FACTORS INFLUENCING UPTAKE OF LONG-TERM FAMILY PLANNING METHODS AMONG WOMEN OF REPRODUCTIVE AGE IN NYARIBARI CHACHE SUB- COUNTY, KISII COUNTY, KENYA

BY

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DECLARATION

Declaration by the student:

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

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DEDICATION

I dedicate this thesis to my family; their words of encouragement and support was felt every step of the way.

ABSTRACT

Family planning (FP) is a key strategy for achievement of Sustainable Development Goals (SDGs) 1, 3, 4, 5 and 10. It provides an opportunity to ensure a balance between population size and available resources and directly contributes to improved maternal and newborn health. Promotion of FP in countries with high birth rates has the potential to reduce poverty and hunger and avert 32% of all maternal deaths and nearly 10% of childhood deaths. In Sub-Saharan Africa (SSA), the rate of population growth is one of the highest in the world at 2.8%. In Kenya, use of long-term family planning methods also referred to as long acting reversible contraceptives (LARC) remains relatively low compared to other methods; with Total Fertility Rate (TFR) at 3.9, while Contraceptive Prevalence Rate (CPR) and unmet need for FP being estimated at 58% and 18% respectively. Kisii County is one of the populous counties in Kenya with total fertility rate of 3.7 children per woman hence the need to maximize use of LARCs. This study sought to assess factors that influence uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County. Specifically, the current study assessed the knowledge, socio–cultural and facility-related factors influencing uptake of long-term family planning methods (LARC) in women of reproductive age (15-49yrs) in Nyaribari Chache Sub-County, Kisii County. A cross-sectional study design was adopted. Women of reproductive age (n=406) residing in Nyaribari Chache Sub-County identified as the sudy population. Simple random sampling was adopted for individual questionnaire administration while key informant interviews were conducted to get views of the health facility to establish facility-related factors influencing the use of long-term FP methods. Data analysis was done by entering data in Statistical Package for Social Science (SPSS) version 22.0. Important summary statistics were obtained and associations were examined using Chi-square test. Study participants grouped into two categories, non-user of LARC (n=294) and users of LARC (n=112) Logistic regression conducted while controlling for age and marital status showed that knowledge of LARC had a two-fold increase in the use of LARC by women of reproductive age (P=0.001), women whose income was above Ksh10,000 (P=0.001), those who interacted with women groups (P=0.001) had increased use of LARC while decreased use of LARC was observed in casual labourers and peasant farmers (P=0.001), those with 4 and above living children (P=0.041). Attending a government health facility increased the uptake of LARC (P=0.020) in Nyaribari Chache Sub-County, Kisii County, Kenya. Results presented are crucial in informing the government, health care organizations, program managers and policy makers on knowledge, socio–cultural and facility-related factors influencing uptake of long-term family planning methods to design specific FP initiatives in order to achieve the SDGs and decrease the unmet need for contraceptives.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	:	Acquired Immune Deficiency Syndrome
ACOG	:	American College of Obstetrician and Gynecologists
ASRHP	:	Adolescent Sexual and Reproductive Health Policy
CDC	:	Center for Disease Control
CIOMS	:	Council for International Organizations of Medical Sciences
CPR	:	Contraceptive Prevalence Rate
DHS	:	Demographic Health Survey
DRH	:	Division of Reproductive Health
FP	:	Family Planning
FPCIP	:	Family Planning Costed Implementation Plan
HIV	:	Human Immune Virus
IMR	:	Infant Mortality Rate
IUCD	:	Intra Uterine Contraceptive Device
KHIS	:	Kenya Health Information System
KDHS	:	Kenya Demographic and Health Survey
KNBS	:	Kenya National Bureau of Statistics
KEMSA	:	Kenya Medical Supplies Authority
KM	:	Kilometer
LARC	:	Long Acting Reversible Contraceptive
LMICs	:	Low Medium Income Countries
SDG	:	Sustainable Development Goal
MMR	:	Maternal Mortality Ratio
Mcpr	:	Modern Contraceptive Prevalence Rate
SCPHN	:	Sub-County Public Health Nurse
SSA	:	Sub-Saharan Africa
SPSS	:	Statistical Package for Social Science

TFR	:	Total Fertility Rate
UN	:	United Nations
USA	:	United State of America
UP	:	Unplanned Pregnancy
OC	:	Oral Contraceptives
WHO	:	World Health Organization
WRA	:	Women of Reproductive Age

DEFINITION OF KEY TERMINOLOGIES

Contraception -contraceptive method has been defined as a product or medical procedure which interferes with reproduction from acts of sexual intercourse

Contraceptive prevalence rate – is the percentage of Women of Reproductive Age (WRA) who report themselves or their partners as currently using at least one contraceptive method of any type.

Diffusion – Spread of information, ideas and behaviors among individuals, communities and countries.

Long term family planning methods- Contraceptive methods that have one effect between 3yrs to 10 years from initiation

Short acting contraceptives- Contraceptive methods that have an effect between a day and three months from initiation

Women of reproductive age- World Health Organization defines these to be women between the ages 15-49 years.

Unmet need for contraception - The proportion of fertile, sexually active women 15–49 years old who are not using contraception and do not want to become pregnant at all (unmet need for limiting) or within the next two years (unmet need for spacing).

Unintended pregnancy – A pregnancy that happens when a woman wanted to postpone conception for at least two years or did not want to become pregnant at all.

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CHAPTER ONE
INTRODUCTION

1.1 Background Information

Family planning (FP) includes the services, policies, information, attitudes, practices, and commodities, including contraceptives, that give women, men, couples, and adolescents the ability to avoid unintended pregnancy and choose whether and/or when to have a child (Ellen Starbird, 2016). Family planning is central to efforts in reducing poverty, promoting economic growth, raising female productivity, lowering fertility and improving child survival and maternal health (Tesfa & Gedamu, 2018).An unintended pregnancy is one that happens when a woman wanted to postpone conception for at least two years or did not want to become pregnant at all (Singh et al., 2014). Unmet need for FP is defined as the proportion of fertile, sexually active women 15–49 years old who are not using contraception and do not want to become pregnant at all (unmet need for limiting) or within the next two years (unmet need for spacing) (Nemser & Addofoh, 2022). World Health Organization recommends a spacing births interval of at least 24 months to give a mother time to recuperate from previous pregnancy; shorter birth intervals are characterized by negative maternal and child health outcomes**,** prevention of unintended pregnancies therefore helps lower maternal morbidity and mortality (WHO, 2022). The greatest contributors to children dying within the first year of life are the age at which women have their children and the extent of the interval between births (Guttmacher, 2002).Family planning delays pregnancies in young girls who are at increased risk of health problems from early child bearing and prevents pregnancies among older women who are also at risk (WHO, 2022).

Key global initiatives, including the Sustainable Development Goals (SDGs) and the Global Strategy for Women's, Children's and Adolescents' Health, call for universal access to FP services as a right of women and girls, it is critical for a healthy life (WHO, 2018). The agenda of FP is also central in the International Conference on Population and Development after 25 years (ICPD25) commitments in addition to SDG 3.7 (Kungu et al., 2020). Family planning is a key component of Kenya's development agenda and it is addressed in the Vision 2030 social pillar on provision of reproductive health for the poor and vulnerable population (Kungu et al., 2020).

Contraception assists couples and individuals attain their reproductive goals while enabling them exercise their right to have children by choice (UN Department of economic and social affairs, 2020). World Health Organization notes that access to high-quality, affordable sexual

and reproductive health services and information, including effective contraceptive methods is fundamental to realizing the rights and well-being of women and girls, men and boys (WHO, 2018). Universal access to effective contraception ensures that all adults and adolescents can avoid the adverse health and socio – economic consequences of unintended pregnancies (WHO, 2018). United Nations (UN) classifies contraceptives into either modern or traditional (UN Department of economic and social affairs, 2020), further modern contraceptive methods are classified into under 3 broad groups: 1) Long term FP methods also known as long-acting reversible contraceptives (LARC), i.e. intrauterine contraceptive devices (IUCD) and hormonal implants; 2) short-acting reversible contraceptives (i.e., oral contraceptive (OC) pills, condoms, spermicides, and injectable hormones; and 3) permanent methods (i.e., sterilization via tubal-ligation or vasectomy (Tibaijuka et al., 2017).

Modern contraceptive method has been defined as a product or medical procedure which interferes with reproduction from acts of sexual intercourse (Hubacher & Trussell, 2015). Modern contraceptive method in this case has the following characteristics: a sound basis in reproductive biology, a specific protocol for correct use and existing data showing that the method has been tested in an appropriately designed study to evaluate efficacy under various conditions (Festin et al., 2016). Contraceptive prevalence Rate (CPR) is the percentage of Women of Reproductive Age (WRA) who report themselves or their partners as currently using at least one contraceptive method of any type (UN Department of economic and social affairs, 2020), (Vladimira Kantorova, 2020). Unplanned pregnancies occur instances where there is lack of contraceptive use, improper use, method failure (Bahamondes et al., 2020).Choosing a contraceptive method is an important decision, a method that is not effective can lead to unintended pregnancy, important to note is that half of all pregnancies are unintended that is 3.1million each year; half of those result from contraceptive failure (Bahamondes et al., 2020).

Short acting contraceptive method users have suggestively higher rates of unintended pregnancies during the first year of typical use, whereas the 1-year pregnancy rate for typical use is less than 1 per 100 women for LARCs, it is 6 per 100 women for injectables and 9 per 100 women for combined oral contraceptive pills (Bahamondes et al., 2020). In addition, adolescents and young women (less than 21 years old) who use short acting contraceptives have much higher contraceptive failure rates than older women (Bahamondes et al., 2020). High discontinuation of injectables and other short-acting methods, by contrast reduces the modern Contraceptive Prevalence Rate (mCPR) (Ahmed et al., 2019).

The high contraceptive effectiveness of LARC is in part due to the fact that many behavior-related variables that affect compliance are removed, also the contraceptive effectiveness of LARCs is independent of user characteristics such as parity and age (Bahamondes et al., 2020). Many health providers are concerned about LARC use among adolescents and women who have never been pregnant before, WHO and other international agencies have approved and even recommended use of LARC among this population (Bahamondes et al., 2020).The Kenya national policy guideline for provision of Adolescent and Youth Friendly Reproductive Health Services (AYFRHS) 2015, identified provision of family planning including LARC as an essential package in offering of quality reproductive health services to young women (MOH, 2015). The LARC methods have higher user acceptability/satisfaction, fewer side effects and pose fewer risks to a woman's health because they're estrogen free, LARC does not require repeated hospital visits hence less strain on the health systems (Kungu et al., 2020).

Currently Kenya's population is at 47million(KNBS, 2019)19.9million are WRA (KNBS, 2019a), these number will determine Kenya's population growth in the next decade. The anticipated momentum of births from the huge female population can be slowed by use of LARC due to their many benefits, despite these great health and social benefits, LARC is still underutilized (Kungu et al., 2020).

Knowledge of FP methods is a prerequisite for making an informed decision to initiate FP use (KDHS, 2014b). In a study of predictors of LARC use among unmarried young adults, women with high IUD knowledge were six times more likely to be current LARC users (Shoupe, 2016a). Therefore, the current study assessed knowledge on long term family planning methods among WRA age in Nyaribari Chache Sub-County, Kisii County, Kenya.

Religion and FP interact in intricate ways at personal, community, civil society and governmental levels, recognizing these intersections and relationships can help eliminate barriers restricting the advancement of FP. (FP2030, 2023). Sociodemographic characteristics such as age of women, ethnicity, number of live children, wealth quintile, occupation of husband, education of husband have been factors that contribute to LARC use or non-use (Bhandari et al., 2019). Therefore, the current study sought to determine socio – cultural factors that influence uptake of long-term family planning methods among WRA in Nyaribari Chache Sub-County, Kisii County, Kenya. There are various health system challenges which continue to affect uptake of LARC, included staff shortage, inadequate skills, inadequate counseling, and inadequate infrastructure as often cited by health care providers (Ontiri et al., 2019). Therefore, the current study sought to find out facility-related factors associated with

the uptake of long-term family planning methods among WRA in Nyaribari Chache Sub-County, Kisii County, Kenya.

