended pregnancy and to reduce the risk of maternal and child mortality by ensuring safe birth intervals (Mengesha et al., 2015). The first year after delivery is a complex period, during which a woman has to care for her newborn child as well as cope with a series of emotional and physical changes and often extreme tiredness (Salway & Nurani, 1998). Adoption of postpartum contraceptives leads not only to prevention of unintended pregnancies and closely spaced births (WHO, 2013) but also improves maternal and child well being (Rustein, 2005). However, women frequently return to fertility and sex before initiating contraception after delivery, and do not necessarily understand the risk of pregnancy before the return of menses (Blazer & Prata, 2015).

More than one in ten married or in-union women worldwide have an unmet need for FP (United Nations, 2017). Two hundred and fourteen million women of reproductive age in developing countries who want to avoid pregnancy are not using a modern contraceptive method (WHO, 2018). An estimated 36 million women in sub-Saharan Africa have an unmet need for family planning; they want to delay or stop childbearing but are not using any contraceptive method (United Nations Population Fund, 2012).

According to KDHS (2014), 18% of married women age 15-49 have an unmet need for family planning; with 9% having unmet need for spacing and 8% having unmet need for limiting. The unmet need for FP among post-partum women nearly triples the 18% unmet need among married women in the country as documented by the 2014 Kenya Demographic Health Survey (KDHS).

Analysis of DHS of 27 developing countries by Ross and Winfrey (2001) revealed an estimated 74 per cent unmet need of contraception during the first year of birth in the sub-Saharan Africa. They found out that the largest proportion of women with an unmet need for contraception is found among those in their first year after childbirth. The unique feature of unmet need in sub-Saharan Africa is the fact that a large proportion of the contraception demand is for birth spacing and less likely for birth limiting (Ross & Winfrey, 2001; Westoff, 2006).

According to Smith et al. (2009), Shaaban and Glasier, (2008) and Depineres, (2005) the consequences of the high unmet need for postpartum family planning in sub-Saharan Africa include millions of unplanned pregnancies and short inter-pregnancy spacing with poor maternal and infant health outcomes. Half of all unintended pregnancies in developing countries are terminated (Sedgh et al., 2014). Kenya continues to face high prevalence of unintended pregnancy. The KDHS (2014) demonstrated that 35% of the total pregnancies were unintended.

Kenya's maternal mortality ratio is estimated at 362 per 100,000 live births, Infant and under-5 mortality rates in the five-year period before the survey are 39 and 52 deaths per 1,000 live births, respectively (KDHS, 2014). In infancy, a preceding birth interval of less than 18 months is associated with a two-fold increase in mortality risks compared with lengthened intervals of 36 months or longer (Fotso et al., 2013).These statistics clearly indicate that Kenya is far from attaining the target for Sustainable Development Goals (SDGS) on reducing maternal mortality ratio to less than 70 per 100,000 live births, neonatal mortality to as low as 12 per 1,000 live births and under-5 mortality to as low as 25 per 1,000 live births.

According to the Kenya Demographic Health Survey (2014), the country achieved a total fertility rate of 3.9 and national contraceptive prevalence rate of 58%, all being significant progress from the rates in the KDHS 2008/9. The Government of Kenya identifies FP as a pillar of improvement of the health status of women and their families, as documented in the Kenya Development Plan Vision 2030. Kenya was part of the first group of countries to commit to the Family planning 2020 partnership when it launched in 2012. In 2019, the Family planning 2020 report estimated that as a result of modern contraceptive use over 2.4 million unintended pregnancies were prevented and over half a million unsafe abortions. In addition, 8,800 maternal deaths were averted as a result of modern contraceptive use.

The benefit of postpartum family planning (PPFP) for maternal and child survival has long been recognized and the concept of implementing special family planning programs for postpartum women has been recognized as the standard of care since 1966 (Akinlo et al., 2013). Post Partum Family Planning is a key priority for increasing modern contraceptive prevalence rate in Kenya's Family Planning 2020 commitment. In June 2019, Kenya's Ministry of Health approved the inclusion of new post partum family planning (PPFP) indicators in the nation's health information system. It was the first time that these indicators would be tracked systematically across all of the country's health facilities (Advance Family planning, 2019).

Post-partum women and their infants are recommended to receive at least five assessments by a skilled attendant within the first year of childbirth (WHO, 2015). According to the National Family Planning Guidelines for Service Providers 6th edition (2018), during the visits, the service provider should counsel clients on their return to sexual activity and fertility, and introduce them to the concept of Healthy Timing and Spacing of Pregnancies (HTSP).

Since not all clients come back to the health facility after delivery, service providers should ensure that clients have been offered the opportunity to receive immediate post-partum family planning before being discharged home. The foundation for postpartum FP should also be established during the antenatal period and FP information and services or referral should be a key component of the post abortion care package and postnatal care package, along with other maternal and neonatal care services.

According to Intra Health (2010) the timing of a woman's return to fertility after childbirth is difficult to predict and depends on her circumstances and breastfeeding schedule. It is important for postpartum women to initiate use of a family planning method before their fertility returns in order to avoid an unintended or mistimed pregnancy.

Following birth, postpartum women experience amenorrhea for varying lengths of time, depending on their breastfeeding practices (Jackson & Glassier, 2011). For postpartum women who breastfeed exclusively, have no menses, and have an infant less than 6 months of age which are the 3 criteria for the lactational amenorrhoea method (LAM), there is a 1% risk of conception. Once 1 of these 3 criteria is no longer present, the woman is no longer protected from pregnancy (Speroff et al., 2008).

The overall prevalence of Exclusive Breast Feeding in sub Saharan Africa was 36.0%. (Yalcin et al., 2016) and in Kenya it was reported at 61.39 % (KDHS, 2014). For women who are not exclusively breastfeeding, pregnancy can occur within 45 days of giving birth (Jackson & Glassier, 2011). For these women, ovulation may occur possibly as soon as the 28th day after childbirth (Speroff et al., 2008). Among women who do not exclusively breastfeed, pregnancy can also occur before menses resume (WHO, 2008).

Lack of knowledge about the return of fertility in the postpartum period increases women's susceptibility to an unintended pregnancy as many women incorrectly believe that fertility returns with resumption of menses (Borda et al., 2011; Ndugwa et al., 2011; Adeyemi et al., 2005).

Conde-Agudelo and Belizan, (2000), and Magadi et al, (2004, 2001), found out that on causes of the adverse maternal health outcomes such as premature births, low birth weight, perinatal mortality, foetal loss, and maternal mortality, supports the evidence that many of these outcomes could be avoided by encouraging early antenatal care visits, delivering in health facilities, seeking postnatal care, and adopting appropriate family planning methods during the postpartum period.

The World Health Organization (WHO) has identified birth interval length (the period between two consecutive live births) as a critical determinant of child mortality risks, recommending that women space their births between three and five years apart to reduce health risks to children and mothers (WHO, 2007). There are a number of safe and effective contraceptive methods that women can begin at various points after delivery, including those used immediately postpartum, to optimize birth spacing (WHO, 2008).

If properly utilized, postpartum family planning (PPFP) is one of the best interventions to reduce maternal and neonatal morbidity and mortality (Mathe et al., 2011) because two thirds of maternal and neonatal mortalities occur during the postnatal period (Matisavichn & Santos, 2009).

1.2 Problem statement

Postpartum period is characterised by the risk of unintended pregnancies, because women face the problem of beginning or resuming a contraceptive therapy and the optimal moment to start it (Cwiaket et al., 2004; Omolulu & Okunowo, 2009; Glazer et al., 2010). The first year after delivery is a complex period, during which a woman has to care for her newborn child as well as cope with a series of emotional and physical changes and often extreme tiredness (Salway & Nurani, 1998).

The unmet need for Kenyan post-partum women between 0 to 12 months was 59% (Borda & Winfrey, 2010). The World Health Organization (WHO) has identified birth interval length (the period between two consecutive live births) as a critical determinant of child mortality risks, recommending that women space their births between three and five years apart to reduce health risks to children and mothers (WHO, 2007). In Kenya half of births occur within 36 months of a previous birth (KDHS, 2014). Using postpartum contraception is, in fact, a sure way of ensuring that pregnancies are planned appropriately as recommended.

The provision of quality family planning services in the postpartum period significantly reduces maternal and child mortality and morbidity, as well as prevent the risk of unwanted pregnancies and unsafe abortion (Barber, 2007). In Uasin Gishu County the family planning utilization was 56% (KDHS, 2014).

This study therefore aimed to assess the prevalence and socio-economic factors associated with use of family planning in the extended postpartum period and make recommendations that may be used for improvement.

1.3 Justification of the study

According to the WHO (2012), satisfying the unmet need for family planning alone could cut the number of maternal deaths by almost a third. However, an estimated 215 million women who would prefer to delay or avoid pregnancy continue to lack access to safe and effective contraception. Family planning could prevent as many as one in every three maternal deaths by allowing women to delay motherhood, space births, avoid unintended pregnancies and abortions, and stop childbearing when they have reached their desired family size.

A longer interval between births reduces the risk of severe maternal complications, such as pre-birth bleeding, puerperal endometritis, anaemia and death (Zhu et al., 1999; Conde-Agudelo & Belizan 2000; Robin et al., 200; Kaunitz 2011). Rutstein (2005) found out that understanding and addressing unmet need for family planning in the postpartum period is very crucial for child survival. By preventing closely spaced births, family planning could save the lives of more than 2 million infants and children annually. The prevention of pregnancies occurring within 24 months after delivery is also very important in terms of economic and psychological costs (Uegaki et al., 2011).

Family planning enables people to make informed choices about their sexual and reproductive health. Family planning represents an opportunity for women to pursue additional education and participate in public life, including paid employment in non-family organizations. Additionally, having smaller families allows parents to invest more in each child. Children with fewer siblings tend to stay in school longer than those with many siblings (WHO, 2018).

The World Health Organization (WHO) has identified birth interval length (the period between two consecutive live births) as a critical determinant of child mortality risks, recommending that women space their births between three and five years apart to reduce health risks to children and mothers (WHO, 2007).. In Kenya half of births occur within 36 months of a previous birth (KDHS, 2014).Using postpartum contraception is, in fact, a sure way of ensuring that pregnancies are planned appropriately as recommended.

Through this study new knowledge on prevalence of family planning and socio-economic factors associated with use of family planning in the extended post partum period was generated. This new knowledge may be used by the policy makers to strengthen, change or improve prevalence of family planning in the extended postpartum period.

This study has also contributed to a data bank which may be used by other researchers. The above are reasons why this study was justified.

1.4 Research Questions

1. What was the prevalence of family planning in the extended post partum period among women who were attending the well baby clinic in MTRH, Uasin Gishu County?
2. What were the socio-economic factors associated with use of family planning in the extended post partum period among women who were attending the well baby clinic in MTRH, Uasin Gishu County?

1.5 Objectives

1.5.1 Broad objective

To determine the prevalence and socio-economic factors associated with use of family planning in the extended postpartum period.

1.5.2 Specific Objective

1. To determine the prevalence of family planning in the extended post partum period among women who were attending the well baby clinic in MTRH, Uasin Gishu County.
2. To establish the socio-economic factors associated with use of family planning in the extended post partum period among women who were attending the well baby clinic in MTRH, Uasin Gishu County

1.6 The Scope of the Study

The study was conducted in Moi Teaching and Referral Hospital in Uasin Gishu County. The respondents were all women who delivered within the last one year and were attending the well baby clinic in MTRH. It addressed the prevalence and socio-economic factors associated with use of family planning in the extended postpartum period.