1.2 Problem Statement

Reports from KHIS indicated that 100% of women who attended any health facility for FP in Nyaribari Chache Sub-C county received a short acting contraceptive method either an injectable and oral pill in 2019 (MOH, 2019). In the year 2020, 2021 and 2022 KHIS reported Nyaribari Chache Sub-County having an average uptake of 65-83% for short acting contraceptives, (MOH, 2020, 2021, 2022). According to KHIS reports, Nyaribari Chache Sub-County is leading in uptake of short-term FP methods in Kisii County (MOH, 2020, 2021, 2022) Kenya Demographic Health Survey 2014 reported Kisii County to have teenage pregnancy rate of 15.9% (KDHS, 2014b). Report on teenage pregnancies in KHIS show that Nyaribari Chache was the biggest contributor accounting for 21% of Kisii County teenage pregnancies (MOH, 2021). Nyaribari Chache is the second most populous Sub-County in Kisii County with population density of 1373 people per square kilometer against a county density of 1,047 and a national density of 87.79 people per square kilometer (KNBS, 2019b).

Short acting methods are associated with higher contraceptive discontinuation and failure rates as compared to long term FP methods, while 31% of contraceptive users discontinued use of method within 12 months of starting use (KDHS, 2014b). In addition, women who have an intention to stop childbearing but use short-term contraceptives are also regarded as having unmet contraceptive need (Imasiku et al., 2014). Using KDHS 2003 data, the study found 0.4% failure rate for LARC methods against 2.7% for short acting methods and 15.8% for traditional methods, total unintended births were at 44%, and out of which 5% were terminated (Kungu et al., 2020). If LARC methods were used, an estimated 11% (69,000) out of the 44% unintended births could have been averted (Kungu et al., 2020).

The expansion of access to LARC is key as it can address high rates of unintended pregnancies including teenage pregnancies while reducing population growth. This study sought to assess the knowledge related, socio – cultural and facility-related factors influencing uptake of long-term family planning methods among WRA in Nyaribari Chache Sub-County, Kisii County, Kenya.

1.3 Significance of the Study

The findings of this study would be used to expand access to FP services in particular long-term FP methods. Further, findings of the study would be used to lobby for county

government support of effective FP programs through government leadership, commitment and investment in coming up with supportive policies for service delivery and community engagement.

Finally, these results would be useful to the county government in resource allocation for quality FP services: consistent supply of FP commodities, skilled human resource and community mobilization through education programs i.e., via information education communication and mass campaigns.

1.4 Objectives

1.4.1 General Objective

To assess factors influencing uptake of long-term family planning methods among women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya.

1.4.2 Specific Objectives

1. To assess the knowledge-related factors that influence uptake of long-term family planning methods among women of reproductive age.
2. To determine socio – cultural factors that influence uptake of long-term family planning methods among women of reproductive.
3. To identify facility-based factors that influence uptake of long-term family planning methods among women of reproductive age.

1.4.3 Research Questions

1. What are the knowledge-related factors that influence uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya?
2. What are the socio – cultural factors associated with uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya?
3. What are the facility-related factors associated with the uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya?

CHAPTER TWO
LITERATURE REVIEW

2.1 Overview of Family Planning

The effective use of contraceptives has improved the quality of health for women and children; it has been shown to decrease maternal mortality risks and improve child survival through birth spacing (Ahmed et al., 2019). By enabling a shift in the age structure of a population towards increased ratio of working population to dependent population, FP has accelerated fertility declines and spurred economic development of nations through demographic dividends (Bloom et al., 2017). Maternal mortality refers to death of a mother due to complications during pregnancy, child delivery or within 42 days after delivery or loss of products of conception; it has been a key global health concern associated with the death of one in every four women of reproductive age (WHO, 2019). Approximately 225 million women in LMICs who did not want to become pregnant had unmet need for modern contraception, estimated 30 million unplanned births occurred annually and 40 million abortions, half of them illegal and unsafe, occur annually as well (Osotimehin, 2015). The third SDG aimed at healthy living and well-being for all and targeted reducing maternal mortality ratio (MMR) to under 70 deaths per 100,000 live births and under-5 mortality rate to below 25 per 1000 live births respectively (UN, 2015). Kenya was among SSA countries ranked high in maternal mortality, Kenya's MMR has been 362/100,000 live births (NCPD, 2015). In 2015 world leaders envisioned that MMR would be reduced to less than 70/100,000 live births by the year 2030 through implementation of SDGs, the current global MMR is 210/100,000 (WHO, 2017). Family planning was one of the four most critical maternal mortality interventions identified by (WHO, 2014), increased access to and utilization of effective contraceptive methods was key recommendation for the reduction of MMR and under five mortality (Starbird et al., 2016). The impact of contraceptive use on reduction of maternal mortality has been achieved through factors which included prevention of early pregnancies, prolonging of time between births and reducing the high parity rates (Brown et al., 2015).

Low use of FP has been associated with poor maternal and child outcomes, a review of KDHS 2014 done by (Chikandiwa *et al*, 2018) identified that there was an inverse correlation especially in North Eastern region of Kenya in the current use of contraceptives with high risk births and under-5 mortality. The contraceptive methods commonly used in a population were key determining factor of fertility, as some methods including LARCs, were more effective at

averting pregnancy than others, they had been reported to have the lowest discontinuation rates (UN, 2020).

Among the 1.9 billion WRA living in the world in 2019, 1.1 billion have a need for FP, 842 million are using modern methods of contraception while 80 million use traditional methods (UN, 2019). In the world, 190 million women want to avoid pregnancy but do not use any contraceptive method (UN, 2019). Globally, 46% of WRA use short acting reversible contraceptives, 19.4% use LARC and 24.6% permanent methods, traditional methods account for a small percentage (UNDP, 2022). In Sub Saharan Africa (SSA) 63% of WRA use short acting reversible contraceptives it is the only region where injectables are the most dominant method accounting for 33% of contraceptive use, LARC and permanent methods account for approximately 25% contraceptive users (UNDP, 2022). Kenyan CPR in 2014 was lower than Rwanda at 64.1% in 2019, but higher than the neighboring countries such as Burundi at 28.5% in 2016, Ethiopia at 41.4% in 2019, Tanzania at 38.4% in 2015 and Uganda at 39.0% in 2016 (UNDP, 2022). In SSA, Guinea-Bissau reported the highest percentage of implant users at 47% followed by Rwanda at 43% (UNDP, 2022). As reported in (KDHS, 2014b), Kenya has contraceptive method mixes limited to short acting contraceptives, Injectables were used by 26% of WRA and oral pills used by 8% of WRA, 9.9%, 3.4%, 3.2%, and 0.0% of married couples used implants, IUCD, female sterilization, and vasectomy, respectively. In Kenya, Kirinyaga County was leading with uptake of IUCD at 13% while Busia County was leading with uptake of implants at 23.6% (KDHS, 2014b). Kisii County had 41.8% of WRA using injectables almost double the national average while only 9.2% and 3.5% were using implants and IUCD respectively (KDHS, 2014b). Reports from Kenya Health Information Systems (KHIS) the official ministry of health online reporting platform in 2019 reported 100% of women who attended any health facility for FP in Nyaribari Chache Sub-County received a short acting contraceptive either an injectable and oral pill (MOH, 2019). In the years 2020, 2021 and 2022 KHIS reported an average uptake of 65-83% for short acting contraceptives (MOH, 2020, 2021, 2022).

In a follow up study done on use of injectables in Kenya it was noted that15% of users experienced method failure and became pregnant each year in 2013 and 2014 while another proportion switched to implants and oral pill another around 10% of the users stopped use and became nonusers in the same period (Kungu, 2022). In Kenya between 2013 and 2014 there was an average of 11% of pregnancies among women, about 80% of the pregnancies were contributed by non-use of FP while the rest was due to method failure, 75% of pregnancies

resulted from method failure of either injectable or oral pill (Kungu, 2022). Another study done in the USA did provide evidence that increased uptake of LARC drastically reduced abortion rates and unintended pregnancies (Shoupe, 2016a). Unintended pregnancy represents approximately 44% of all pregnancies in LMIC (Khan et al., 2020), they were responsible for approximately 55million unplanned births and 25million miscarriages in a year (Bearak et al., 2020) this contributes to over 75% of the 118,000 maternal deaths each year in LMICs (Khan et al., 2022). Almost one-third of pregnancies occur due to contraceptive failures, primarily as a result of using short-term modern contraceptives and traditional FP methods (Khan et al., 2020). A study conducted in Colorado by (Ricketts et al., 2014) reported an increase in LARC use from 15% to 19% among low-income teenagers and young women which translated to reduction of birth and abortion rates by 29% and 34% among the same women.

Kenya national Family Planning Costed Implementation Plan (FPCIP) 2017-2020 had several targets towards rights-based FP and improved maternal and child health outcomes for the period 2016 to 2020 the targets were to increasing implant use from 12% to 16%, increase IUCD use from 5% to 7% while averting 2 million unintended pregnancies, 62,500 unsafe abortions, 4700 maternal deaths and overall reduction in unmet need from 15% to 13% most of which were not met (MOH, 2017b). The Kenya national FPCIP 2021-2024 goal was to reduce unmet need for FP from 18% to 9% by 2024 while the national Adolescent Sexual and Reproductive Health policy (ASRHP) 2015, guided on provision of sexual and reproductive health services to adolescents including provision of LARC methods (MOH, 2015).

Utilization of FP methods is determined by factors at the individual, household and community level; geographic pattern of contraceptive use may be associated with influences at the sub county or county level such as the availability and accessibility of health services in these areas (Ettarh & Kyobutungi, 2012). While access is an issue, many other reasons have been cited by women for not using contraceptives including lack of knowledge, cultural, personal, religious opposition, health concerns and fear of side effects (Najafi-Sharjabad et al., 2013). To meet the unmet need for modern contraception, countries need to increase resources, improve access to contraceptive services and supplies and provide high quality services and large-scale public education intervention to reduce social barriers (Darroch et al., 2013).

2.2 Knowledge- Related Factors Influencing Uptake of LARC

Knowledge of FP methods was a prerequisite for making an informed decision to initiate FP use (KDHS, 2014b), correct knowledge about LARC methods was a key factor in ensuring increased and appropriate use of the same (Adedini et al., 2019). Accessible, quality

information and services would improve the choices that were available which would enable women choose from the full range of FP methods the most effectively to avoid pregnancy (Darroch, 2013). The lower likelihood of unmet need for FP among women with higher levels of education indicated that higher educational attainment positively influenced the ability of women to bridge barriers in accessing FP services (Ettarh et al., 2012). A study conducted by (Adedini et al., 2019) noted that use of LARC methods was three times higher among women with higher education as compared to those with no education in many of the SSA countries. In his study (Bhandari et al., 2019) have shown that education brought greater gender equality and encouraged women's autonomy in participating in contraceptive decision making. Exposure to FP messages was associated with higher likelihood of use of contraceptives while non-use of contraceptives was reported to be due to lack of knowledge (Ettarh et al., 2012). A study done in Nigeria reported an association between 'women's knowledge of LARCs and the use of LARCs among women that were using contraception; this was because women's knowledge about the efficacy and safety of LARC methods could strongly influence both the selection and decision to continue to use the selected method over time (Bolarinwa et al., 2019).

Kenya Demographic Health Survey 2014 demonstrated that education of women is associated with fertility; ideal family size decreased from 7.0 children among women with no education to 3.9 children among those with at least some primary education, TFR decreased from a high of 6.7 for women with no education to 3.1 for women with at least some secondary education (KDHS, 2014b). Low level of education go hand in hand with insufficient knowledge of FP services and therefore increased unmet need for FP; in her study (Darroch, 2013) explained that many women do not use contraception because of poor understanding of their risk for pregnancy, health concerns about potential side effects. Another study in the neighboring Uganda suggested that LARC methods might not have been accepted in part because of inadequate knowledge among women of reproductive age, increased levels of education translated to improved usage of contraceptives and reduced risk of unwanted pregnancies (Tibaijuka et al., 2017).

Husband's education was also a predictor of LARC use, a study done in Nepal noted that women having husbands or partners who had primary education or no formal education were less likely to use LARC when compared to those women whose husbands had higher level education, more educated men may have knowledge of various methods of FP which resulted to positive decision making on LARC use (Bhandari et al., 2019).

The low utilization of LARC in Nyaribari Chache Sub-County could be an indicator of likelihood of knowledge gap; As such, the current study sought to establish the knowledge-related factors influencing uptake of long-term family planning methods in WRA in Nyaribari Chache Sub-County, Kisii County, Kenya.