CHAPTER TWO

LITERATURE REVIEW

2.1 Postpartum period and the concept of postpartum family planning (PPFP)

Every hour of every day, at least 30 women die from complications of pregnancy and childbirth in sub Saharan Africa about 270,000 deaths every year. Every minute of every day, nine children under age 5 die in Africa which is 4.8 million children annually. Family planning could prevent many of these deaths by enabling women to bear children during the healthiest times for themselves and their children. Two hundred and fourteen million women of reproductive age in developing countries who want to avoid pregnancy are not using a modern contraceptive method (WHO, 2018).

Although many United Nations member countries, particularly those in the developed world, have strong family planning programs, this is not the case in sub-Saharan Africa, where despite a rise in contraceptive prevalence rates, many women continue to have unmet need for contraception (UNFPA, 2012; Cleland et al.,2006).

A number of studies have revealed that most of the postpartum mothers are not aware of the factors associated with fertility return and do not think they are at risk of pregnancy during the first year after giving birth. Consequently, these mothers are reluctant to use family planning or are using unreliable methods associated with high failure rate such as withdrawal and condom (Salway & Nurani, 1998; Shaaban & Glasier, 2008; Rojnik et al., 1995).

Postpartum period includes a 12-month interval following birth and is sometimes referred to as “extended postpartum period” (Ross & Winfrey, 2001; McKaig & Dellar, 2006.). It is a complex period, during which a woman has to care for her new born child as well as cope with a series of emotional and physical changes and often extreme tiredness (Salway & Nurani, 1998).

Likewise, it is an important timing for family planning, which lengthens birth spacing and improves maternal and infant health (Barber, 2007), even though contraception demands fluctuate over the course of a woman’s reproductive life. Postpartum family planning, therefore is the initiation and use of contraceptives during the first year after delivery (McKaig & Dellar, 2006), and thus reduces lifetime risk of maternal mortality by preventing exposure to pregnancy.

Research has established that many postpartum women have high unmet need for family planning during the first year after delivery and that most of the unmet need is for spacing rather than limiting birth. Analysis of DHS of 27 developing countries by Ross and Winfrey (2001) revealed an estimated 74 per cent unmet need of contraception during the first year in the sub-Saharan Africa as compared to 54 per cent in Latin America and 62 per cent in Asia. The analysis also indicated that only 18 per cent of postpartum women in sub-Saharan Africa are using contraceptives as compared to 42 per cent in Latin America and 32 per cent in Asia

The high unmet need for postpartum family planning exposes the first time mothers to pregnancy during the first year after delivery, which adversely affects the health of both the mother and the baby due to short birth intervals (Smith et al., 2009; Ross & Winfrey, 2001; King, 2007). This is because most of the unintended pregnancies in the year following childbirth are associated with abortion and poor pregnancy outcomes, thus a public health concern.

2.2 Unmet need and intention to use postpartum family planning

Whereas there is extensive literature on both unmet need for postpartum family planning and postpartum period, little has been done and written about women's intention to use a contraceptive method in the postpartum period. Yet according to Roy et al. (2003), intention to practice contraception is a more valid indicator of the demand for family planning than unmet need, even after adjustment for women who state that they will use contraceptives but might fail to do so.

In addition, Ross and Winfrey (2001) observed that while unmet need rests on fertility preferences, statements of intentions to use contraceptives pertains to actual contraceptive use. This means that by expressing intention to practice contraception, women are able to better visualize their future need for family planning and therefore are more likely to translate it into actual use. Consequently, women's statements about their intentions to use contraceptives have of recently received attention as an alternative or supplement to information about unmet need (Roy et al., 2003).

A follow up study conducted five years after national family health survey (NFHS) in India revealed that 49 per cent of the women who had stated intention to use contraception actually did use it more than 29 per cent of the women who did not intend to use contraceptives (Roy et al., 2003). The study also reported that women who intended to use a contraceptive method and had no intentions of having a child one year after birth were significantly more likely than others to use a method. Analysis of demographic and health surveys of 27 countries by Ross and Winfrey (2001) also reported that where the stated intention to use contraception was high, there was substantial rise in the actual contraceptive use.

However, it is important to remember that childbearing intentions and behaviour are dynamic concepts that depend on a number of factors. Roy et al. (2003) reported that women may not adhere to their intentions of contraceptive use within the first year postpartum because of sudden death of the infant, change in economic conditions of the household, opposition from family members including spouses as well as lack of good quality family planning services.

2.3 Prevalence of family planning in the extended postpartum period

According to a report by WHO (2013), the worldwide estimation of contraceptive prevalence among 15-49 years of age was 62.7%. A study by Zapata et al. (2015) on Contraceptive counselling and postpartum contraceptive use in Missouri, New York State and New York City in which it was reported that most women (85%) reported to have used some method of contraception during the postpartum.

A study by Abraha et al, (2017) on postpartum modern contraceptive use in Northern Ethiopia: Prevalence and Associated Factors showed that modern contraceptive use was reported by 283 (48%) women. In a study by Nigussie, Girma and Tura (2016), it was found that the prevalence of contraceptive utilization was found to be 67 (12.3%) among women in the postpartum period. In a study of Jelong'o et al 2017 in rural Kenya more than three quarter (86.3%) of the respondents were found to have adopted postpartum contraception.

2.4 Types of family planning methods used in the extended postpartum period

Borda & Winfrey, 2010 suggested that women who wish to prevent or delay a subsequent pregnancy after delivery should adopt a contraceptive method as early as possible after delivery and before resumption of sexual activity. For example a study by Shaaban and Glasier, (2008) indicated that adoption of contraceptive in the extended postpartum period is low in North West Ethiopia. It was found that a total of 348 (38.7 %) had used contraceptives prior to the recent birth.

The most frequently used contraceptive method was the injection (30.6 %) and birth control pill (9.9 %).Ten per cent were currently using a contraceptive among these women; the injection was the most popular method. This is because postpartum women may not realize they are at risk of pregnancy during the breastfeeding period.

Borda et al. (2010) report on Demographic and Health Survey (DHS) data showing that in Bangladesh, 33% of women resumed sexual activity within 3 months postpartum, but only 7.2% were using contraception. In Rwanda, these proportions are 73.6% and 1.7%, respectively. In all 17 countries analysed, women were more likely to use contraception after menses returned than before. Family Planning is critical for saving the lives of women and children in the developing world (Ahmed, Li, Liu & Tsui, 2012).

The World Health Organization (2013) recommends PPFP as a critical component of health care that has the potential to meet women's desire for contraception and save millions of maternal and infant lives in low and middle income countries. Arrowsmith et al. (2012) assessed interventions to increase the use of copper IUCDs. Randomized controlled trials and controlled before and after studies from any country that measured use of copper IUD between 1990 and 2011 were included. Antenatal contraceptive counselling for postpartum contraceptive use and post-delivery contraceptive counselling with a leaflet prior to hospital discharge significantly increased the number of women who accepted the IUD. Postnatal home visits did not significantly improve IUD uptake.

There are a number of safe and effective contraceptive methods that women can begin at various points after delivery, including those used immediately at postpartum, to optimize birth spacing (WHO, 2008). Even women who adopt modern contraceptive methods for birth spacing after delivery are likely to opt for short-term hormonal methods (injectable/oral contraceptives) [Gebreselassie et al., 2008].

Long-acting reversible contraceptives (LARC) such as intrauterine devices (IUCDs) are likely to be the most effective method for prevention of unwanted pregnancies, especially among those women who wish to use a contraceptive device to delay the next pregnancy [Winner et al., 2012).

From a study in Nigeria by Akinlo et al 2013, The proportion of postpartum women who used a modern method of contraception within the 12 months following last delivery was very low (8 per cent). Among users of modern contraceptives, 3 per cent had used male condoms, 2 per cent each had used pills and injectables, and about 1 per cent had used IUDs or female sterilization. This study illustrated the different types of methods used in the postpartum period as injections, oral pills, IUCDs, condoms and implants. The percentage of use of each method was higher than the study in Nigeria by Akinlo et al 2013.

2.5 Socioeconomic factors affecting the use of contraceptives among postpartum women

Several studies have established a significant association between postpartum contraceptive use and postpartum women's' demographic and socioeconomic factors. Major factors associated with postpartum contraception uptake include education level, marital status, woman's age, and current desire for children and key socioeconomic status (Bosco et al., 2013).

This study went further by showing the specific factors that influences use of family planning. Marital status and occupation were significant while education and contraceptive history had no significant association with use of family planning in the extended post partum period.

2.5.1 Education level

Studies carried out in Uganda by Bosco et al. (2013) show that the likelihood of using contraception is associated with women's educational attainment. The more schooling a woman has, the more likely she is to report use of a modern 18 contraceptive method. Rojnik (1995) and Tehrani et al. (2001) demonstrated that postpartum women with higher education are more likely to use reliable contraceptive regularly.

2.5.2 Marital status

Studies done in El Salvador by Newman et al. (2005) show that living with a partner significantly influenced the intention of young women to use postpartum family planning. The study also showed that the majority of single women did not intend to use contraceptives, which suggests that young women might be having misconceptions of their pregnancy risk.

2.5.3 Contraceptive history

In a study in Addis Ababa, Ethiopia by Gebremedhin et al. (2018), Women who had history of family planning method use prior to their last pregnancy were also found to use contraceptives in their postpartum period more than those who had no such history.

In a study carried out in Turkey, by Yilmazel and Balci (2013) on Preferences and Related Factors for Postpartum Contraception in Pregnant Women, the rate of pregnant women who used a contraceptive method before also thought of using a contraceptive method after the birth (42.9%) were higher than the rate of pregnant women (29.1%) who didn't use any method before then consider using methods after the birth.

2.5.4 Prenatal counselling

Counselling for family planning during the antenatal period, considered the standard of care, is only offered to a fraction of women in developing countries, where few receive effective antenatal care (Piaggio et al., 1998). Similarly, postpartum family planning counselling is infrequently provided (Vernon, 2009).

Previous studies (Barber, 2007; Hotchkiss, Rous, Seiber, & Berruti, 2005) suggest that antenatal and postnatal services remain important windows of opportunity to provide access to family planning messages and to offer women various contraceptive methods.

Apart from the maternal health services, other significant predictors of the use of contraception in the postpartum period include region, education, the wealth index, and exposure to family planning messages. (Akinlo, et al., 2013).This evidence demonstrates that these women are at a higher risk of unplanned or unwanted pregnancies compared with their counterparts who use contraception before resumption of menstruation.

Breastfeeding as an alternative to contraceptive use would not offer some of these women protection against unwanted pregnancies due to varying levels and intensity of breastfeeding (Barber 2007; Bongaarts 1987; Bongaarts and Potter 1983; Haggerty and Rutstein 1999; Ullah and Chakraborty 1994). Therefore, it is debatable whether breastfeeding can substitute for the use of modern family planning methods during the postpartum period.

Shaaban et al. (2013) found that at 6 months, significantly more women in the lactational amenorrhoea method-emergency contraceptive (LAM-EC) group (30%) were using IUD than women in the LAM-only group (19.8%) (P=0.0001). Saeed et al. (2013) found that their couples counseling group, who received 20-minute counseling with the husband or mother-in-law if possible in the postpartum ward, was more likely to use pills (37.1%) than the group who did not receive counseling or a leaflet (6.3%) ($P < 0.01$).

Dhont et al. (2008) found higher injectable use among women at Site A, who were referred for all FP services to a public clinic that was typically stocked with short-acting methods (64%), than among women at Site B, who were offered implants and IUDs on-site, with referrals for short-acting methods (27%) ($P<0.001$). Women at Site B used implants more frequently (38%) than women at Site A (6%) ($P<0.001$). Women attending Site B (with on-site access to long acting reversible contraceptives) were 10.2 times more likely to start using implants (95% confidence interval 5.0–20.8) than those attending Site A, who may not have had consistent stock of long acting reversible contraceptives (LARCs) but had more consistent stock of short-acting methods

2.5.5 Maternal age

Studies in Uganda by Bosco et al. (2013) have shown that maternal age plays a key role in the readiness to take up a postpartum contraceptive method. A smaller percentage of women between ages 15-24 compared to those between ages 25-34 expressed desire to limit or delay childbearing at least for two years. In 2011, 26% of women aged between 15 and 24 wanted a child within two years compared with only 16% of their counterparts aged between 25 to 34 years. These results suggest that there might be less uptake of postpartum contraception in women who have a lower maternal age.

2.5.6 Number of living children

Studies in Zimbabwe by Sambisi & Sian (1997), have shown that age and parity differentials in postpartum contraceptive use are also modest, although older women (over 35) and those who have had at least four births are less likely to adopt contraception by each duration postpartum than their counterparts.

Conflictingly, some studies have shown that parity does not necessarily have a direct effect on postpartum desire and uptake of contraception. Mahmood et al. (2011) in a cross-sectional study in rural Bareilly reported that maternal age or number of children was not significantly associated with postpartum family planning prevalence in the current study. Similar observations were reported in a study conducted in Srilanka by Agampodi et al. (2009). These disparities in results highlight opportunities for further research and this study will contribute to these arguments.

2.5.7 Source of information on contraceptives.

Prenatal visits, delivery services and subsequent health system contacts are promising avenues for reaching postpartum women with an unmet need and a desire to use family planning services (John et al., 2007). Studies by Lopez et al. (2012) continue to demonstrate that fewer women receive information about resuming sexual activity and contraception during the period they stay in hospital for delivery and usually information conveyed is as a result of an individual health professional rather than through a structured program.

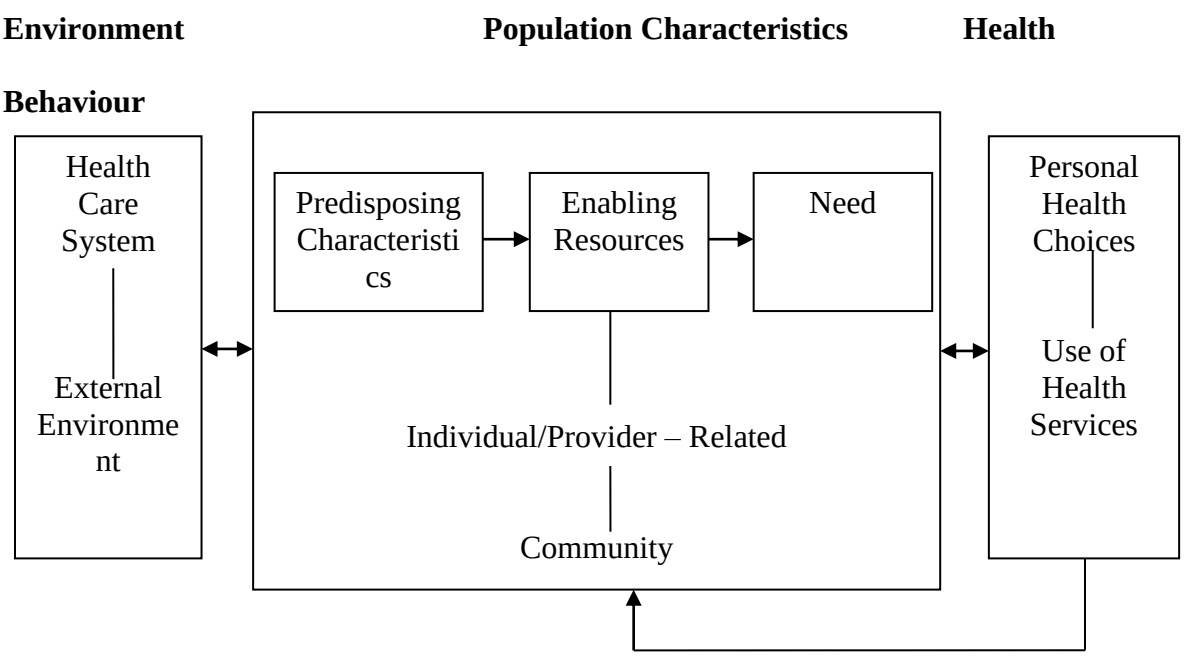
Studies by Mahmood et al. (2011) in rural Bareilly reported that Contraceptive use was higher (19.1%) among the females who had delivered at a hospital or health centre compared to those delivered at home (8.3%). The result was attributed to the likelihood that the woman received family planning advice and had an opportunity and access to a method at the time. In a study conducted in Mexico, women who received family planning advice during prenatal care were more likely to use a contraceptive than were those who did not receive such advice (Barber, 2007).

2.6 Conceptual framework

The conceptual frame work was modelled through the Anderson model which demonstrates how various factors lead to the use of health services. The use of health services is determined by predisposing factors, enabling factors and need. Predisposing factors for this study were characterized as maternal age, and health belief about postpartum contraception that the woman holds.

For instance a woman who believes that family planning services are useful and indeed effective is more likely to take it up or desire to want. Enabling factor was spousal presence and support. Need includes how the women view their own risk of becoming pregnant postpartum.

Figure 2.1: The Anderson Model of healthcare utilization
Source: Anderson (1995)



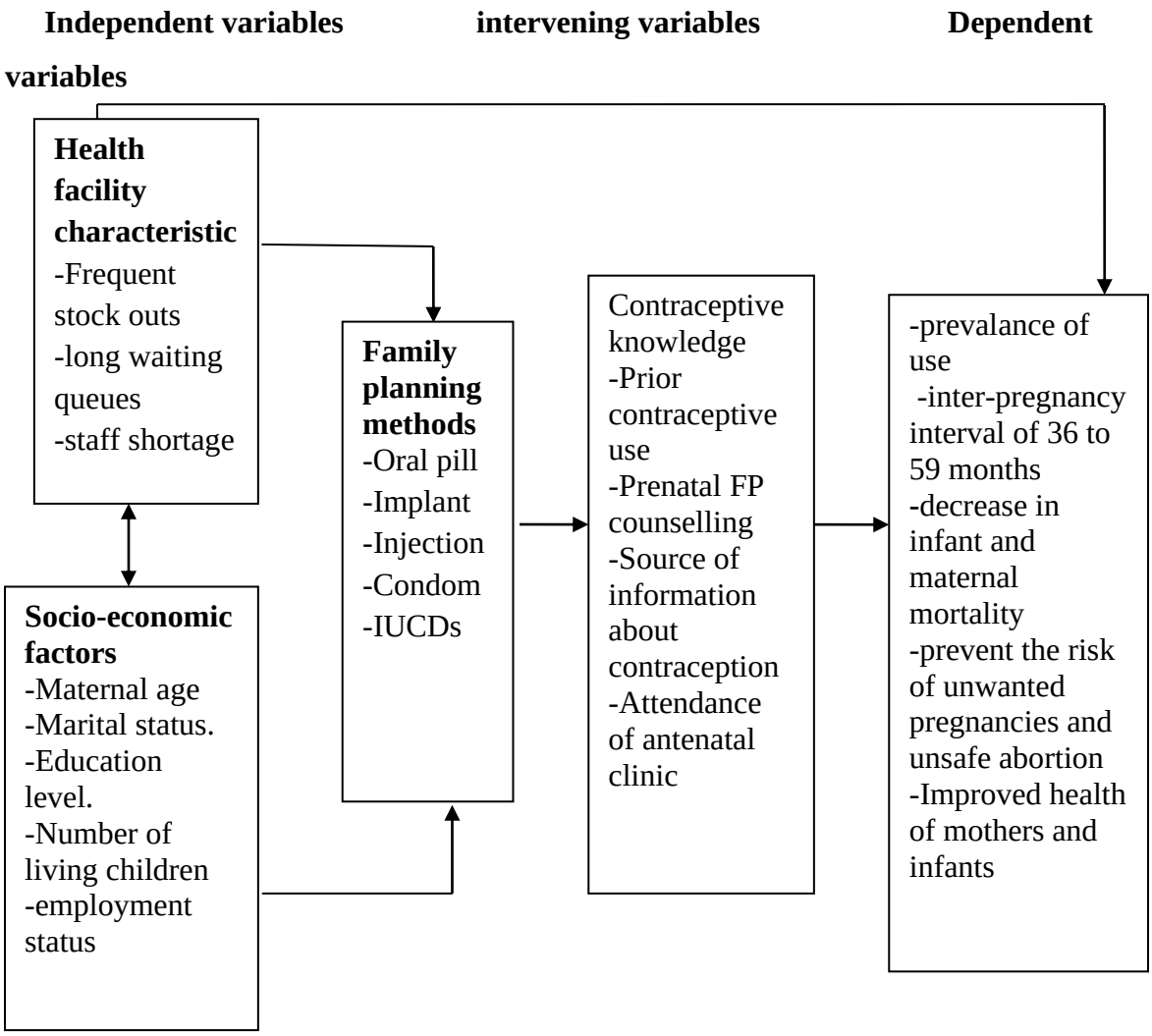
The conceptual framework (figure 2.2) shows how the independent variables interact to influence the use of postpartum family planning. The outcomes from use of contraceptives are the dependent variables.

However there are intervening factors that may hinder use of contraceptives.This may influence the use of PPFP directly or may be through the intermediate factors. However even if the contraceptives are accessible the intervening variables may hinder use of contraceptives.

The use of family planning in the postpartum period is determined maternal age, marital status, education level, number of living children and employment status of the mother. Frequent stock outs, long waiting queues and staff shortage are also health facility characteristics that influence use of family planning. These may influence the use of PPFP directly or may be through the intermediate factors. Even if the contraceptives are accessible the intervening variables may hinder use of contraceptives.

The outcome is increase in the prevalence of use of family planning in the postpartum period, inter pregnancy interval of 36 to 59 months, prevent the risk of unwanted pregnancies, decrease in infant and maternal mortality and improved health of mothers and infants.

Figure 2.2: Conceptual framework of the study



CHAPTER THREE

METHODOLOGY

3.1 Study site

Uasin Gishu County has 170 health facilities ranging from level 2 to 6 facilities. At the apex of the health system is the Moi Teaching and Referral hospital. In the
County the family planning utilization was 56% (KDHS, 2014).

This study was carried out at the Moi Teaching and Referral Hospital (MTRH) in the well baby clinic. Moi Teaching and Referral Hospital is the second largest referral hospital in Kenya. It is located in Eldoret town 350 km North West of Nairobi. It has 350 beds with over 3000 permanent staff including about 200 consultants. The hospital serves as a teaching and research institute in collaboration with Moi University.

The hospital runs an antenatal clinic five days a week reviewing up to 80 clients per day. In the 2014/2015 financial year there were 1793 women who used family planning, 13,511 deliveries with 21 maternal deaths and 600 neonatal deaths. The MTRH well-baby clinic attends to an average of 1184 children per month (MTRH records, 2015).