2.3 Socio – Cultural Factors Influencing Uptake of LARC

Reducing unplanned births and family size would save on public sector spending on health while reducing unintended pregnancies, particularly among adolescents and would improve educational and employment opportunities for women (Singh et al., 2014). Research that covered large parts of the world indicated a link between poverty and lower uptake of modern contraceptives; wealthier women were as twice as likely to use modern FP as opposed to women in the lower wealthy quantile (Singh et al., 2014). The effects of social networks and inter-personal communication on shaping women's attitudes about FP and contraceptives has been recognized in social networks research, especially on contraceptive use behavior (Sarfraz et al., 2021). Low CPR prevailed in situations where women were in low socio – economic status and lived in extended patriarchal families (Mosha et al., 2013). Family planning programs would be needed to engage male partners to have an enabling environment that would allow women to pick effective contraceptive options (Tibaijuka et al., 2017). It was important to involve men in increasing uptake of FP because they influenced women, as they cared about their partner's reproductive health and supported them while on the other side of spectrum others stood in the way of women making FP decisions for (WHO, 2018).

Women from rich households and urban areas had a much higher uptake of LARC methods as compared to poor and rural women (Adedini et al., 2019). The observed association of household wealth with modern contraceptive use and unmet need had been reported with greater likelihood of contraceptive use and lower probability of unmet need found among women in wealthier households compared to those in poorer households (Ettarh et al., 2012). Contraception was more likely to be adopted by high parity women who want to cease childbearing or to space childbearing (Ettarh et al., 2012), many mothers over 35 years and those that have 4 to 5 children opted for LARCs (Tibaijuka et al., 2017). Older women were more likely to use LARC methods as compared to their younger women with different explanations from different studies, it has been noted that older women tend to have more children therefore with completed their family size and perhaps desire no more children; hence their preference for LARC method compared to short acting contraceptives (Adedini et al., 2019). However, LARC methods were suitable and effective contraceptives for younger

women, particularly because they are good for birth spacing and are reversible (Adedini et al., 2019).

Studies across the world have demonstrated that married women had higher likelihood of using LARC method than other categories of marital status; that was sometimes because they had achieved the desired family size (Adedini et al., 2019). In Nepal (Bhandari et al., 2019) found out sociodemographic characteristics such as age of women, ethnicity, number of living children, wealth quintile, occupation and education of husband, were strong contributorsto uptake of LARC methods. In Pakistan (Sarfraz et al., 2021) reported that husband endorsement and their shared role in FP decision making was acknowledged by the women as necessary for LARC uptake as well as for their continued use of LARC. The same study among Pakistan women showed that they had some reluctance to use contraceptives, especially LARCs, because of myths and misconceptions about long term side-effects, which had largely been driven by rumors and shared through social communications (Sarfraz et al., 2021). In Nepal the younger women preferred using short acting or natural method FP due misconceptions such as LARCs causing infertility and IUCD moving towards the heart from uterus (Bhandari et al., 2019).

A study done to analyze use of LARC in SSA noted that being employed was a predictor of LARC use, respondents in managerial position were the most likely to use the LARC contraceptives at 6.26%, followed by those in manual labor at 3.0%, clerical or agriculture at 2.8% and the unemployed being the least at 1.89% (Adedini et al., 2019); it was note that religion was a major constrain to the uptake of FP services in Africa (Mustafa et al., 2015). A study done by (Mihretie et al., 2022) in Ethiopia reported increased LARC uptake and continuation with male partner involvement. Women also relied on more senior women in their husband's family to influence their husband for decision making on FP (Sarfraz et al., 2021). In a study by (Tibaijuka et al., 2017) in Uganda, noted that LARC methods were generally more available in urban areas and lack of trained health providers in the rural and low-income areas to handle insertions and removal of FP methods cited as a contributing factor. In Nigeria a study reported that religious belief played a significant role in acceptance of LARC, most of the women who accepted LARC were Christians, it was believed that many Islamic faithful kept their wives indoors reducing their chance to access health facilities (Jumbo et al., 2021).

In Kenya (Ontiri et al., 2019) noted that women opted for injectables due to interference and lack of support from their partners and this greatly hindered uptake of LARC.Women preferred use of short-term methods in particular injectables because they could be used discretely without partner interference (Tibaijuka et al., 2017). Family planning continued topromote gender equality, education and economic empowerment for women and girls (Njilu, 2022), social consequences of unintended pregnancy among girls in Kenya would include termination of education, child marriage and unsafe abortion (MOH, 2015). Another study conducted in Kenya reported increases of LARC use among women of higher socio – economic status, perhaps because they had better exposure and access to contraceptive information and services (Kungu et al., 2020). Poverty was a hindrance to contraceptive use; KDHS 2014 reported 32% of women in the lowest wealth quintile using a method of contraception, while 58% to 66% of women in the higher wealth quintiles used contraception, that being as a result of economic constraints affecting the ability to buy contraceptives or seek sexual and reproductive health services (KDHS, 2014b).

Age, marital status, economic status and education level had been found to have considerable influence on whether a woman will or will not practice FP. Currently, socio – cultural factors influencing uptake of long-term FP methods in Nyaribari Chache Sub-County were not well established.As such, the study sought to assess socio – cultural factors influencing uptake of long-term family planning methods among WRA in Nyaribari Chache Sub-County, Kisii County, Kenya.

2.4 Facility-Related Factors Contributing to Uptake of LARC

From a human welfare viewpoint, all clients deserved quality treatment, correct information, safe medical conditions and reliable products (Bikorimana, 2015). Service quality was one of the main factors that affected demand and use for LARCs, improved quality of care was an important goal of international FP programs (Bikorimana, 2015). Effective delivery and uptake of modern FP methods depended a lot on the competency and attitude of the service providers particularly for LARCs; well informed and supportive counseling by health care providers, during initiation of contraception and reinforcement during follow up visits did much to promote satisfaction and continuation of chosen method especially LARCs (Chigbu et al., 2010). High contraceptive discontinuation added more to the unmet need for contraceptives, in SSA it partly reflected the fact that FP methods especially LARCs were less widely available than other regions (Jain et al., 2013).

A previous study (Khan et al., 2022) conducted by (Khan et al., 2022) in Bangladesh found out that facility-level factors were key predictors of contraceptives use particularly LARC, nearness of health facility to the clients and availability of LARC methods at the health facility was important, the further a person was from the health facility the less likely they would use LARC. In a study done in Uganda, having trained personnel was an important factor in utilization of LARC methods, the methods were considered unavailable in the rural health facilities specifically by clients while health workers alluded to the fact that there was inadequate number of trained health workers at the rural health centers which posed a challenge in offering of LARC methods (Tibaijuka et al., 2017). In the same study done by (Tibaijuka et al., 2017) in Uganda, both clients and health workers mentioned the wide availability of short-acting contraceptive methods and the unavailability of LARC, as this wasan important factor in their choice of using or not to using a method. Furthermore, some healthcare facilities were not women-friendly; for example, as they did not have private space for LARC use discussion (Khan et al., 2020). In Tanzania, it was noted that there was provider bias where health providers did not always recommend or provide LARC methods for delayers of first birth to avoid the women who came to the facility asking for removal before the removal date (Sedekia et al., 2017). Another study by (Blumenberg et al., 2020) noted that decreased donor funding from which governments compensated expenditure hence affordable sexual and reproductive health services resulted to costs being shifted towards users, and this resulted to plateau or reduction on the prevalence of mCPR for instance the case of Congo DR from 2013-2017.

Review of studies examining the impact of the COVID-19 pandemic showed that there was reduced availability of and access to contraceptive services particularly LARCs which could slow the achievement of specific SDGs (UNDP, 2022). There were various health system challenges which continued to affect uptake of LARC, often cited by health care providers as staff shortage, inadequate skills, inadequate counseling, and inadequate infrastructure (Ontiri et al., 2019), a survey on FP done in Kenya also noted fluctuation of FP budget line over the years & diminishing donor support affected uptake of LARCs (MOH, 2017b). The Government of Kenya through its FP2020 commitment pledged to increase the portion of the national budget for family planning services, more specifically scaled up on equipping health providers with skills on provision of LARCs in close partnership with private sector providers who had been lagging behind (MOH, 2017a).

The national family planning costed implementation plan 2017-2020 reported that during a survey on FP commodity security in health facilities only 14% of the service delivery points had no stock-out over the three-month period before the survey while on the day of the survey only 19 per cent of the facilities had no stock-out (MOH, 2017b). Counties in Kenya held a greater role in the implementation of FP programming, however, a lot of the financial resources had been dedicated towards human resources, operations and maintenance as opposed to addressing systems gaps like commodity supplies, commodity insecurity grew over the same period as financing was inadequate to cover the increasing number of modern contraceptives method users, driven by Kenya's youthful population (ThinkWell, 2020).

Long term family planning methods had not been promoted widely, predominantly due to providers' misconceptions about the appropriateness of use, particularly for adolescent, nulliparous, or unmarried women (Tibaijuka et al., 2017). Kenya national Adolescent Sexual and Reproductive Health Policy 2015 pointed out that lack of reproductive healthcare services for adolescents was particularly lack of contraceptive education, with contraceptives not being affordable or available which meant that use among married and unmarried adolescents was generally low in developing regions (MOH, 2015), the policy recommended LARC inclusion in provision of FP to adolescents.

Government health facilities remain the major provider of contraceptive methods in Kenya; specifically, 60% of women using modern contraceptive obtain their contraception from a government source (KDHS, 2014b).According to Kenya health facility assessment done in 2018/2019, 85% of health facilities in Kenya offer FP however, they were mostly ready to offer short term FP methods as 85% were ready to offer male condoms and injectables while 80% were ready to offer pills as a form of FP (KHFA, 2018). Long-term family planning methods to adolescents were the least services offered at health facilities with IUCD at only 3.2%, provision of male condoms and pills for adolescents were at 53% and 49% (KHFA, 2018). One of the challenges noted among factors influencing uptake of LARC in the FP costed work plan 2017-2020 was inadequate training of personnel to especially offer the same, the strategy also noted that access to health facilities by women affected uptake of long LARC (MOH, 2017b).

According to Kenya health service delivery report 2018 women were not satisfied with the waiting time at the health facility for FP services, this definitely affected the uptake of different services at the FP clinic, a fifth of the FP clients reported paying for services which

could have had an impact on uptake of the various services (KHFA, 2018). The report advocated for strong advocacy and verification measures by the counties to ensure that clients specifically from lower socio – economic profiles were not deterred by costs of services (Kenya, 2018). The transition to decentralization and political activities and strikes by health workers in parts of Kenya, along with growing contraceptive demands, might have affected the supply chain of contraceptive method distribution and procurement (Ahmed et al., 2019).

Kenya Health Information system data for Nyaribari Chache Sub-County records higher prevalence of short acting family planning methods as compared to long term family planning methods; as such the current study sought to identify facility-related factors that were associated with the uptake of long-term family planning methods among WRA in Nyaribari Chache Sub-County, Kisii County, Kenya.

2.5 Theoretical Framework-Health Promotion Model

The study adopted the health-protective theory which has its roots in the Health Belief Model. Health belief was a psychological model developed by Rosenstock in the 1966 for studying and prompting the uptake of services offered by social psychologists, the model was furthered by Becker in 1970s and 1980s. Subsequent amendments were made in 1988 to accommodate evolving evidence generated within the community about the role knowledge and perceptions play in personal responsibility(Glanz et al., 2002).

Originally, this model was designed to predict behavioral responses to treatment received by acutely or chronically ill patients, but in more recent years, the model has been used to predict more general behavior (Ogden, 2007). The original health belief model constructed by Rosenstock, 1966, was based on core beliefs of individuals, based on their perceptions, for example; perceived susceptibility, perceived severity, and perceived benefit. Constructs of mediating factors were later added to connect the various perceptions with the predicted health behavior, cues to action, health motivation and perceived threat. The prediction of this model is the likelihood of the individual to undertake recommended health action such as preventive and curative health actions.

2.6 Conceptual Framework in the Utilization of Long-Term Family Planning Methods

Knowledge of FP methods was a prerequisite for making an informed decision to initiate FP use (KDHS, 2014b), while correct knowledge about LARC methods was a key factor in ensuring increased and appropriate use of the same (Adedini et al., 2019). Kenya Demographic Health Survey 2014 demonstrated that education of women is associated with

fertility, the TFR decreased from a high of 6.7 for women with no education to 3.1 for women with at least some secondary education (KDHS, 2014b). Low level of education go hand- in-hand with insufficient knowledge of FP services and therefore increased unmet need for FP; in a study by (Darroch, 2013) it was explained that many women do not use contraception because of poor understanding of their risk for pregnancy, and health concerns about potential side effects. Husband's education was also a predictor of LARC use. For example, a study done in Nepal noted that women having husbands or partners who had primary education or no formal education were less likely to use LARC when compared to those women whose husband had higher level education, and more educated men may have knowledge of various methods of FP which resulted to positive decision making on LARC use (Bhandari et al., 2019).