3.2 Study Population

The study population comprised women who delivered within the last one year, and were attending the well baby clinic in MTRH, Uasin Gishu County.

3.3 Research Design

The research design for this study was descriptive cross sectional. This study determined the prevalence and socio-economic factors associated with use of family planning in the extended postpartum period. It involved 'the collection of data to capture the phenomenon under study at one point in time' (Polit & Beck, 2008).

3.4 Sample size determination

To guide in determining sample size, the estimate number of Kenyan post-partum women between 0 to 12 months with unmet need was used. The study was conducted with only an allowable error of 5%.

Thus the number of women who participated in the study was determined using Cochran equation as follows:

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Where:

Z: is the statistical constant representing a 95% confidence level=1.96.

d: is the sampling error =5%, or 0.05

p = 59% = 0.59 (Estimate for unmet need for Kenyan post-partum women between 0 to 12 months according to Borda M, and Winfrey W., 2010)

$$n = \frac{(1.96)^2\ 0.59(1-0.59)}{(0.05)^2}$$

= 372

A total of 2368 clients were expected in the 2 months period when the study was done (MTRH records, 2015) hence the sampling frame is less than 10,000

Therefore, we adjust the sample size (fisher's 1997) using the formula

n = $\frac{n}{1+\frac{n}{N}}$ where N= sampling frame

= $\frac{372}{1+\frac{372}{2368}}$ =

= 322

Therefore the sample size obtained for the study was 322.

3.5 Sampling techniques

This study employed systematic sampling. A total of 2,368 clients were expected in the well baby clinic in the 2 months period during which the study was done (MTRH records, 2015).To get the k^{th}, element the sample population was divided with the expected sample size (2368/322) and this gives 7.3. This means that the first respondent was picked at random between 1 and 7; thereafter every 7^{th} woman was picked as they attend the well baby clinic. In situations where the participants was not eligible or did not give consent, replacement with the next eligible respondent was done. This was done repeatedly until the required sample size was achieved.

3.6 Eligibility criteria

3.6.1 Inclusion criteria for women

Women aged 18 to 49 who delivered within the last one year.

3.6.2 Exclusion criteria for women

Women aged 18 to 49 who have had tubal ligation and total abdominal hysterectomy.

3.7 Data collection method

The data collection tool was an interviewer administered questionnaires. Data was collected by a principal investigator and two trained research assistants. The principal investigator trained the research assistants on the objectives of the study and administration of the questionnaire and informed consent. After consent, study participants were directed into a private location where the researcher interviewed them.

3.8 Instrument validity and reliability

A pilot study was carried out in Uasin Gishu District Hospital, well baby clinic. The facility has a near similar catchment area and is anticipated to serve a similar population of women who delivered within the last one year and were attending the well baby clinic. This helped to pre-test the method of data collection and to verify the accuracy and consistency of the instrument. Any weakness and deficiencies noted were corrected in the final data collection instrument.

3.9 Data analysis

Questionnaire was checked at the end of every interview session and also at the end of each day to assess completeness. Data coding and capture was done by use of a computer package known as Epidata. Pre-codes for the closed ended questions were edited while new codes were developed for the open ended questions using Epidata.

Each subject was assigned a unique identification number and this was entered along with actual data. The dataset was verified and exported to SPSS version 22.0. This study used descriptive statistics in the form of frequencies and percentages for the variables in the data set. SPSS version 22.0 was used to perform statistical analysis. Pearson Chi Square was used to test for association between proportions of categorical variables. It was used to establish the socio-economic factors associated with use of family planning in the extended post partum among women who were attending the well baby clinic in MTRH, Uasin Gishu County.

3.10 Dissemination of Findings

The findings in this study will be shared with the School of Public Health during the thesis defense before providing the school with copies of final results. The same will be shared with IREC as well as MTRH. Finally, the researcher will publish the findings.

3.11 Study limitations

The study was limited by social desirability and response biases on the part of the respondents and interviewer bias. The study was carried out at one point in time and may provide different results if another time frame are chosen.

Minimizing study limitations: Confidentiality and privacy during the interview was maintained and patients were assured that responses to questions will not affect them in any way. The questionnaires have no leading questions and were administered by interviewers trained prior to commencement of study.

3.12 Ethical Consideration

Ethical approval was sought from Institution Research and Ethics Committee (IREC), Moi University and MTRH. Permission to conduct the study at MTRH was sought from the hospital management and from the chairman of Maternal Child Health Department. An informed written consent was obtained from each participant and the consenting process took place in a private room with minimum interruptions. The nature and purpose of the study was fully explained to every participant and they were informed that the findings of this study would be used for academic purposes. Participation was voluntary and respondents allowed to only answer questions they are comfortable with. The participants were free to withdraw from the study any time without any negative consequences.

Confidentiality of the information was strictly maintained. Apart from the consent forms no information that linked the data to the participants was required. Anonymity was maintained as the participant's names or personal identification numbers was not reflected on the questionnaires except for unique numbering and identification of data during data editing. A copy of the duly signed consent form was given to the participant. The computer that was used by the researcher was password protected and the data too was kept under password-protected, the document was accessible only to the research

CHAPTER FOUR

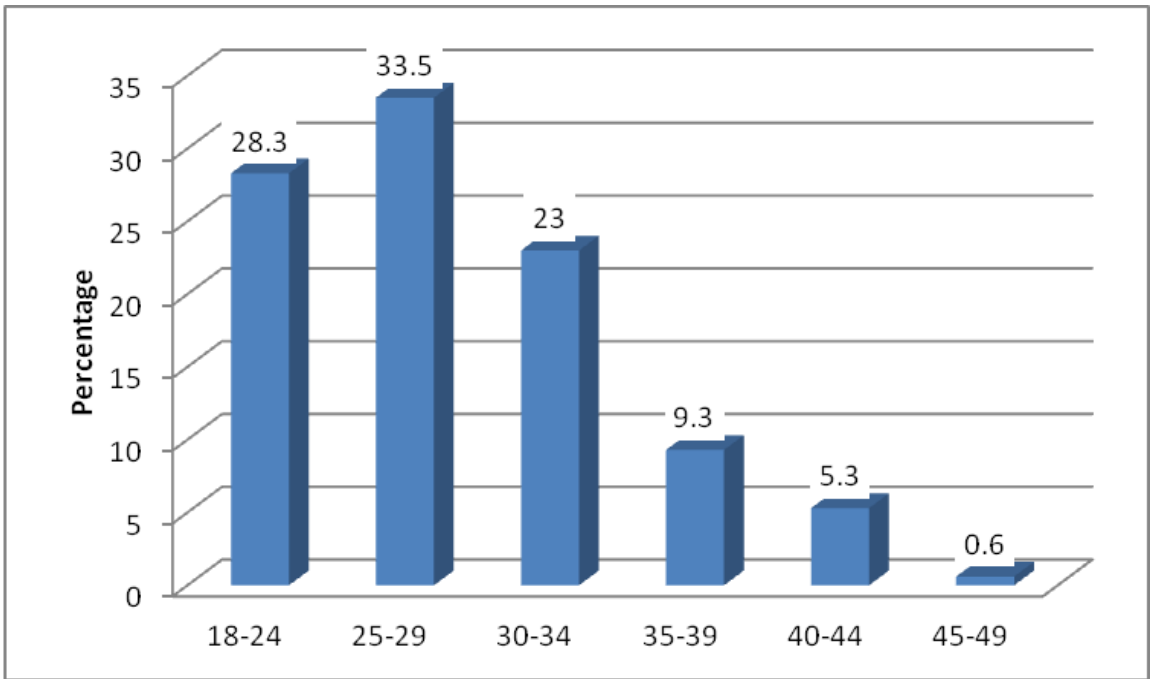
FINDINGS

4.1 Demographic characteristics of the respondents

4.1.1 Age of the respondents

The number of respondents was 322. Majority of the women, 33.5% (108/322) were aged between 25 and 29 years, 28.3% (91/322) were aged between 18 and 24 years, 23% (74/322) were aged between 30 and 34 years, 9.3 % (30/322) were aged between 35 to 39, 5.3% (17/322) were aged between 40 to 44, while the minority 0.6 % (2/322) were aged between 45 to 49 years. Cumulatively, 84.8% of the women were aged between 18 and 34 years which was the main maternal age bracket among the women participants.

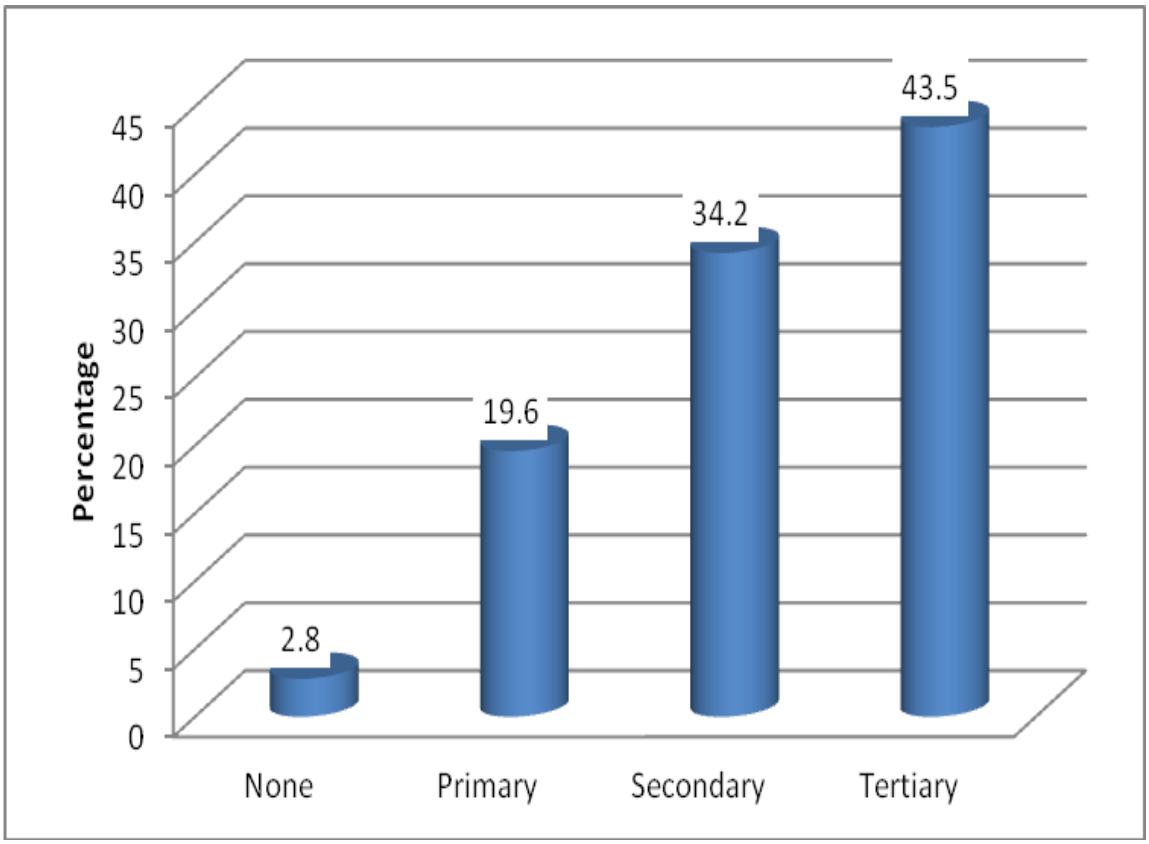
Figure 4.1 Age of the respondents



4.1.2 Level of education

The majority of the women had tertiary education 43.5% (140/322), 34.2% (110/322) had secondary education, 19.6 % (63/322) had primary education and minority had no education 2.8% (9/322).