The effects of social networks and inter-personal communication on shaping women's attitudes about FP and contraceptives has been recognized in social networks research, especially on contraceptive use behavior (Sarfraz et al., 2021). Women opted for injectables due to interference and lack of support from their partners and this greatly hindered uptake of LARC as women preferred use of short-term methods, in particular, injectables because they could be used discretely without partner interference (Ontiri et al., 2021). It was reported by (Sarfraz et al., 2021) that husband endorsement and their shared role in FP decision making was acknowledged by women as necessary for LARC uptake as well as for their continued use. Socio – demographic characteristics such as ethnicity, number of living children, and sex of children were demonstrated to be contributors to uptake of contraceptives (Darroch et al., 2013). The observed association of household wealth with modern contraceptive use and unmet need has been reported in many studies with greater likelihood of contraceptive use and lower probability of unmet need found among women in wealthier households compared to those in poorer households (Ettarh et al., 2012). Religious belief played a significant role in acceptance of LARC, most of the women who accepted LARC were Christians, it was believed that many Islamic faithful kept their wives indoors reducing their chance to access health facilities (Jumbo et al., 2021).

Government health facilities remain the major provider of contraceptive methods in Kenya. Specifically, 60% of women using modern contraceptive obtain their contraception from a government source (KDHS, 2014b).Unmet need for FP can be reduced by improving the quality of care, including the nature and content of client provider interactions and the availability of different types of FP methods in health facilities (Jain et al., 2013). Long term

FP methods have not been promoted widely predominantly due to providers' misconceptions about the appropriateness of use particularly for adolescent, nulliparous, or unmarried women (Tibaijuka et al., 2017). According to Kenya health service delivery report 2018 women were not satisfied with the waiting time at the health facility for FP services, this definitely affected the uptake of different services at the FP clinic, a fifth of the FP clients reported paying for services which could have had an impact on uptake of the various services (KHFA, 2018). Other challenges noted among factors influencing uptake of LARC in the FP costed work plan 2017-2020 was inadequate training of personnel to especially offer the same, the strategy also noted that access to health facilities by women affected uptake of long LARC (MOH, 2017b). A study conducted by (Khan et al., 2022) found out nearness of health facility to the clients and availability of LARC methods at the health facility was important, the further a person was from the health facility the less likely they would use LARC.

The age of women and marital status, especially being unmarried, often receive strong stigma if they are sexually active, linked to judgmental treatment by providers which in turn reduce these women's ability to obtain services (Darroch et al., 2013). The dependent variablein this study was uptake of long-term family planning method while the independent variables were knowledge related factors, socio – cultural factors and facility related factors; the covariable were age and marital status as per figure 2.1.

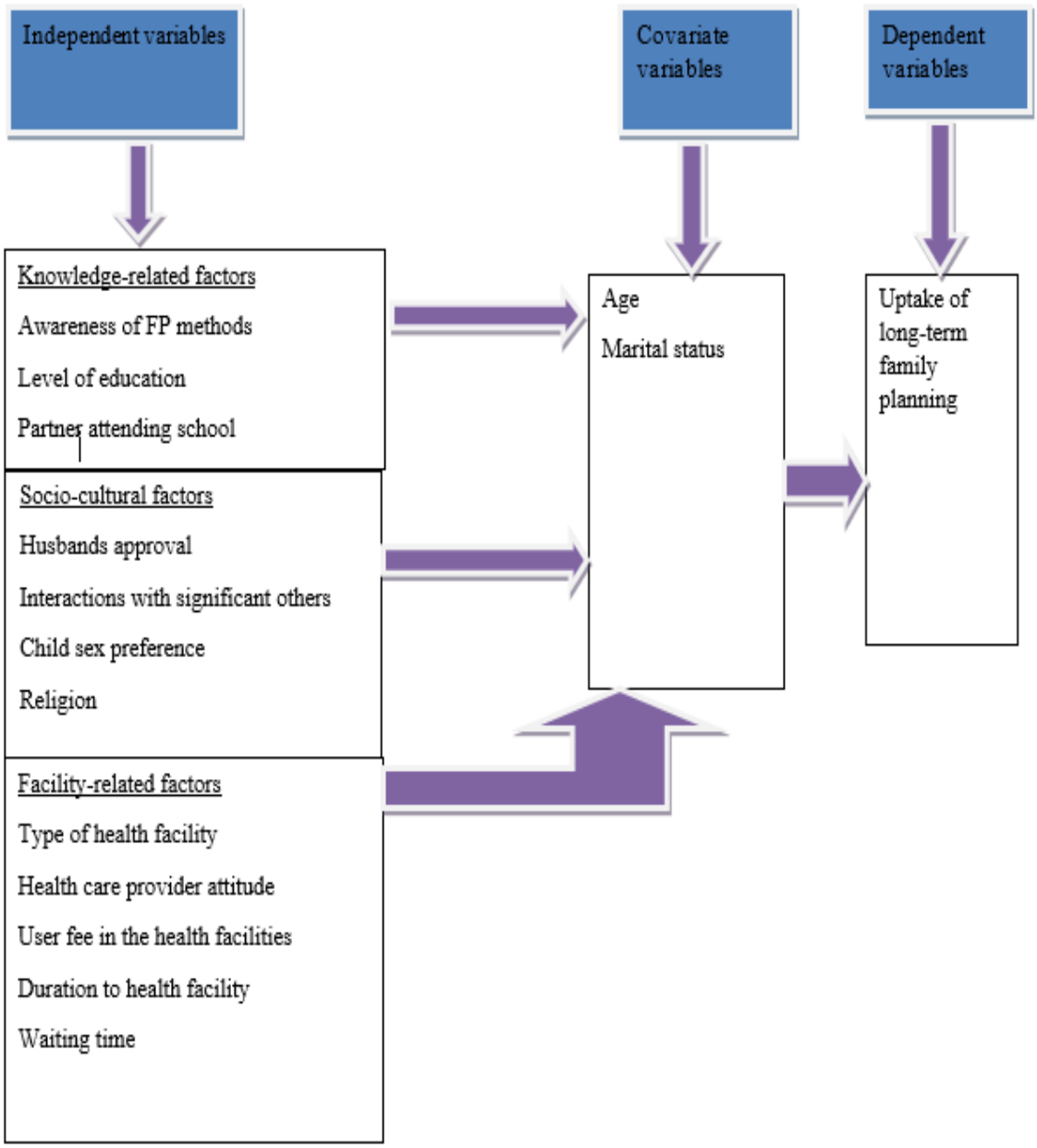

Figure 2.1 Conceptual framework in utilization of family Planning

CHAPER THREE
METHODOLOGY

3.1 Study Site

This study was carried out in Nyaribari Chache Sub-County which is within Kisii County located in the old Nyanza province (KNBS, 2019b). Nyaribari Chache Sub-County has population of 166,906 people and a population density of 1,229 persons per km^2(KNBS, 2019)There are a total of nineteen health facilities in Nyaribari Chache Sub-County comprising of three private health facilities, two faith-based hospitals and fourteen government health facilities according to Kenya Health Information System (KHIS). Medical supplies in the government health facilities come from Kenya Medical Supplies Authority (KEMSA) while the private health facilities get medical supplies privately according to KHIS (Appendix 1).

3.2 Research Design

This was an analytical cross-sectional study conducted over a period of three months in 2019, because data had to be I only had to collected only data once while aiming at assessing factors that influence uptake of long-term family planning methods among women of reproductive age in Nyaribari Chache Sub County.

3.3 Study Population

The study involved interviewing 422 women of reproductive age (15 years to 49 years) residing in Nyaribari Chache Sub-County, Kisii County who were both FP users and non-users. The study also involved obtaining information via 8 key informants who were health care workers in the FP clinic in the health facilities and also the Sub-County reproductive health coordinator and sub county pharmacist in the study area.

3.4 Sample Size Determination

The population of Nyaribari Chache Sub-County was 166,908 (KNBS, 2019b). Sample size was determined using (Fisher et al 1998) as cited in (Mugenda, 2003). The following formula was used for sample size calculations:

$$n = \frac{z^2 pq}{d^2}$$

Where,

n = the desired sample size (if the target population is > 10,000).

Z = is the standard normal deviate at the required confidence level.

p = is the proportion in the target population estimated to have characteristics being studied.

q = 1-p = 0.5

d = the level of statistical significance set = 0.05

Z = Assuming 95% confidence interval Z = 1.96

p = The proportion in the target population is being assumed to be 50% since the current number of women of reproductive age is not accurately known p = 0.5

$n = 1.96^2 (0.5) (0.5)/0.05^2$ = 384.16 = **384**

10% To take care of non-responders, 10% of 384 for non-responders wasincluded (i.e 38+384=422) thus giving a total N=422.

3.5 Sampling Method

3.5.1 Questionnaire Administration

Simple random sampling was used to identify participants for individual interview.; Numbers representing each respondent was placed on chips after which the chips were placed in a container thoroughly mixed and the field assistant blindly select chips from the container. Every number 1 from the container participated in the study. In case the targeted respondent didn't consent, the next one who picked number one and willing to participate would continue with the interview. This process was repeated until the required sample size was achieved.

3.6 Inclusion and Exclusion Criteria

3.6.1 Inclusion Criteria

The study included

1. Women of reproductive age (15-49yrs)
2. Who reside in Nyaribari Chache Sub County
3. Health workers in Nyaribari Chache health facilities

3.6.2 Exclusion Criteria

The study excluded

1. Those unwilling to give consent to participate in the study

3.7 Data Collection Tools

3.7.1 Questionnaire

Questionnaires were administered to 422 women of reproductive age seeking reproductive health services at the antenatal, postnatal and outpatient clinics within the study area. Information collected was entered into pre-coded questionnaires (Appendix 2&3).

3.7.2 Semi- Structured Interview Schedule

A semi-structured interview guide was used to get responses from facility in charges from 8 health workers who were namely the sub county pharmacist in charge of commodities, sub Sub-County county reproductive health coordinator, two health facility in charges and four nurses offering family planning services (Appendix 4)

3.7.3 Key Informant Interviews

Key informant interviews were conducted using a semi-structured interview guides with nurses at FP clinics, Sub-County reproductive health coordinator and sub county pharmacist. This helped verify information collected from the women of reproductive age (Appendix 4).

3.8 Reliability and Validity

3.8.1 Validity of Data Collection Tools

Research assistants were trained on study tools for two days, the questionnaire was sent to experts to validate the content before use and data collection tools were pretested at Keumbu Hospital which had the highest catchment population, this area was not included in the study.

3.8.2 Reliability of Data Collection Tools

To test for reliability, Cronbach's alpha (α) was computed by relating the score for each of the scale item with the total score for each item using the data collected during pretesting. To ensure reliability, data collected was checked for completeness, accuracy and coded for analysis in Statistical Package for Social Science (SPSS). The results of analysis showed that, it had a Cronbach's alpha of 0.79. This was based on A reliability data collection tool that should have Cronbach's alpha (α) of at least 0.7 to 0.9.

3.9. Pre-testing of Tools

The data collection tools were pre-tested among 38 WRA (10% of 384) residing in Nyaribari Chache Sub-County attending maternal and child health clinic, reproductive health clinic and the outpatient clinic in Keumbu Hospital. These datasets generated from pre-testing were not used in the final analyses.

3.10. Data Management, Analysis and Presentation

The collected data was in the custody of the researcher who ensured privacy and confidentiality of the information given by the respondents. Data cleaning was done upon completion of data entry and any inconsistencies noted were resolved by re-examining the questionnaires. Quality control was observed through verification of questionnaires for completion immediately after each participant handed in the questionnaires.

Quantitative data analysis was done by entering data in SPSS version 22.0. To test the association between the dependent and independent variables, chi-square test was used and statistical significance assessed at $p<0.05$. Logistic regression analysis was used to determine the odds ratio **of** factors that influenced uptake of long-term family planning methods. The independent variables were knowledge-related factors, socio cultural factors and facility-related factors while the dependent variable was uptake of long-term family planning methods. Logistic regression was used to determine how knowledge related factors, socio cultural factors influenced the uptake of long-term FP methods as well as to determine how facility-related factors influence the uptake of the long-term family planning methods, data was presented in tables.

For qualitative data, analysis commenced with verbatim transcription of audio recordings and review of transcripts with hand-written notes to ensure completeness of information and emerging issues in the discussion were documented. The themes that emerged were i). Commodity supply, ii) Staff training iii) Infrastructure iv) Community education and v) Funds allocation.

3.11 Ethical Considerations

Scientific approval was obtained from Maseno University, School of Graduate Studies. Ethical approval was obtained from the Maseno University Scientific and Ethical Review Committee (Appendix 5). Permission was sought from the Sub- County Medical officer of Health and research in-charge in Nyaribari Chache Sub-County and Kisii County. The purpose of the study was explained to the participants by the principal researcher and the research assistants before consent was signed to participate in the study (Appendix 6&7).

Confidentially was assured to participants and information gathered was not shared other than for the purpose of this study. Study forms were anonymized and stored in a lockable cabinet, only the principal researcher had accessed the privy to the link log. The data was stored in a password-protected computer and the records are to be destroyed after two years. Access to

data was limited to the principal researcher. There was no compensation for participating in the study.

3.11.1 Informed Consent

All participants underwent a standard informed consent procedure consistent with international recommendations from Council for International Organizations of Medical Sciences (CIOMS) in collaboration with the World Health Organization (Appendix 6&7).

Informed consent was obtained on a one-on-one basis. At recruitment, each potential participant who can read was asked to study the informed consent form and to ask any questions or express any concerns that she may have. After all questions or concerns were addressed and the investigator was sure that the participant understood purpose of the study and her involvement, the participant was asked to sign the consent form, signifying her voluntary acceptance to participate. In the case of illiterate participants, the consent form written in the local language was read to her and she was asked to give a thumbprint signifying her consent to participate. Prospective participants were told that refusal to participate in the study would not result in the loss of any health or other benefits from the health facility. They were also be told of their rights to withdraw from the study at any point of the interview. The informed consent was translated into Ekegusii describing the purpose of the study, the procedures to be followed, and the possible benefits and risks of participation. The importance of maintaining confidentiality was emphasized to the entire research assistants involved in the study. There was limited access to participant information within the study and the appropriate designee.

3.11.2 Risk/Benefit Information

While the study did not have direct control over information disclosed by participants, all attempts were made to protect each person's privacy. The participant may have had the following risks; be uncomfortable while answering questions in regard to involvement of partner in family planning decisions.

3.11.3Potential Study Biases

The research may have volunteer bias, where the response may have been greater in subjects who have a higher knowledge, attitudes and practices compared to those with lower knowledge, attitudes and practices. To minimize non-response, the questionnaire was made anonymous, and the consent form was completed and collected before the questionnaire is handed to the participants.

There was likelihood to recall bias as respondents had to recall past experiences to answer the questions in the questionnaire. To reduce the errors introduced by both types of bias, random sampling was used and the sample size was increased. It was difficult for the researcher to validate whether the participants used/ not used family planning in the past or present, some participants may give desirable but false information thus leading to reporting bias.

CHAPTER FOUR
RESULTS

4.1 Introduction

This chapter presents the findings and results of the study in the order of the research objectives. It begins by analyzing the demographic characteristics of the sample and then investigates how the sample understands the factors influencing uptake of long-term family planning methods among women of reproductive age. The results are based on a response rate of 95% (n=406).

4.2 Questionnaire Response Rate

The questionnaire response rate for this study was 95% as shown on Table 4.1.

Table 4.1 Questionnaire Response Rate

Category	Frequency	Percentage
Returned	406	96
Not returned	16	4
Total	**422**	**100**

This table shows a total of 406 (96%) of the respondents responded to the interview while only 16 (4%) did not respond. According to Mugenda and Mugenda (1999), a response rate of at least 70% is scientifically acceptable. This data was collected in 2019 over a period three months, since this was a health-related survey involving questions of a personal nature, the 16 questionnaires not returned were those from respondents who opted not to participate in the study.

4.3 Demographic Characteristics of the Respondents

4.3.1 Socio – Demographic Characteristics of Study Participants

Socio – demographic characteristics of study participants, grouped into two categories: non-use of LARC (n=294) and use of LARC (n=112) are presented in Table 4.2. Women who used LARC were significantly younger than those who did not use LARC (P=0.017). The distribution of the marital status was comparable across the study groups with married women showing the greatest frequency in both study groups followed by those who are single, widowed, and divorced (P=0.242) (Table 4.2).

4.3.2 Distribution of Knowledge- Related Factors

The proportion of women who have heard about LARC differed significantly between the study groups with women who have heard about LARC showing a higher frequency in the use of LARC (P=0.001). In addition, proportion of women whose partners attended school differed significantly across the study groups with the women whose partners attended school being higher in both study groups (P=0.034). The distribution of the education level of the participants and whether their partner attended school was comparable across the study groups (P=0.283) (Table 4.2).

4.3.3 Distribution of Socio – Cultural Factors

The number of living children differed significantly between women who used LARC and those who did not (P=0.041). The main occupation of the study participants, income level and the participants interaction with women groups also differed significantly between the study groups (P=0.001, P<0.001 and P=0.001, respectively). The sex of child/children, religion, social interactions with friends and relatives, who chooses family planning method, decision maker, and role of partner were all comparable between the study groups and were not significant (P=0.069, P=0.722, P=0.737, P=0.811, P=0.140, P=0.113, P=0.562 respectively) (Table 4.2).

4.3.4 Distribution of Facility-Related Factors

The type of facility attended by the study participants differed between the study groups (P=0.020) while the rating of family planning services, health care providers' attitude, cost of family planning services, duration to the health facility and waiting time (P=0.492, P=0.255, P=0.063, P=0.486 and 0.326 respectively) (Table 4.2).

Table 4.2: Socio – demographic characteristics of study participants

Characteristics	Total	Use of LARC		*P*-value
		No	Yes	
	406	294	112	
Age, Years	406	26(10)	27(10)	**0.017**[a]
Marital Status [n, (%)]	405			
Married	292	205(69.7%)	87(78.4%)	0.242[b]
Single	81	63(21.4%)	18(16.2%)	
Widowed	20	15(5.1%)	5(4.5%)	
Divorced	12	11(3.7%)	1(0.9%)	
Education level	395			
Primary level	120	89(31.2%)	31(28.2%)	0.283[b]
Secondary level	164	121(42.5%)	43(39.1%)	
College level	94	61(21.4%)	33(30.0%)	
No education	17	14(4.9%)	3(2.7%)	
Heard of LARC	405			
No	94	81(27.6%)	13(11.6%)	**0.001**[b]
Yes	311	212(72.4%)	99(88.4%)	
Partner attended school	406			
No	61	51(17.3%)	10(8.9%)	0.034[b]
Yes	345	243(82.7%)	102(91.1%)	
No. of living children	406			
1	109	75(25.5%)	34(30.4%)	0.041[b]
2	108	79(26.9%)	29(25.9%)	
3	84	54(18.4%)	30(26.8%)	
4 and above	105	86(29.3%)	19(17.0%)	
Sex of child/children	336			
Male	78	50(21.2%)	28(28.0%)	0.069[b]
Female	103	81(34.3%)	22(22.0%)	
Both	155	105(44.5%)	50(50.0%)	
Religion	400			0.722[b]
Catholic	193	136(47.1%)	57(51.4%)	
Protestant	190	140(48.4%)	50(45.0%)	
Muslim	17	13(4.5%)	4(3.6%)	
Main occupation	388			
Salaried worker	101	59(21.2%)	42(38.2%)	**0.001**[b]
Housewife	80	57(20.5%)	23(20.9%)	
Self-employed	84	58(20.9%)	26(23.6%)	
Casual labourer	42	37(13.3%)	5(4.5%)	
Peasant farmer	81	67(24.1%)	14(12.7%)	
Income level	382			**<0.001**[b]
Below 10,000	168	138(50.9%)	30(27.0%)	
Above 10,000	214	133(49.1%)	81(73.0%)	
Friend interactions	381			0.737[b]
No	106	77(28.3%)	29(26.6%)	
Yes	275	195(71.7%)	80(73.4%)	
Relatives' interaction	381			0.811[b]
No	225	159(58.7%)	66(60.0%)	
Yes	156	112(41.3%)	44(40.0%)	
Interaction with women groups	380			
No	293	220(81.5%)	73(66.4%)	**0.001**[b]
Yes	87	50(18.5%)	37(33.6%)	
Who chooses FP	330			
Yourself	174	127(57.0)	47(43.9)	0.140[b]
Yourself and partner	74	46(33.2%)	(43.0)	
Health care provider	30	17(7.6%)	13(12.1%)	
Friend	4	3(1.3%)	1(0.9%)	

Others	2	2(0.9%)	0(0.0%)	
Decision maker	376			0.113[b]
Husband	65	51(19.0%)	14(12.8%)	
Wife	62	49(18.3%)	13(11.9%)	
Both husband and wife	223	149(55.6%)	74(67.9%)	
Mother-in-Law	5	5(1.9%)	0(0.0%)	
Others	21	13(4.9%)	8(7.3%)	
Role of partner	313			0.562[b]
Provide approval	130	86(40.4%)	44(44.0%)	
Provide finances	79	52(24.4%)	27(27.0%)	
Accompany to health centre	40	31(14.6%)	9.0%)	
Discuss fp choice	64	44(20.7%)	20(20.0%)	
Health Facility	350			**0.020[b]**
Non Govt facility	36	31(13.0%)	5(4.7%)	
Government	308	207(87.0%)	101(95.3%)	
Rate FP services	272			
Poor	2	1(0.5%)	1(1.2%)	0.492[b]
Fair	44	34(17.7%)	10(12.5%)	
Good	135	97(50.5%)	38(47.5%)	
Excellent	91	60(31.2%)	31(38.8%)	
Cost FP services	272			0.063[b]
Free	219	158(82.3%)	61(76.2%)	
Less than 100	29	22(11.5%)	7(8.8%)	
More than 100	24	12(6.2%)	12(15.0%)	
Health care providers	350			0.255[b]
Unfriendly	6	4(1.7%)	2(1.8%)	
Friendly	188	135(56.7%)	53(47.3%)	
Very friendly	156	99(41.6%)	57(50.9%)	
Duration to HF	355			0.486[b]
Less than 1 hour	317	216(88.5%)	101(91.0%)	
More than 1 hour	38	28(11.5%)	10(9.0%)	
Waiting time	345			0.326[b]
30 min	275	192(81.4%)	83(76.1%)	
1 hour	58	35(14.8%)	23(21.1%)	
More than 1 hour	12	9(3.8%)	3(2.2%)	

Data is presented as median (interquartile range, IQR) and [n (%)].[a] Mann-Whitney U test. [b] Statistical significance was determined by Chi-square analysis.

4.4 Association between Knowledge Related Factors and Uptake of Long-Term Family Planning Methods in Women of Reproductive Age in Nyaribari Chache Sub-County, Kisii County, Kenya

A logistic regression was conducted to assess the knowledge related factors associated with uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya controlling for the potential covariates, age and marital status. The analysis revealed that knowledge of LARC significantly increased the usage of LARC among women of reproductive age (OR=2.871, 95% CI=1.512-5.451, *P*=0.001). There was no significant association between education level and uptake of long-term family planning methods, relative to no education (Primary level, *P*=0.395; Secondary level, *P*=0.353; College level and *P*=0.122). Similarly, whether a partner attended school was

not associated with the uptake of long-term family planning methods in women of reproductive age (*P*=0.110) (Table 4.3).

Table 4.3: Knowledge related factors associated with uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya.

Knowledge related factors	Use of LARC			
	n	**OR**	**95% CI**	***P***
Education level	395			
No education	17	Ref		
Primary level	120	1.809	0.462-7.087	0.395
Secondary level	164	1.902	0.489-7.392	0.353
College level	94	2.970	0.748-11.794	0.122
Heard of LARC	405			
No	94	Ref		
Yes	311	2.871	1.512-5.451	**0.001**
Partner attended school	406			
No	61	Ref		
Yes	345	1.920	0.862-4.275	0.110

Data are presented as odds ratio (OR) with 95% confidence intervals (CI). Logistic regression analysis was used to determine the odds ratio (OR) and 95% Confidence Interval (CI). Statistical significance was set at *P*≤0.05 and was indicated in bold.