Figure 4.2 Level of education



4.1.3 Religion

Among the women respondents, majority 60.6% (195/322) were Protestants, 20.5% (66/322) were Catholic, 8.7% (28/322) were Muslims, 9.6 % (31/322) were from other religions and minority 0.6 % (2/322) did not belong to any religion.

Table 1 Religion

Religion	Frequency	Percent
Catholic	66	20.5
Protestant	195	60.6
Muslims	28	8.7
Others	31	9.6
None	2	0.6
Total	322	100.0

4.1.4 Whom the respondents live with.

Majority 71.7% (231/322) of the participants lived with their spouse/partner, 11.8% (38/322) lived alone, 11.2 % (36/322) lived with the parents, 5 % (16/322) lived with the relatives and minority 0.3% (1/322) lived with other people.

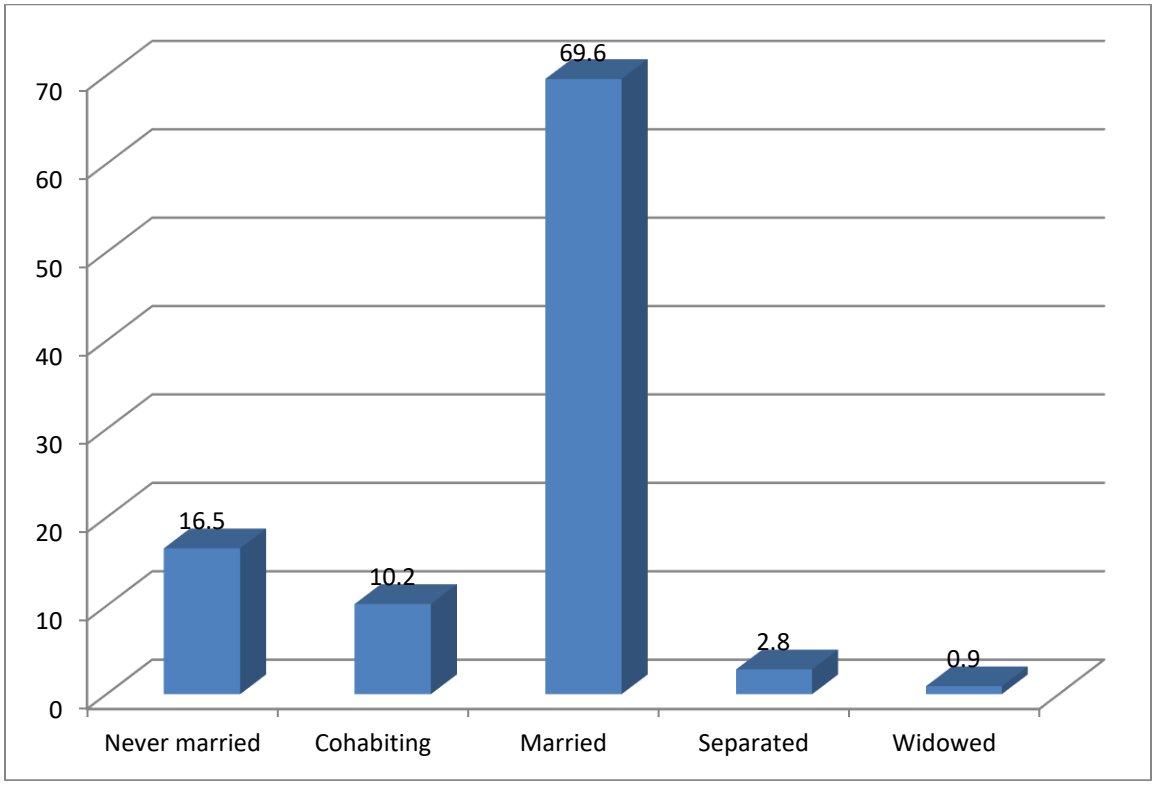
Table 2 whom the respondents live with.

whom the respondents live with.	Frequency	Percent
Alone	38	11.8
spouse/partner	231	71.7
Parents	36	11.2
Relatives	16	5.0
Others	1	0.3
Total	322	100.0

4.1.5 Marital status

Majority of the participants 69.6% (224/322) were married, 16.5% (53/322) had never been married, 10.2% (33/322) were cohabiting, 2.8% (9/322) were separated, and minority 0.9% (3/322) were widowed.

Figure 4.3 Marital status



4.1.6 Employment status

Majority 50% (161/322) of the women were in professional/self-employment category, 32.6% (105/322) were students/unemployed, 9.9% (32/322) were housewives, and minority 7.5% (5/322) were domestic/casual workers.

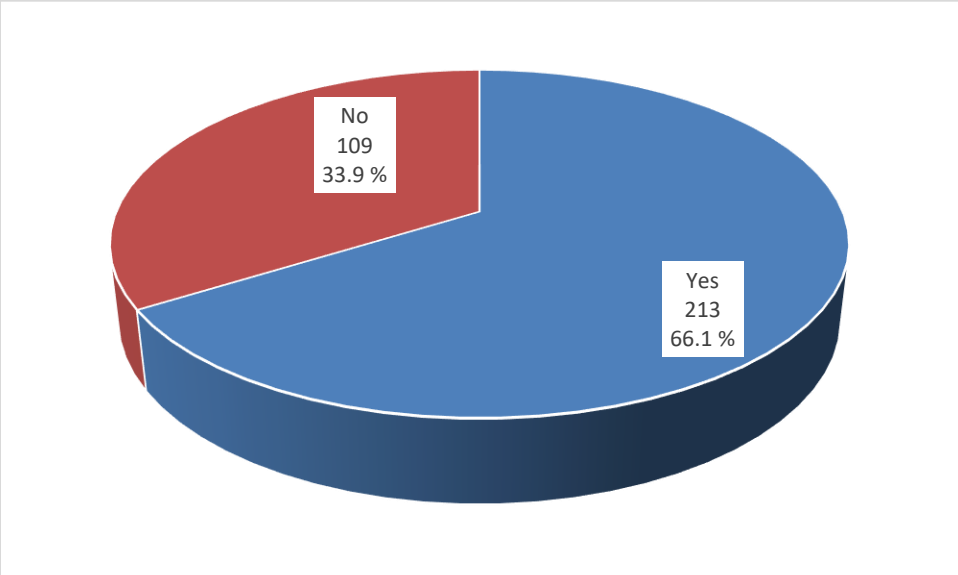
Table 3 Employment status

Employment status	Frequency	Percent
Student/ Unemployed	105	32.6
Professional employment/ Self employed	161	50
Domestic worker/ Casual worker	24	7.5
Housewife	32	9.9
Total	322	100

4.2 Prevalence of family planning in the extended postpartum period

Majority of the respondents, 66.1 % (213/322) used family planning, while 33.9 % (109/322) did not use family planning in the extended post-partum period.

Figure 4.4 prevalence of family planning in the extended postpartum period



4.2.1 Types of family planning methods used in the extended postpartum period

Majority of the respondents 29.1 % (62/213) used injections, 22.1% (47/213) used oral pills, 17.8% (38/213) used IUCDs, 16% (34/213) used condom and the least 15% (32/213) used an implant.

Table 4 Types of family planning methods

Family planning methods	Frequency	Per cent
Condom	34	16
Implant	32	15
Injection	62	29.1
IUCDs	38	17.8
Oral Pills	47	22.1
Total	213	100

4.2.2 Contraceptive knowledge

Majority of the respondents 35.7% (115/322) knew about the oral pills, 26.1% (84/322) knew about condoms, 13.4% (43/322) knew about injections, 10.9% (35/322) knew about emergency pills, 6.8% (22/322) knew about implants, 3.7 % (12/322) knew about IUCDs, 2.8 % (9/322) did not know any method while the minority 0.6% (2/322) knew about other methods.

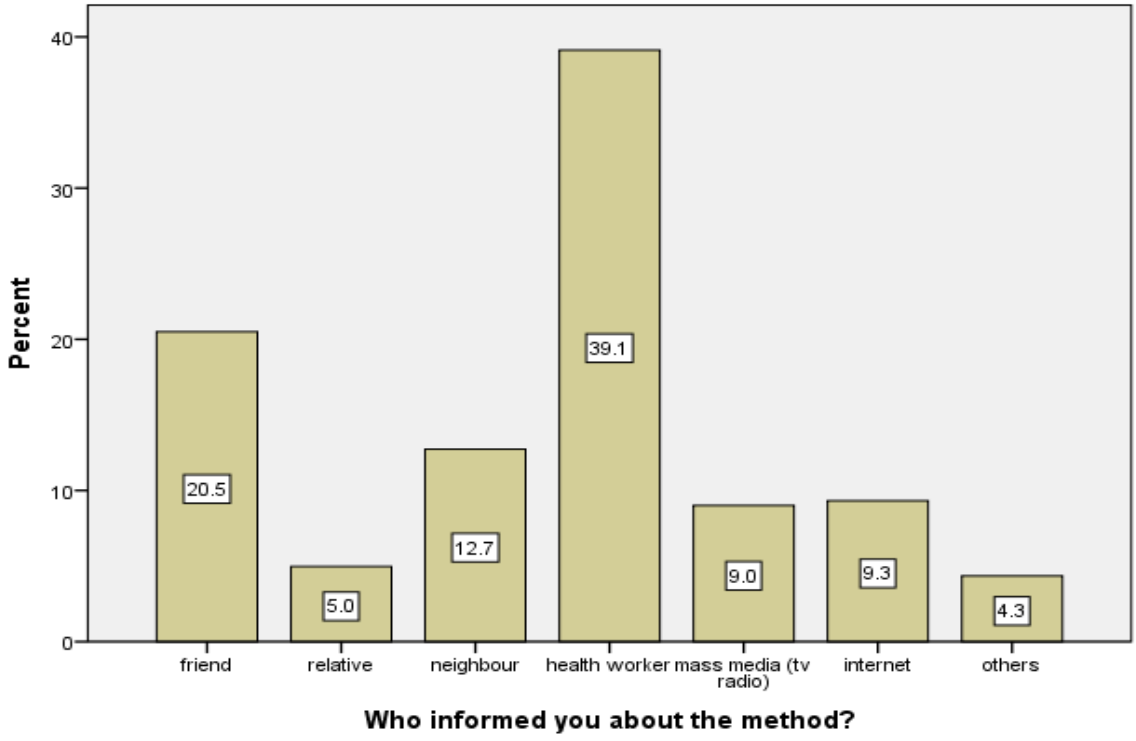
Table 5 Contraceptive Knowledge

Contraceptive method	Frequency	Percent
oral pill	115	35.7
emergency pills	35	10.9
Condoms	84	26.1
IUCDs	12	3.7
Implants	22	6.8
Injections	43	13.4
Others	2	0.6
dont know	9	2.8
Total	322	100.0

4.2.3 Source of information about contraceptive

Majority 39.1% (126/322) were informed by a health worker, 20.5% (66/322) were informed by a friend, 12.7% (41/322) were informed by a neighbour, 9.3% (30/322) were informed through the internet, 9.0% (29/322) were informed through mass media such as TV and radio, 5.0 % (16/322) were informed by a relative, and the minority 4.3% (14/322) were informed by other means.