4.5 Socio – Cultural Factors Associated with Uptake of Long-Term Family Planning Methods in Women of Reproductive Age in Nyaribari Chache Sub-County, Kisii County, Kenya

A logistic regression was performed to assess the knowledge related factors associated with uptake of long term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya controlling for the potential covariates, age and marital status revealed that relative to having male children, women with female children had reduced uptake of long term family planning methods (OR=0.497, 95% CI=0.255-0.970, *P*=0.041) while having both male and female children was not significantly associated with the uptake of long term family planning methods in women of reproductive age. Additionally, women with 4 and above living children had reduced uptake of long-term family planning methods relative to those having one living child (OR=0.313, 95% CI=0.151-0.650, *P*=0.002). Study participants whose main occupation was casual labor and peasant farming showed decreased uptake of long-term family planning methods relative to salaried workers (OR=0.184, 95% CI=0.065-0.521, *P*=0.001 and OR=0.305, 95% CI=0.150-0.620, *P*=0.001, respectively). Housewives and self-employed women showed no significant association with uptake of long-term family planning methods (*P*=0.119 and *P*=0.232, respectively). Furthermore, women whose income level was above 10,000 Kenyan Shillings had increased

uptake of long-term family planning methods (OR=2.710, 95% CI=1.645-4.464, *P*=<0.001) compared to those who earned below 10,000.

Study participants who socially interacted with women groups had an increased uptake of long-term family planning methods relative to those who did not (OR=2.021, 95% CI=1.209-3.378, P=0.007). However, religion, social interaction with friends and relatives, who chooses family planning method, the decision maker and the role of partner were not significantly associated with the uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya (Table 4.4).

Table 4.4: Socio – cultural factors associated with uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya.

Socio – cultural factors	**Use of LARC**			
	n	**OR**	**95% CI**	***P***
Sex of child/children	336			
Male	78	Ref		
Female	103	0.497	0.255-0.970	**0.041**
Both	155	0.794	0.433-1.454	0.455
No. of living children	406			
1	109	Ref		
2	108	0.662	0.352-1.246	0.201
3	84	0.827	0.418-1.639	0.587
4 and above	105	0.313	0.151-0.650	**0.002**
Religion	400			
Catholic	193	Ref		
Protestant	190	0.851	0.540-1.342	0.488
Muslim	17	0.814	0.248-2.668	0.733
Main occupation	388			
Salaried worker	101	Ref		
Housewife	80	0.599	0.315-1.141	0.119
Self-employed	84	0.684	0.367-1.274	0.232
Casual labourer	42	0.184	0.065-0.521	**0.001**
Peasant farmer	81	0.305	0.150-0.620	**0.001**
Income level	382			
Below 10,000	168	Ref		
Above 10,000	214	2.710	1.645-4.464	**<0.001**
Friend interactions	381			
No	106	Ref		
Yes	275	1.218	0.729-2.036	0.451
Relatives' interaction	381			
No	225	Ref		
Yes	156	0.951	0.600-1.509	0.833
Interaction with women groups	380			
No	293			
Yes	87	2.021	1.209-3.378	**0.007**
Who chooses FP	330			
Yourself	174	Ref		
Yourself and partner	120	1.661	0.984-2.804	**0.057**
Health care provider	30	1.966	0.873-4.430	0.103
Friend	4	0.984	0.099-9.791	0.989
Others	2	x	x	x

Decision maker	376			
Husband	65	Ref		
Wife	62	0.898	0.362-2.225	0.816
Both husband and wife	223	1.681	0.868-3.257	0.124
Mother-in-Law	5	0.999	x	x
Others	21	2.781	0.807-9.586	0.105
Role of partner	313			
Provide approval	130	Ref		
Provide finances	79	0.929	0.504-1.712	0.814
Accompany to health center	40	0.448	0.187-1.071	0.071
Discuss FP choice	64	0.865	0.449-1.668	0.665

Logistic regression analysis was used to determine the odds ratio (OR) and 95% Confidence Interval (CI). X shows the sample size was too small to generate any meaningful association. Statistical significance was set at *P*≤0.05 and was indicated in bold.

4.6 Facility-Related Factors Associated with the Uptake of Long-Term Family Planning Methods in women of Reproductive Age in Nyaribari Chache Sub-County, Kisii County, Kenya

Logistic regression controlling for covariates age and marital status revealed that relative to non-government health facilities, attending a government health facility was significantly associated with increased uptake of long-term family planning methods in women of reproductive age (OR=3.084, 95% CI=1.155-8.235, *P*=0.025). However, the quality of family planning services, the cost of family planning services, attitude of healthcare providers, duration to the health facility and waiting time were not significantly associated with the uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya (Table 4.5).

Table 4.5: Facility-related factors associated with the uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya.

Health facility related factors	**Use of LARC**			
	n	**OR**	**95% CI**	***P***
Health Facility	344			
Non Govt facility	36	Ref		
Government	308	3.084	1.155-8.235	**0.025**
Rate FP services	272			
Poor	2	Ref		
Fair	44	0.310	0.017-5.624	0.428
Good	135	0.448	0.026-7.671	0.580
Excellent	91	0.568	0.033-9.799	0.697
Cost of family planning services	272			
Free	219	Ref		
Less than 100	29	0.795	0.319-1.982	0.623
More than 100	24	2.366	0.993-5.642	**0.053**
Health care providers attitude	350			
Unfriendly	6	Ref		
Friendly	188	0.771	0.136-4.388	0.770
Very friendly	156	1.115	0.196-6.332	0.902
Duration to HF	355			
Less than 1 hour	317	Ref		

More than 1 hour	38	0.722	0.334-1.561	0.407
Waiting time	345			
30 min	275	Ref		
1 hour	58	1.589	0.868-2.906	0.133
More than 1 hour	12	0.699	0.182-2.690	0.602

Logistic regression analysis was used to determine the odds ratio (OR) and 95% Confidence Interval (CI). Statistical significance was set at $P \leq 0.05$ and was indicated in bold.

4.7 Key Informant Interview

Family planning services are offered by nurses who have undergone reproductive health Iin-service training, the Sub-County reproductive health coordinator is in charge of those services in the sub county.

When asked how should FP services be provided in the facilities the Sub-County reproductive health coordinator answered "family planning services should be offered within the reproductive health department but also integrated in other special departments within the facilities. The room should have privacy for provision of the family planning services, for the youths this service should be offered within the youth friendly departments to encourage more youths to be in charge of their reproductive health".

Qualitative data from healthcare service providers on the challenges they face that influence uptake of long-term family planning services include: gaps in knowledge and skills especially with the newer long-term methods (Implanon), lack of funds to carry out refresher trainings, stock-outs of the commodities especially implants, lack of integration of services with the special clinics. The infrastructure at the facility has no space for offering family planning services, there are no equipment to offer long term family planning methods (no insertion/removal kits), high workload leading to long queues and staff burn-out, misconception and myths about the long term FP methods in the community; the women do not like the long term FP methods especially the IUCD due to beliefs on negative impact on health, they report uncomfortable procedure of IUCD insertion led to many women of reproductive health shying away from using the method.

When asked about support supervision from the sub county health management team 6 out of 8 facilities responded that they have gotten support once a year. On the other side the reproductive health coordinator mention that they do not have funds to facilitate them carry out visits to the facilities.

When asked the source of the family planning commodities, they reported directly receive from KEMSA and the County pharmacist carried out redistribution between facilities, the

nearby county and sub-county hospitals, borrowing from nearby hospitals, Non-governmental Organizations (NGOs) like Marie stopes and Dawuye.

When asked; "Do health facilities experience stock out of the commodities?" 7 out of the 8 respondents reported they experience stock-out quite often. They said there is usually a long lead time (time taken between ordering and receiving). One service provider from Nyaribari Chache sub-county said,

"Frequent stock outs are experienced with Implants and depo Provera being the most affected".

When asked how frequent the stock-outs are, the health providers said:

"We experience almost every three months; we have some family planning commodities that have not been supplied in the past one year (emergency pills).

Another responded that Implanon has not been supplied in the last five months,

From another facility the provider said that they had very frequent for example "we have not had Implants and depo Provera for the last two months".

Another one responded that they had very frequent "for example we have not had Implants and depo Provera for the last three months, we have been experiencing stock outs of IUCDs for the last one month but we borrowed from the dispensaries".

The respondents were asked what needs to be done in order to render quality services at the health facilities.

Enough staff with adequate training

Their responses were: employment of more staff to reduce waiting time for clients, capacity building of the health care providers especially on the long-term family planning methods and how to correctly counsel WRA on the effectiveness of methods.

Commodity supply

Constant supply of commodities, supply of the basic equipment for insertion/removal of the methods.

Infrastructure

Improvement of infrastructure in the facilities; so that there is a room with adequate privacy to offer the long-term family planning methods,

Community education and communication

Carry out community sensitization and advocacy using appropriate channels to pass information regarding benefits of long-term family planning methods.

Funds allocation

More support from the County especially in providing funds to carry out support supervision to ensure quality services are provided. Avail funds to carry out regular outreach services in order to take services nearer to the community. The other key intervention was to lobby for increase of resource allocation family planning services as a whole in the health funds allocation at the county assembly.

CHAPTER FIVE
DISCUSSION

5.1 Introduction

This chapter presents the summary of findings of the research and discusses the results of factors influencing long-term family planning methods among women of reproductive age in Kenya. Long-term family planning methods are the most effective contraceptives (Kungu et al., 2020), increased uptake of long-term FP has drastically reduced unintended pregnancies and abortions (Shoupe, 2016a).

5.2 Knowledge related factors associated with uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya

In the current study, knowledge about LARC had a two-fold increase in the use of LARC in women of reproductive age indicative of the fact that this knowledge corresponded with increased LARC. These results are in line with (KDHS, 2014b) results that found out knowledge of FP methods being important for making an informed decision to initiate FP use. A previous study has shown that women do not use FP methods because of poor understanding of their risk for pregnancy, health concerns about potential side effects (Darroch, 2013) suggesting that in addition to knowledge about FP methods, knowledge about their benefits and potential side effects are important in promoting the uptake of FP methods. However, high knowledge of FP methods did not correspond to high utilization of contraceptives in neighboring Ethiopia (Tilahun et al., 2013) and Uganda (Birabwa et al., 2021), other factors were cited to affect contraceptive uptake among those with good knowledge of FP methods. In Kenya, the knowledge of at least one FP method was virtually universal (98% among women), in which 98% of these women are more familiar with modern methods of contraception (KDHS, 2014a).

Proportion of women whose partners attended school differed significantly across the study groups with the women whose partners attended school being higher in both study groups however school attendance by a partner was not significantly associated with use of LARC. A study by (Akamike et al., 2020) found a positive association between the educational level of the husband and the use of contraceptive methods in Nigeria. This study did not find strong association between women's level of education and uptake of long-term FP methods; despite these findings, a woman's education has been demonstrated to influence positively the uptake of FP methods and a stronger predictor of method choice (Liu et al., 2020). In Sub-Saharan

Africa, a woman's attainment of education had an accelerating effect of contraceptive prevalence for uptake of modern methods, promoting fertility decline (Liu et al., 2020).

Male engagement activities in Kisii county have been associated with increased improved knowledge and uptake of family planning, spousal/partner accompaniment to facility care, and defeminization of social and gender roles, facilitating decisions on women and children's health as well as in improving spousal support for use of FP methods (Lusambili et al., 2021). Results of this study show that when a couple choose FP method together, the use of LARC marginally increased. The use of media and health workers, having proved to be reliable means of disseminating accurate information promoting the making informed decisions (Mwangi et al., 2016) can be emphasized to increase the male partner involvement in FP decisions.

In as much as the level of education was not significantly associated with LARC use, but knowledge about LARC was significantly associated with use of LARC seem to suggest that despite one's level of education acquisition of knowledge was sufficient to influence the use of LARC although more educated women have a broader knowledge, higher socio – economic status, and more likely to use LARC (Adedini et al., 2019). Exposure to FP messages is associated with high likelihood of use of contraceptives while non-use of contraceptives has been reported to be due to lack of knowledge (Ettarh & Kyobutungi, 2012) emphasizing the importance of knowledge on the uptake of FP methods.

5.3 Socio – Cultural Factors Associated with Uptake of Long-Term Family Planning Methods in Women of Reproductive Age in Nyaribari Chache Sub-County, Kisii County, Kenya

The use of contraceptives is associated with the number of children a woman has in Kenya, for example, 15% of currently married women with no living children, 61% of women with one or two children, 66% of women with three or four children and 52% of women with five or more children, use contraception (KDHS, 2014a). The current study revealed that having over 4 and children significantly reduced the uptake of LARC when compared to women who had between 1 and 3 children. This observation may not be because of the need to have a larger family since the average family size in Kisii County is 4 persons per household (KNBS, 2019b). Thus, a study should be performed to extend the findings of the current study and unveil why contraceptive use decreases when the number of children is 4 and above. In contrast, a previous study in Kenya revealed that the more children a woman has the more

likely she uses LARC (Kungu et al., 2020). The differences in the findings of the two studies may be attributed to difference in the study population in which the former study was performed in Kisii County while the latter study analyzed data nationally. Women with children who were females showed significantly reduced uptake of LARC. This may be as a result of the need to have a male child by couple hence the preference of a male child leads to the desire not to stop childbearing as previously documented in a study by (Hoq, 2020).