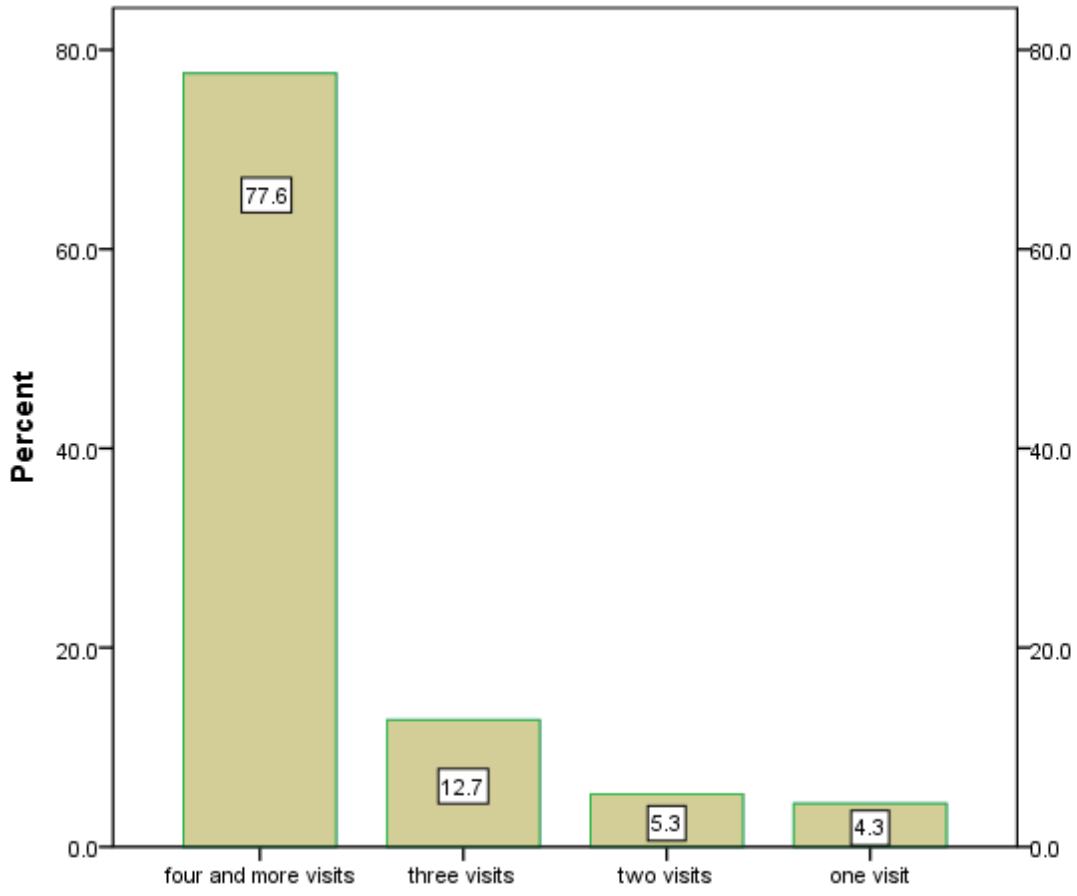
Figure 4.5 Source of information about contraceptive



4.2.4 Attendance of antenatal clinic

Majority of the participants 77.6% (250/322) went to the antenatal clinic more than four times, 12.7% (41/322) went for three visits, 5.3% (17/322) went for two visits and minority 4.3% (14/322) went for one visit.

Figure 4.6 Attendance of antenatal clinic



4.2.5 Prenatal counselling

Majority of the women 68.9% (222/322) were counselled about family planning, while minority 31.1 % (100/322) were not counselled about family planning during the antenatal visit.

Table 6 Prenatal counselling

Under went antenatal counselling	Frequency	Percent
Yes	222	68.9
No	100	31.1
Total	322	100.0

4.3 Socio-economic factors associated with use of family planning in the extended post partum period

Level of education had no significant association with the use of family planning in the extended post-partum period ($p = 0.279 > 0.05$). This showed that level of education did not influence use of family planning in the extended post partum period.

Marital status had a significant association with the use of family planning in the extended post-partum period ($p = 0.004 < 0.05$). This showed that those who were married were more likely to use family planning.

Similarly employment had a significant association with the use of family planning in the extended post-partum period ($p = 0.018 < 0.05$). This showed that those who were employed were more likely to use family planning methods than those who were not employed

Prior use of family planning had no significant association with the use of family planning in the extended postpartum period ($p=0.378>0.05$). This showed that prior use of family planning did not influence use of family planning in the extended postpartum period.

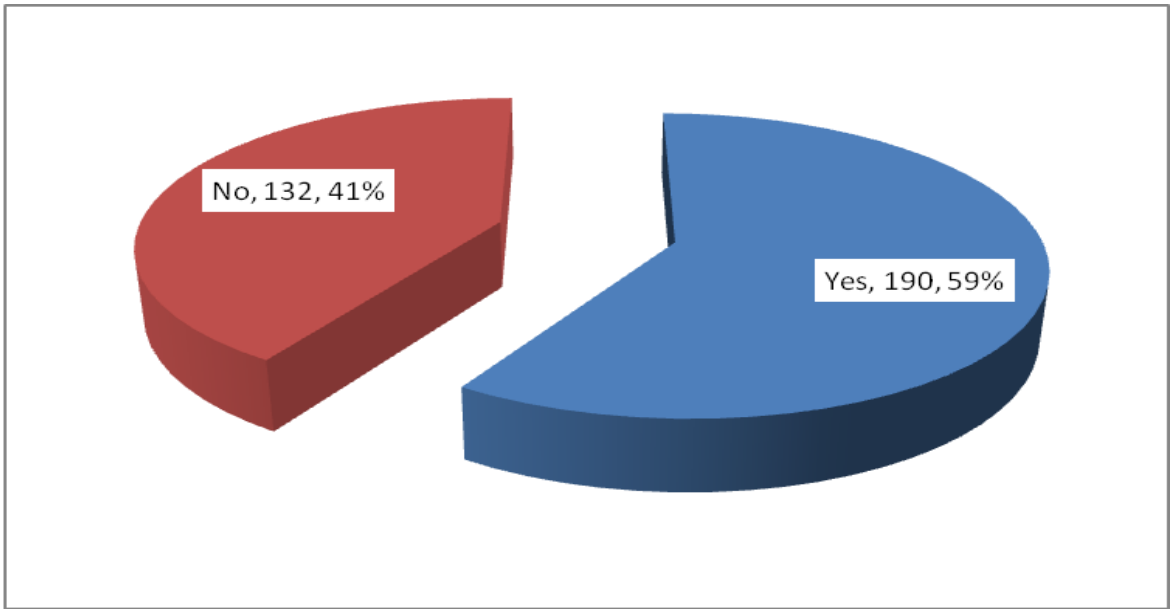
Table 7 Socio-economic factors associated with use of family planning in the extended post partum period

		Use of family planning in the extended postpartum period			
		Yes	**None**	**χ2**	**P value**
Highest level of education	Primary	41	22	21.014	0.279
	Secondary	80	30		
	Tertiary	85	55		
	None	7	2		
	Total	213	109		
Marital status	Never married	35	18	41.001	0.004
	Cohabiting	19	14		
	Married	153	71		
	Separated	5	4		
	Widowed	1	2		
	Total	213	109		
Employment	Student/Unemployment	69	36	101.439	0.018
	Employment/Self employed	101	60		
	Domestic worker/Casual worker	21	3		
	Housewife	22	10	778	0.378
use a family planning method before this pregnancy	Yes	122	68		
	No	91	41		
	Total	213	109		

4.3.1 Prior use of family planning

Majority of the women 59% (190/322) used family planning while 41% (132/322) did not use family planning before the last pregnancy.

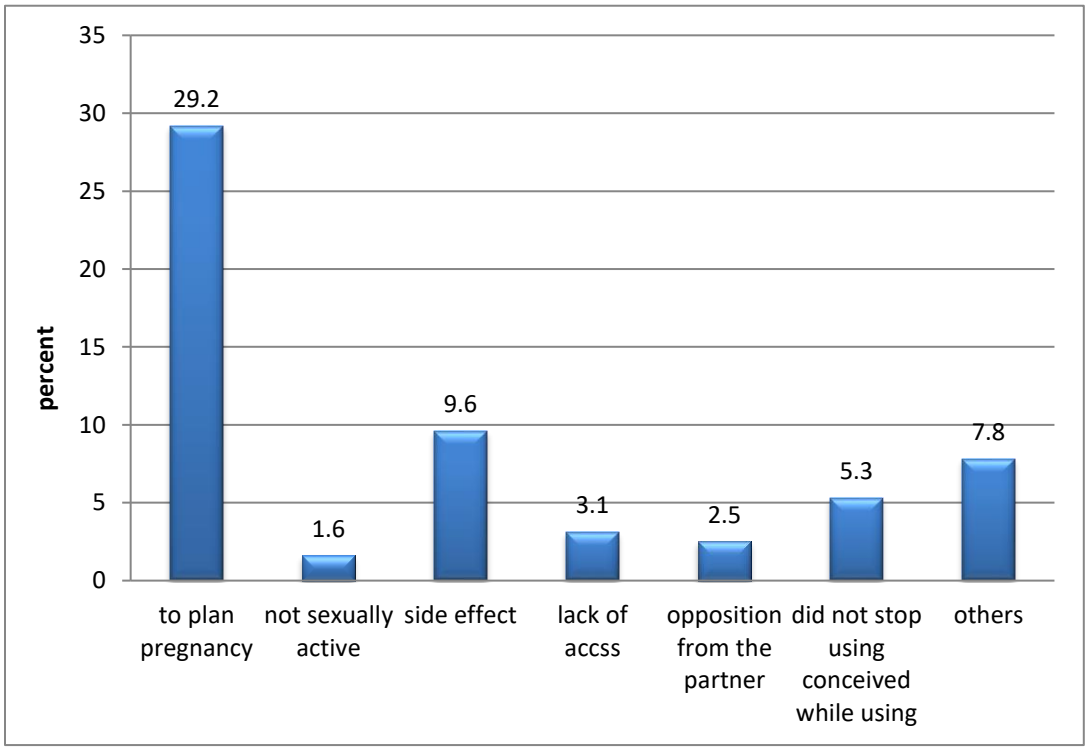
Figure 4.7 Prior use of family planning



4.3.2 Reasons for stopping use of family planning.

The women who used family planning before the last pregnancy were 190. Majority 29.2% (94/190) of the women stopped because they wanted to get pregnant, while 9.6 % (31/190) stopped due to side effects, 7.8 % (25/190) stopped due to other reasons, 5.3 % (17/190) conceived while still on contraceptives, 3.1 % (10/190 stopped due to lack of access, 2.5% (8/190) stopped due to opposition from patner and the minority 1.6 % (5/190) stopped as they were not sexually active.

Figure 4.8 Reasons for stopping use of family planning.



CHAPTER FIVE

DISCUSSION

5.1 Prevalence of family planning in the extended postpartum period

This study found out that the prevalence of family planning in the extended postpartum period among women who were attending the well baby clinic in MTRH, Uasin Gishu County was 66.1 % (213/322). This was within the range of KDHs (2014) survey which depicted that 53 % of married women aged 15-49 were currently using modern methods of family planning in Kenya and 61 % sexually active unmarried women used contraceptives.

This was also in agreement with a study done in Woreta Ethiopia by Weldegerima and Deneke (2007) in which 63.7% respondents reported modern contraceptive utilization. The similarity could be due to the findings reported in both of the studies which showed that majority of the respondents were aware about contraceptives.