The main occupation of the women differed significantly between the study groups. Furthermore, women whose main occupation was casual laborer and peasant farming showed decreased uptake of long-term family planning methods relative to salaried workers. A study in Bangladesh found a higher contraceptive use among employed women (67%) (Islam et al., 2016). Similarly, a study in India showed that women who were likely to use LARC were in professional sectors relative to those who were not employed (McDougal et al., 2021). In Kenya, women in rural areas were 38% less likely to use LARC than their urban counterparts (Kungu et al., 2020). Additional analyses showed that the income level differed significantly between the study groups but was not significantly associated with the use of LARC.

Women who interacted with women groups also differed significantly between the study groups. In addition, study participants who socially interacted with women groups did have two-fold increased uptake of long-term family planning methods relative those who did not. In contrast, a study done in Pakistan documented that women were more likely to use FP services if their mother and mothers in law had discussed it with them as an option for their families (Sarfraz et al., 2023). It was noted that in Nepal and India programs that aimed at improving uptake of LARC methods held joint discussions with women groups comprising younger married women alongside other experienced women including mothers and mothers-in-law (Sarfraz et al., 2021). Apart from mass media being a source of FP information in Kenya, social interaction between women may provide a forum for women to discuss FP methods and thereby influencing their uptake of LARC.

Whereas Who chooses FP, Decision maker, Role of partner, were not significant determinants of LARC uptake, the husband's approval may influence a woman's use of contraceptives in many African customs (Mosha & Ruben, 2013). In Kenya, use of FP methods is enhanced when couples discuss it and come to a consensus. Moreover, the involvement of women and their partners enhances the acceptance, uptake, and continuation of a FP method (Balogun et al., 2016). Male engagement activities in Kisii county have been associated with increased

uptake of family planning methods, accompanying a partner to a healthcare facility, defeminization of social and gender roles, involvement in decision making and partner's support for use of FP methods (Lusambili et al., 2021). However, most FP initiatives have focused on women, overlooking male partners resulting in opposition to self or partner's FP use (Balogun et al., 2016). Twenty nine percent of partners, according to the KDHS report, believed that women who use family planning may become promiscuous (KDHS, 2014a). A study done in Kenya (Ontiri et al., 2019) noted that women opted for injectables due to interference and lack of support from their partners and this greatly hindered uptake of LARC. Women preferred use of short-term methods in particular injectables because they could be used discretely without partner interference (Tibaijuka et al., 2017).Involvement of both women and their partners promotes contraceptive acceptance, uptake and continuation and couple communication and thus, a key strategy for addressing about 17.5% of the unmet needs in FP in Kenya (KDHS, 2014a).

Religion has been shown to be a significant predictor of LARC use, for example, protestant and other Christian women were about 63% less likely to use LARC than those with no religion/other religion (Kungu et al., 2020). The results of the current study showed a decrease in the use of LARC by protestant and Muslim women relative to catholic, however not significantly. This observation may be a result of the fact that Kisii County is predominantly protestant with the majority of the Seventh Day Adventist faith more likely to adopt family planning method as contraceptive use is not a moral issue but a personal matter to be decided by an individual member who are taught family planning in church to enable them to space their children (Jalang'o et al., 2017). On the other hand, Islam is believed to allow the use of reversible contraceptive methods (Shabaik et al., 2019). Therefore, the non-significant decrease in the use of LARC by Protestants and Muslims may be due to other factors apart from religion.

LARC is under-utilized because of fears that are based on myths and misconceptions obtained from their social networks; these include: -contraception being associated with promiscuity and straying, side effects and adverse reactions thought to negatively affect fertility, weight gain and changes in the menstrual cycle (Ochako et al., 2015). These misconceptions can be addressed with the provision of comprehensive information and counseling on LARC.

5.4 Facility-related factors associated with the uptake of Long-Term Family Planning Methods in Women of Reproductive Age in Nyaribari Chache Sub-County, Kisii County, Kenya

Government health facilities remain the major provider of contraceptive methods in Kenya, 60% of women using modern contraceptive obtain their contraception from a government source (KDHS, 2014b). Within the public sector, 24% of users obtain their methods from government dispensaries, 20% from government hospitals, and 16% from government health centers, in contrast, 34% of women using modern contraceptive obtain their methods from the private medical sector, mainly from private hospitals/clinics 21% and pharmacies 10% (KDHS, 2014a). In the current study, the type of health attended by the study participants differed between the study groups and attending a government health facility was significantly associated with increased uptake of long-term family planning methods in women of reproductive age. A previous study revealed that women felt more confident about the technical medical quality and comprehensive counseling as part of contraceptive decision-support in public facilities than in private (Keesara et al., 2015). However, women in urban areas preferred private over public facilities due to convenience and timeliness of services while looking for contraceptive services (Keesara et al., 2015).

Physical access to a health facility in Kenya, has been cited as an important factor influencing the use of modern contraceptive i.e., women residing 5km or less from a health facility significantly used modern contraceptives more than those residing more than 5km from a health facility (Ettarh et al., 2012). However, in the current study, the duration of more than one hour to a health facility reduced the use of LARC but not significantly suggesting that access to a health facility is reduced and consequently access to FP services when a health facility is far away. A study conducted by (Khan et al., 2022) in Bangladesh found out that nearness of health facility to the clients and availability of LARC methods at the health facility was important, the further a person was from the health facility the less likely they would use LARC. Health care providers who were very friendly were associated with increased uptake of LARC though not significantly in the current study. High quality counseling has been associated with increased uptake of FP methods (Ontiri et al., 2021). In addition, in seeking FP services, women avoided health facilities disrespectful health care providers (Keesara et al., 2015).

The odds of contraceptive use were higher among Kenyan women who lived in areas with user-fee for contraceptive services (Asaolu et al., 2019). Concomitantly, the current study

revealed that health care facilities that charges more than 100ksh for family planning services was associated with increased uptake of LARC suggesting that the cost of contraceptives may not always be a barrier to their uptake. The current study infers that this observation may be as a result of user attitude in which things issued free are deemed of low quality. LARC methods have a high up-front cost but these costs are covered by a third party, making them affordable to users reducing the unmet needs of contraceptives by women of reproductive age by making them accessible and affordable (Shoupe, 2016b).

This study was institution based and therefore, it might not be possible to generalize the current findings to the entire reproductive-age female population in the district. In addition, Quantitative nature of the study hinders in-depth exploration of women's perception and barriers for LARCs use. Researchers should conduct further studies on assessing the quality of service given and additional factors affecting the utilization. Including in-depth or focus group interviews enhance their understanding of women's perception and barriers for LARCs use.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Summary of Findings

Socio – demographic characteristics of study participants showed that Women who used LARC were significantly younger than those who did not use LARC. The proportion of women who have heard about LARC differed significantly between the study groups with women who have heard about LARC showing a higher frequency in the use of LARC. The proportion of women whose partners attended school differed significantly across the study groups with the women whose partners attended school being higher in both study groups.

The number of living children of differed significantly between women who used LARC and those who did not, the main occupation of the study participants, income level and the participants interaction with women groups also differed significantly between the study groups.

The type of health facility attended by the study participants differed between the study groups.

A logistic regression was conducted to assess the knowledge related factors, socio – cultural and facility-related factors associated with uptake of long-term family planning methods in women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya controlling for the potential covariates, age and marital status revealed that knowledge of LARC significantly increased the usage of LARC among women of reproductive.

Relative to having male children, women with female children had reduced uptake of long-term family planning methods, while having both male and female children was not significantly associated with the uptake of long-term family planning methods in women of reproductive age. Additionally, women with 4 and above living children had reduced uptake of long-term family planning methods relative to those having one living child. Study participants whose main occupation was casual labor and peasant farming showed decreased uptake of long-term family planning methods relative to salaried workers Women who socially interacted with women groups had an increased uptake of long-term family planning methods relative to those who did not

Attending a government health facility was significantly associated with increased uptake of long-term family planning methods in women of reproductive age.

6.2 Conclusions

i. Knowledge about LARC was associated with increased use of LARC by women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya.

ii. Having an income of above Ksh.10,000, and interacting with women groups was associated with increased LARC use among women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya.

iii. Being a casual labourers and peasant farmers, having female children only and having 4 and above living children was associated with decreased LARC use among women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya.

iv. Attending a government health facility was associated with increased LARC use among women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya.

6.3 Recommendations from current Study

In light of the findings of this study, and the fact that FP is imperative for achieving the SDGs and reducing maternal mortality and promoting maternal health, the current study recommends:

i. Intensify education about LARC and FP in general to WRA as it is key in increasing uptake of LARC.

ii. Increase dissemination of LARC information in channels like women groups as well involving men in LARC education as the study revealed its key towards increased uptake of LARC.

iii. Private health facilities should be supported more by Kisii County department of health to offer LARC methods while strengthening the initiatives already rolled out in government health facilities to increase the uptake of LARC in WRA.

6.4 Recommendations for Future Studies

The current study recommends that:

i. A similar study be replicated in other counties to identify factors influencing the uptake of LARC to inform FP initiatives by the government in a bid to promote maternal health and achieve the SDGs.

ii. Since current study revealed that having more than 4 children reduced significantly the use of LARC among women, a study should be performed to determine why contraceptive use decreases when the number of children was above 4 among women in Nyaribari Chache Sub- County, Kisii County, Kenya.

iii. Future studies to determine gaps in provision of LARC in private facilities so as to increase its uptake among WRA in Nyaribari Chache Sub- County, Kisii County, Kenya.

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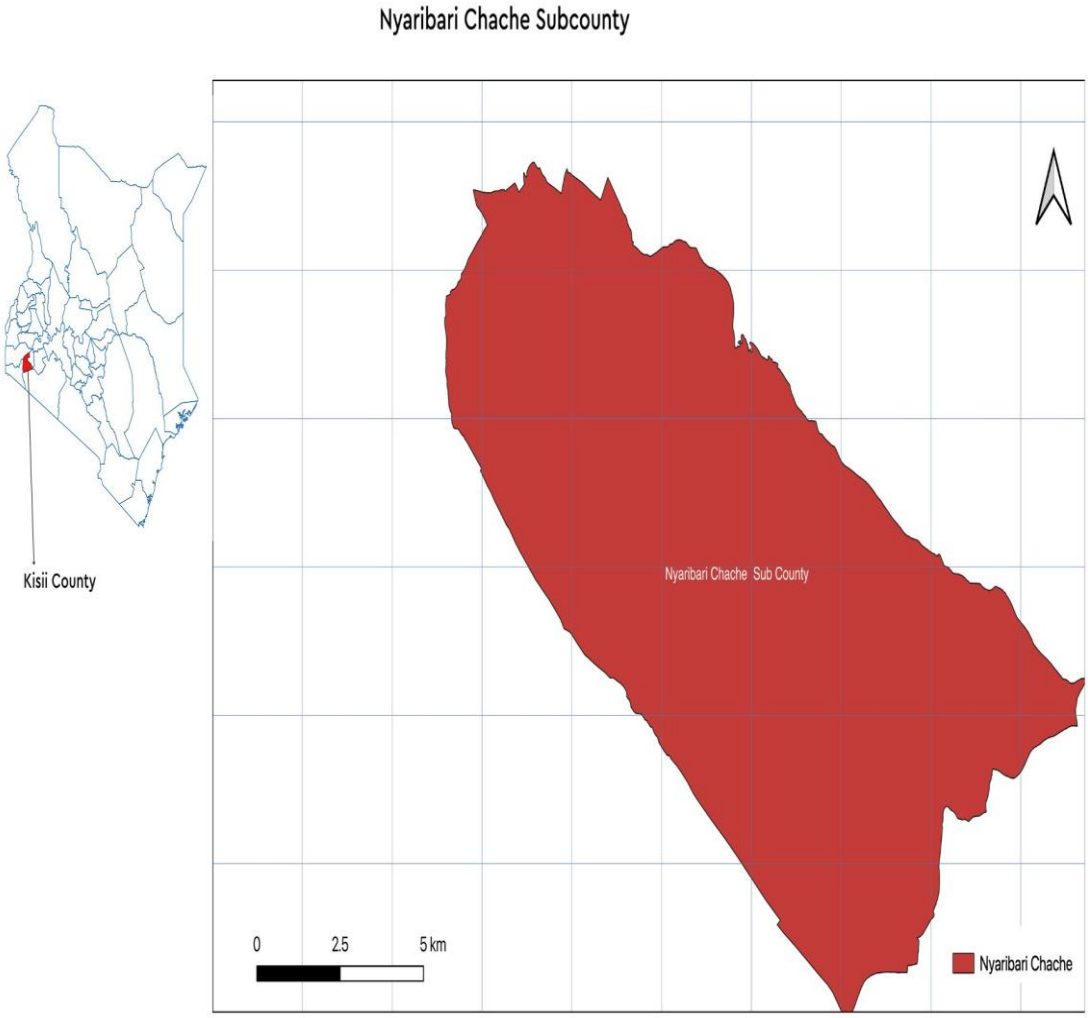
APPENDICES

Appendix 1: Map of Nyaribari Chache Sub County



Appendix 2: Questionnaire for women of reproductive age (15yrs-49yrs)
Instructions;

This questionnaire consists of five parts. Please attempt all questions

Please do not write your name on the questionnaires.