This study differed from a study by Nigussie et al. (2016) in Kebribeyah town, Somali region, which found out that the prevalence of contraceptive use was 12.3% among women in the postpartum period, which was much lower than the contraceptive use in this study.

The difference may be due to the study setting. This study was institutional-based, it was conducted among postpartum women who came to MTRH well baby clinic and such subjects could exhibit good health-seeking behaviour and have opportunity to obtain health education (Abraha et al., 2017). While the study in Somali was community based and the participants were recruited in the households hence women who were not regular attendees of clinics participated.

A study by Jelong'o et al (2017) on "Determinants of Contraceptive Use among Postpartum Women in a county hospital in Kisii county Kenya" differed from this study as more than three quarter (86.3%) of the respondents were found to have adopted postpartum contraception. The difference could be due to the target population variation. The study population for this study were women who had delivered within the last one year while in the study in Kisii women who had brought their children for the second dose of measles vaccine between 18 and 24 months were sampled as participants

5.1.1 Types of family planning methods

This study found out that the types of family planning methods used in the extended post partum period among women who were attending the well baby Clinic in MTRH, Uasin Gishu County, were injections, oral pills, IUCDs, condoms and implants. The most used 19.3 % (62/322) were injections, followed by oral pills 14.6% (47/322), which are short-term hormonal methods and the least used 9.9% (32/322) were implants.

This concurred with a study by Gebreselassie et al. (2008) who found out that even women who adopt modern contraceptive methods for birth spacing after delivery are likely to opt for short-term hormonal methods (injectable /oral contraceptives).

This findings also concurred with Mengesha et al. (2015) in a study on “Adoption of Contraceptive in the Extended Postpartum Period in North west Ethiopia” which showed that the most frequently used contraceptive method was injection (30.6) followed by birth control oral pill (9.9%). This could be due to the similarities in the methodologies adopted. Both studies were cross sectional studies. The similarity could also be explained by the study population. In both studies, women who had delivered within the last one year were targeted.

However these findings differed from study in Nigeria by Akinlo et al. (2013), which showed that among users of modern contraceptives, majority 3 per cent had used male condoms, 2 per cent had used pills and injectables, and about 1 per cent had used IUDs or female sterilization. This discrepancy could be due to the difference in study settings. This study was based in an urban area while in the study in Nigeria by Akinlo et al. (2013), more than two-thirds (69 percent) of the postpartum women interviewed were in rural areas, and the remaining 31 percent were interviewed in the urban areas. This difference could have led to availability and accessibility of different types of family planning methods.

Similarly in a study by Abraha et al. (2017), on “Postpartum Modern Contraceptive Use in Northern Ethiopia: Prevalence and Associated Factors” showed that the most widely used type of modern contraceptive method was injectable contraceptives (59.7%).

However the study in Northern Ethiopia differed from this study in that the second most used contraceptive was implants (24.7%) while in this study implants was the least used method. This can be explained in light of women’s preferences regarding contraceptive methods and health care workers’ attitudes toward contraceptive methods as observed by USAID, (2012). Health workers skills in provision of the long term reversible methods could also be a determining factor in their uptake.

5.1.2 Contraception Knowledge

The study showed that the types of contraceptive methods that most of the respondents had heard about were oral pills 35.7% (115/322), 26.1% (84/322) had heard about condoms while the minority 0.6% (2/322) had heard about other methods other.

When a woman mentioned at least one modern contraceptive method, she was considered knowledgeable (ICF, 2017, Rutstein & Rojas 2017). This was in line with a study in Nigeria by Oye-Adeniran et al. (2006) in which in the urban areas, the methods the respondents had heard most about were pill (32.3%), followed by condoms (28.1%). This similarity might be atrributed to the study sites. The studies were both carried out in an urban area.

This differed from a study on "Awareness and Acceptance of Contraception in Post-Partum Women in a Tertiary Care Hospital of Delhi" by Singh et al. (2015) in which majority of the respondents had awareness regarding terminal method (sterilization) of contraception and least for injectables. The variation could be due to socio demographic difference. In this study majority of the women were in professional employment/self employed (50%) and minority of the participants were housewives (9.9 %). While in the study in Delhi majority of the participants were housewives at 83.7% (412/492) and minority were employed 16.3% (80/492). Majority of the participants in this study were aged between 25-29 (108/322) years while in the study in Dehli majority of the participants were aged between 15-24 (254/492). The variation could also be due to availability of different methods of family planning.

5.1.3 Source of information about the contraceptive

The source of information about the contraceptive showed that majority 39.1% (126/322) were informed by a health worker, followed by 20.5% (66/322) who were informed by a friend, and the minority 4.3% (14/322) were informed by other means.

This was similar to a study in South West Nigeria by Durowade et al. (2017) in which majority of the participants 71.8 % were informed about the contraceptive from health workers. The similarity could be due to the methodologies adopted. The research design for both studies was descriptive cross sectional.

This was in contrast with a study in Nigeria by Oye-Adeniran et al. (2005) in which in urban areas the respondents got their information mostly from friends, 43.7%. The discrepancy could be due to difference in study setting. This study was institutional based while the study in Nigeria was community-based.

5.1.4 Antenatal visits

This study established that majority of the participants 77.6% (250/322) went to the antenatal clinic more than four times, 12.7% (41/322) went for three visits, and minority 4.3% (14/322) went for one visit. Regular contact with a doctor, nurse or midwife during pregnancy allows women to receive services vital to their health and that of their future children (UNICEF,2018).

This was similar to a study in rural West Sumatra, Indonesia by Agus and Horiuchi (2012), in which 77.9 % received ANC more than four times. This could be explained by similar demographic characteristics of the respondents. In this study, cumulatively, 84.8% of the women were aged between 18 and 34 years which was the main maternal age among the women participants and in the study in Indonesia majority of the sample population were aged between 21 to 34 years (75.9%)

This differed from a study in Kebribeya Town , Somali Region Eastern Ethiopia by, Nigussie et al. (2016) in which majority of the women went for one antenatal clinic visit 49.3% (150/304) while minority of the participants went for two antenatal clinic visits 8.9% (27/304).

The difference could be due to the study setting. This study is institutional-based, it was conducted among postpartum women who came to MTRH well baby clinic and such subjects could exhibit good health-seeking behavior and have opportunity to obtain health education (Abraha et al., 2017) while the study in Somali was community based where by the participants were recruited in the households and hence women who were not regular attendees of clinics participated.

5.1.5 Family Planning Counselling

Majority of the women in the study 68.9% (222/322) were counselled about family planning during the antenatal visit, while minority 31.1 % (100/322) were not counselled about family planning during the ante natal visits. ANC provides an opportunity to encourage deliveries with a skilled birth attendant and to advice and counsel on the importance of family planning and the contraception options available, including those that can be provided at the time of a facility based birth (WHO 2006, WHO 2010b)

This was in agreement with a study in Ohio, USA by Weisband et al. (2017) in which majority 57.5% of the women reported that their healthcare provider discussed postpartum contraception with them during prenatal care. The similarity could be due to the study setting. Both studies were institutional based.

This differed with a study in Kebribeya Town, Somali Region Eastern Ethiopia by Nigussie et al. (2016), where minority of the women 24.6% (134/304) were counselled about FP during antenatal care.

This variation between the studies, can be explained by the difference in methodologies adopted. Whereas, this was a crosssectional study of postpartum women attending a health facility in a urban area, the study in somali was cross-sectional community based survey which recruited participants at the household level.

5.2 Socio-economic factors associated with use of family planning in the extended post partum period

The study found out that, level of education had no significant association with the use of family planning in the extended post-partum period ($p = 0.279 > 0.05$). This implied that level of education did not influence use of family planning in the extended post partum period.

This study was similar to a study carried out on "Patterns and Trends of Postpartum Family Planning in Ethiopia, Malawi, and Nigeria: Evidence of Missed Opportunities for Integration". The results showed that there was no statistically significant effect of education level on use of family planning in Nigeria (Houston et al., 2015). This however contrasted with a study by Bwazi et al. (2014) where there was a significant association between utilization of PPFP services and level of education.

Marital status had a significant association with the use of family planning in the extended post-partum period ($p = 0.004 < 0.05$). This implied that women who were married were more likely to use family planning in the extended post partum period.

This study was in agreement with a study in Addis Ababa in which marital status was found to be significantly associated with PPFP 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.Risk perception relating to unwanted or mistimed pregnancy is expected to be high among married women than none married ones (Gabremedhin et al., 2018). In contrast Ndirangu et al. (2016) reported that single women used contraceptives more than their married counterparts who tend to shy away from their usage due to socio cultural implications.

Employment had a significant association with the use of family planning in the extended post-partum period ($p = 0.000 < 0.018$). This showed that those who were employed were more likely to use family planning than those who were not employed. This was in line with a study by Nigussie et al. (2016) in which occupation was among the factors that had significant association with postpartum contraceptive utilization.

Prior use of family planning had no significant association with the use of family planning in the extended post-partum period ($P=0.378>0.05$). This implied that prior use did not influence use of family planning in the extended post-partum period.

This contrasted with a study carried out in Addis Ababa Ethiopia by Gebremedhin et al. (2018) in which history of family planning use before current pregnancy were significantly associated with PPFP use, meaning that those who had history of family planning use before current pregnancy were more likely to use in the PPFP.

This discrepancy may have been due to different study settings, this study was institutional based while the study in Ethiopia was community-based cross sectional study.

This also differed with a related study carried out in Turkey, by Yilmazel and Balci (2013) on “Preferences and Related Factors for Postpartum Contraception in Pregnant Women”. The rate of pregnant women who used a contraceptive method before were more likely to think of using a contraceptive method after the birth (42.9%). These were higher than the rate of pregnant women (29.1%) who did not use any method before as they were less likely to think of using a contraceptive method after the birth.

5.2.1 Reasons for stopping family planning for those who used before this pregnancy

This study showed that for the participants who used family planning before this pregnancy, majority 29.2% (94/190) stopped because they wanted to get pregnant, while 9.6 % (31/190) stopped due to side effects , and the minority 1.6 % (5/190) stopped as they were not sexually active.

This was similar to a study in Nigeria by Oye-Adeniran et al. (2005), which found that those who had used a family planning method before but were not currently using, majority 61.7% stopped because they wanted more children, followed by 17.9% who did not expect to have sex and 17.2% stopped because they were afraid of side effects.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The prevalence of family planning in the extended postpartum period was 66.1 %.

The study concluded that the use of family planning in the extended postpartum was much higher than the national contraceptive prevalence rate (CPR) that was 58% and the Uasin Gishu County family planning utilization which was 56% (KDHS, 2014).

On socio-economic factors associated with use of family planning in the extended post partum period, marital status was associated with use of family planning. Women who were married were more likely to use family planning in the extended postpartum period than those who have never been married, who are cohabiting, separated and widowed.

Employment was associated with use of family planning. Women who were employed were more likely to use family planning in the extended postpartum period than those who were not employed.

Level of education and prior use did not influence use of family planning in the extended post partum period.

6.2 Recommendations

1. The Government through the Ministry of Health should put in more effort to increase prevalence of family planning in extended postpartum period in women who have never been married, who are cohabiting, separated and widowed.

2. The government should create more employment opportunities for women.

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APPENDICES

Appendix 1: Consent Form

PURPOSE OF THE STUDY

Hello, my name is Winnie Ng'eno a Master's student from Moi University, School of Public Health. We would like to seek your consent to participate in the study "Family Planning in the Extended Postpartum Period among women attending the well baby clinic in Moi Teaching and Referral Hospital, Uasin Gishu County, Kenya."

If you agree to participate, you will be asked questions about your background, family planning knowledge and prior use, use of family planning etc. The interview will take about 30 minutes.

BENEFITS OF THE STUDY

This study will generate knowledge on the prevalence and socio-economic factors associated with use of family planning in the extended postpartum period

RISKS

Your participation is completely voluntarily. You may decide to terminate your participation at your own free will. You are not required to answer questions that you are not comfortable with. Your decision not to participate in the study or to withdraw will not be shared with anyone, and this will not affect the care you are entitled to in this hospital or elsewhere. The answers will be kept confidential and your name will not appear anywhere. If you have any questions, you are free to ask.

DECLARATION OF PARTICIPANT

Your honest and genuine participation in responding to the questions is very important and highly appreciated. Are you willing to continue with this interview?

If yes proceed with the interview. If no thank the participant for their time and discontinue the interview.

_____ Respondent Signature _____Date

_____ Interviewer Signature_____

Date

If there is anything that you need clarification with or if you are interested with the feedback of the study please contact any of the following;

Winnie Ngeno	-	0724684238	Principal investigator
Dr. David Kaihura	-	0733806015	Research supervisor
Mrs Everlyn Rotich	-	0722358834	Research supervisor

Appendix 2: Interviewer Administered Questionnaire

Dear Respondent

This study forms part of the requirement for the researcher's Master's Degree in Public Health in Moi University. You should not write your name on the questionnaire. This guarantees anonymity. Honest and complete responses to all the questions are requested and will be highly appreciated. The researcher is only interested in your opinion. The responses you give will be treated with utmost confidentiality.

Thank you for taking your time to answer the questions.

Instructions to the interviewer:
1. Circle the response or write in the space provided.
2. Be keen to follow the skip patterns.
3. Countercheck to ensure all the relevant questions are completed.

SECTION 1: DEMOGRAPHIC AND SOCIOECONOMIC CHARACTERISTICS			
No	**Question**	**Response**	**Skip**
1	How old are you?	18 - 24 years 25 - 29 years 30 - 34 years 35 - 39 years 40 - 44 years 45 - 49 years	
2	Have you ever attended school?	1. Yes 2. No	If no skip to 4
3	What is the highest level of education attained?	1. Primary 2. Secondary 3. Tertiary(certificate/ diploma/degree)	
4	What is your religion?	1. Catholic 2. Protestant 3. Muslim 4. Others 5. None 6.	

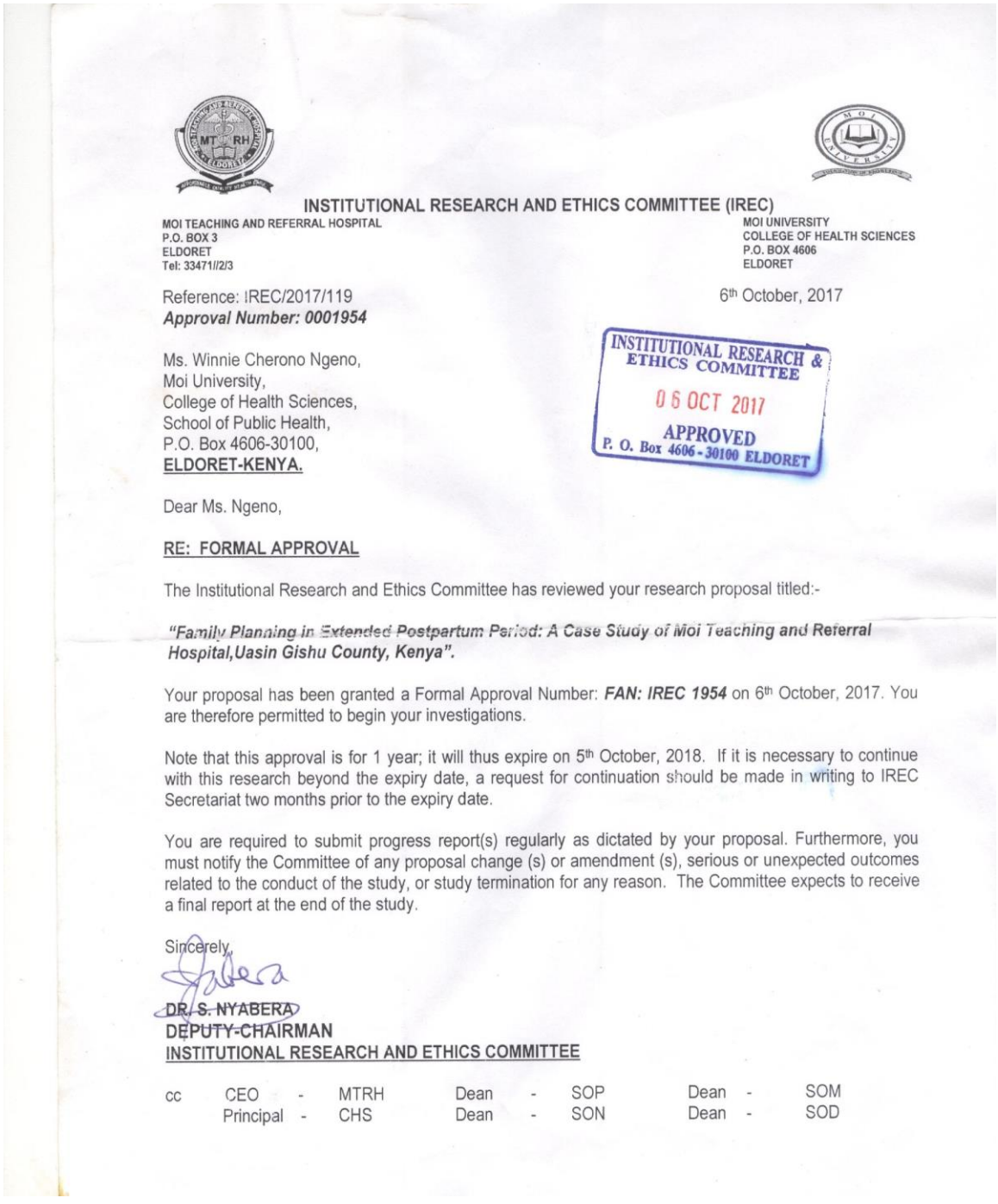
5	Whom do you live with?	1. Alone 2. Spouse/partner 3. Parents 4. Relatives 5. Others (specify)…….. ……	
6	What is your current marital status?	1. Never married 2. Cohabiting 3. Married 4. Separated 5. Widowed	
7	What is your current employment status? (circle only one response)	1. Student/unemployed 2. Professional employment/self employed 3. Domestic worker/casual worker 4. Housewife	
SECTION 2: CONTRACEPTION KNOWLEDGE AND PRIOR USE			
8	Which family planning methods have you heard about?	1. oral pill 2. Emergency pill 3. Condoms 4. IUD 5. Implant 6. Injection 7. Sterilization/permanent 8. Others…….. 9. Don't know	
9	Did you use a family planning method before this pregnancy?	1. Yes 2. No	If no skip to 14
10	Which family planning method did you use?	1. Emergency pill 2. Oral pill 3. Implant 4. Injection 5. Condom 6. IUD 7. Others ……..	

11	Who informed you about the method?	1. Friend 2. Relative (specify)…… 3. Neighbor 4. Health worker 5. Mass media (TV, Radio) 6. Internet 7. Others, (specify) ……..	
12	Where did you obtain the method from?	1. Public Hospital/health centre 2. Private health facility/clinic 3. Drug shop/pharmacy 4. Others (specify) ……..	
13	Why did you stop using the method?	1. To plan pregnancy 2. Not sexually active 3. Side effects 4. Lack of access 5. Opposition from the partner 6. Did not stop using conceived while using 7. Others ……	
SECTION : PRENATAL CONTRACEPTIVE COUNSELING			
14	Did you attend antenatal clinic during pregnancy?	1. Yes 2. No	If No skip to 19
15	How many times did you attend the antenatal clinic? (Confirm with ANC card)	1. One visit 2. Two visit 3. Three visit 4. Four and more visits	
16	Did any of the health workers inform you about family planning during the antenatal visit?	1. Yes 2. No	If No skip to 19
17	Which methods were you informed of during the antenatal visit?	1. Condoms 2. Oral pill 3. Injection 4. Implant 5. IUD 6. Others	

18	When were you advised to start family planning after delivery?	…….	
SECTION 4: FURURE PLANS			
19	Do you plan to have another child?	1. Yes 2. No	If No skip to 21
20	When would you like to have the next child?	1. After one year 2. After two years 3. After three years 4. Others specify ……	
21	Are you currently using a contraceptive method?	1. Yes 2. No	If yes go to question 22. If no skip to question 23
22	Which method are you using?	1. Oral pill 2. Implant 3. Injection 4. Condom 5. IUD 6. Others ……..	
23	Why are you not using a contraceptive method?	……	

Appendix 3: Map to Moi Teaching and Referral Hospital in Eldoret

Appendix 4: Institution Research and Ethics Committee approval



INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471//2/3

MOI UNIVERSITY
COLLEGE OF HEALTH SCIENCES
P.O. BOX 4606
ELDORET

Reference: IREC/2017/119
Approval Number: 0001954

6th October, 2017

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
06 OCT 2017
APPROVED
P. O. Box 4606 - 30100 ELDORET

Ms. Winnie Cherono Ngeno,
Moi University,
College of Health Sciences,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.

Dear Ms. Ngeno,

RE: FORMAL APPROVAL

The Institutional Research and Ethics Committee has reviewed your research proposal titled:-

"Family Planning in Extended Postpartum Period: A Case Study of Moi Teaching and Referral Hospital,Uasin Gishu County, Kenya".

Your proposal has been granted a Formal Approval Number: ***FAN: IREC 1954*** on 6th October, 2017. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; it will thus expire on 5th October, 2018. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date.

You are required to submit progress report(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

Sincerely,

DR. S. NYABERA
DEPUTY-CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc CEO - MTRH Dean - SOP Dean - SOM
Principal - CHS Dean - SON Dean - SOD

Appendix 5: Approval to conduct research at Moi Teaching and Referral Hospital

An ISO 9001:2008 Certified Hospital

MOI TEACHING AND REFERRAL HOSPITAL

Telephone:(+254)053-2033471/2/3/4
Mobile: 722-201277/0722-209795/0734-600461/0734-683361
Fax: 053-2061749
Email: ceo@mtrh.go.ke/directorsofficemtrh@gmail.com

Nandi Road
P.O. Box 3 – 30100
ELDORET, KENYA

Ref: ELD/MTRH/R&P/10/2/V.2/2010

10th October, 2017

Ms.Winnie Cherono Ngeno,
Moi University,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.

APPROVAL TO CONDUCT RESEARCH AT MTRH

Upon obtaining approval from the Institutional Research and Ethics Committee (IREC) to conduct your research proposal titled:-

"Family Planning in Extended Postpartum Period: A Case Study of Moi Teaching and Referral Hospital, Uasin Gishu County, Kenya".

You are hereby permitted to commence your investigation at Moi Teaching and Referral Hospital.

10/10/2017

DR. WILSON K. ARUASA
CHIEF EXECUTIVE OFFICER
MOI TEACHING AND REFERRAL HOSPITAL

cc - DCEO, (CS)
- Director of Nursing Services (DNS)
- HOD, HRISM