Tick (√) the most appropriate response where applicable.

Questionnaire No---------- Date----------

NO	QUESTION	RESPONSE
SECTION A: Demographic information		
1.	What is your age	
2.	Marital status	Married Single Widow Divorced
3.	How many pregnancies have you had?	One Two Three Four More than four
4.	How many living children of your own do you have?	One Two Three Four More than four
5.	What is the sex of your child/children	
6.	Education level	Completed Primary level Completed Secondary level Post-secondary level No education Others (specify)
7.	Religion	Catholic Protestant Muslim Others (Specify)
SECTION B: Socio – economic factors		
8	What is your primary (main) occupation?	Salaried worker Housewife Self employed Casual labourer Peasant farming
9.	Did your partner attend school?	Yes No
10.	If yes what is the highest level of education attained	Completed Primary level Completed Secondary level Post-secondary level No education Others (specify)
11.	What is your partner's primary	Salaried worker

	(main) occupation?	Peasant farming Self employed Casual labourer Others (specify)
12.	What is your family's average monthly income	Below KES 10,000 per month Between KES 10,000 and 19,999per month Between KES 20,000 and 30,000 per month Over KES 30,000 per month
SECTION C: knowledge on long term FP methods		
13.	Have you heard about family planning methods?	Yes No
14.	If yes, describe the methods you have heard about	Oral contraceptive pills Injectables Intrauterine contraceptive device Implants Lactational amenorrhoea method Natural family planning Tubal ligation Vasectomy Condom Others (specify)
15.	Have you ever used/using any FP method?	Yes No
16.	If yes which FP method	Oral contraceptive pills Injectables Intrauterine contraceptive device Implants Lactational amenorrhoea method Natural family planning Tubal ligation Vasectomy Condom Others (specify)
17.	How long have you used the above method?	
18.	Who choose the family planning method that you're using?	Yourself Yourself and partner Health care provider Friend Mother in law
19.	What is the reason why you're not using any FP method? (If no in question 16)	Would like to get pregnant I am currently pregnant My partner refuses me Health concerns My church prohibits me from using Contraceptives are costly Family planning services are lacking at the health facilities Other reasons (specify)

20.	What was the source of FP information? (if yes in question 16)	Health care provider Friend Husband Mother in law Media Others (specify)
21.	Where did you get FP services? (If yes in question 16)	Government health facilities Private health facilities Others (specify)
22.	How do you rate family planning services offered at the family planning clinic?	Poor Fair Good Excellent
23.	Have you ever seen any poster/education charts on family planning?	Yes No
24.	What are the advantages of using implant or intrauterine contraceptive device	Convinient to user Affordable Highly effective Safe to use Reduced number of visits to the health facility
25.	What reasons would hinder you from using implant or intrauterine contraceptive device?	Health concerns Not living with partner Would like to get pregnant I am currently pregnant My partner refuses me My church prohibits me from using Contraceptives are costly Family planning services are lacking at the health facilities Other reasons (specify)
SECTION D: Socio – cultural factors		
26.	Who is the decision maker regarding health in the household	Husband Wife Both husband and wife Mother in law Others (specify)
27.	Who do you discuss with family planning matters?	Partner Friend Mother in-law Health care provider Others (specify)
28.	What role does your partner play in family planning issues in your household	Providing approval for you to use FP Providing finances Accompanying you to the health facility to get FP services Having time to discuss appropriate family planning method for you

		Others (specify)
29.	What are your social networks?	Friends Relatives Women groups Others (specify)
30.	What cultural beliefs and practices influence family planning in your community?	
31.	What are the taboos related to family planning use in your community?	
32.	Do you have a preferred sex of a baby in your community?	Yes No Do not know
33.	If yes, explain	
SECTION E: Facility factors		
34.	Where do you get family planning services?	Government health facility Private health facility Others (specify)
35.	How long does it take you to get to the health facility for family planning service?	Less than 30 minutes 30 minutes to 1 hour 1 hour to 2hours Over 2 hours
36.	How long did it take you to be offered the family planning services?	30 Minutes 1 Hour Over 2 Hours
37.	Did you get the family planning method of your choice?	Yes No
38.	If no, explain	Desired method out of stock The cost was too high Health care provider was not available to offer. Health care provider was too busy There was no room to offer the service Waiting time too long Other reasons (specify)
39.	How much did you pay for the family planning services offered at the health facility?	Free Less than KES 50 KES 51 to KES 100 KES 101 to KES 200 More than KES 200
40.	How would you rate the family planning services you received at the health facility?	Poor Fair Good Excellent
41.	How would you rate the health care provider offering family planning services to you?	Unfriendly Friendly Very friendly

Appendix 3: Questionnaire in Ekegusii

SEHEMU A: RIGANO RYA MWANYABANTO

Ogoire ego ame?

Ogochaka ago ritari?

- Nomuye
- Nomunyanchi
- Monamura
- Mononyong'ere

Irioko rire banto bogo iraire?

- Imbari
- Ine
- Isero
- Inya
- Inkane kera

Abanto barorire n'abando oborire?

- Imbari
- Ine
- Isero
- Inya
- Inkane kera

Inde ni ogotara obanto obore?

Amaburi aka mabure okorenda?

- Amaburi a riamba
- Amaburi a risese
- Okorende a riokerero
- Bure tanda
- Ena (tera)

Risangio rianko?

- Katoriki

- Aba protestanti
- Abamuislamu
- Ena (terera)

SEHEMU B: MABEA AGO GOKORERA

Oko ni gokorera gotari mbo oyo?

- Omonto oyo osa babesa
- Omobuye oyo okorora nyumba
- Omonto oyo osa okorego nakiye
- Omonto oyo osa mabesa kororera
- Omonto oyo osa obosokia korora

Omorwaki ore omworia agetegeteria okoria?

- Eego
- Eeya

Nakiye eego, ekiamo kere kisomo yaekire ogaetegeteria?

- Kisomo kerorerire abanto ba riamba
- Kisomo kerorerire abanto ba risese
- Kisomo kirorerire a riokerero
- Bure tanda
- Ena (terera)

Oko ni gokorera gotari mbo oyo omerwaki?

- Omonto oyo osa babesa
- Omonto oyo osa obosokia
- Omonto oyo osa okorego nakiye
- Omonto oyo osa mabesa kororera
- Ena (terera)

Mbo oyo gotoresa obori obo gotumi oga omerwaki koigo?

- KES 10000 n'oborori
- KES 10000 n'obwete 19999
- KES 20000 n'obwete 30000

- KES 30000 n’oborori

SEHEMU C: OMANYIRE KOBE RIANYIKO RIA FAMILY PLANNING

Orachetera enyiko rya family planning?

- Eego
- Eeya

Nakiye eego, echere ya otererie ria family planning oyore?

- Mapirisi agosacha obogochana
- Mapirisi agosacha obotonga
- Enyiko riambongi ria intrauterine contraceptive device (IUD)
- Implants
- Lactational amenorrhoea method
- Enyiko rya natural family planning
- Tubal ligation
- Vasectomy
- Condom
- Ena (terera)

Nakiye obakoirere/chereya enyiko ria family planning?

- Eego
- Eeya

Nakiye eego, nyiko oyo obakoirere/chereya oria enyiko ria family planning?

- Mapirisi agosacha obogochana
- Mapirisi agosacha obotonga
- Enyiko riambongi ria intrauterine contraceptive device (IUD)
- Implants
- Lactational amenorrhoea method

- Enyiko rya natural family planning
- Tubal ligation
- Vasectomy
- Condom
- Ena (terera)

Orakoirire chirebo nka nyiko oyo riake orerie nakiye?

Nakiye owakoiririe chirebo, naro nakiye omanya okora nyiko ria family planning oyore?

- Omonto onke
- Omonto onke na omorwaki onke
- Omonto osonte ogotega oborori
- Omonto onke na enyako
- Omomura nakiye

Koigo okoita nyiko ria family planning (Nakiye eeya egokora na okwasa)?

- Ngango oiga omwana
- Ngoire omwana
- Omorwaki onke onge aeko onchera nyiko
- Ekebesa ekobe
- Egekundi kia kanisa genchaige
- Mabesa ekobe enyiko
- Bure rianga atari enyiko erika health facility
- Ena (terera)

SEHEMU D: MABEA AGO GOKORERA EKIAMO CHA KISOKO

Nakiye omonto ochiokerera oko rianche riago gokorera oborori nakiye?

- Omorwaki
- Omokungu
- Omorwaki na omokungu bosi
- Omomura nakiye
- Ena (terera)

Koigo okoirira na okochoka oborori bori ria family planning?

- Omorwaki
- Omonto onke
- Omomura nakiye
- Omonto osonte ogotega oborori
- Ena (terera)

Oborori bwo omorwaki bokora okonywa koiga omenya nakiye family planning rianyiko nakiye oroturire oko?

- Onchokera nyako yo okorora family planning
- Oseka mabesa
- Omonya otiokereria health facility koiga oko family planning rianyiko
- Onyesania omokora nyiko riekioko chenge
- Ena (terera)

Mokonywa rieko roko nka nakiye?

- Abanto onke
- Amawata
- Ebonyinge ria abamura
- Ena (terera)

Ekiamo echiachaero nakiye nakiye oko community yoche kera oko gokorera family planning nakiye?

Nakiye amariango bano ariorera nakiye gokorera oko family planning oko community yoche?

Koigo oko amawani emaako oko gokora omwana mwabo otochi oko community yoche?

- Eego
- Eeya
- Nyora eya

Nakiye eego, echere oko ekogochera?

SEHEMU E: MABEA AGO GOKORA EGOKORETE RIANCHIE RIYA HEALTH FACILITY

Koigo okoriria oborori bwa family planning nakiye?

- Enyiko ria government health facility
- Enyiko ria private health facility
- Ena (terera)

Nakiye igoire ingaki koigia health facility yogo gokorera family planning nakiye?

- Reke risaga 30 minutes
- 30 minutes n'obwete 1 hour
- 1 hour n'obwete 2 hours
- Nkiore n'obwete 2 hours

Ngoire ingaki okoiriria oborori bwa family planning nakiye?

- 30 minutes
- 1 hour
- Nkiore n’obwete 2 hours

Ngoire oborori bwa family planning bware oko ogotuma oko orogie nakiye?

- Eego
- Eeya

Nakiye eeya, koigo oko echere oko ekogochera nakiye?

- Ekiroba etarire
- Mabesa egokorwa chache
- Omonto osonte ogotega oborori naene araene
- Omonto osonte ogotega oborori aiga okonywa mabesa
- Amabere chie oborori atarire ekero
- Irekia igoro omonto oncho oiriria oborori
- Ena (terera)

Ngoire mabesa egosoka kochireria oborori bwa family planning nakiye?

- Bure tanda
- Reke risaga KES 50

- KES 51 n'obwete KES 100
- KES 101 n'obwete KES 200
- Nkore n'obwete KES 200

Ngochia oborori bwa family planning okoiriria health facility nakiye?

- Obeere
- Okoira oko
- Okoira oko buya
- Okoira oko buya mono

Ngochia omonto osonte ogotega oborori bwa family planning nakiye?

- Omonto onchia buya
- Omonto okoira buya
- Omonto okoira oko buya mono

Appendix 4:Semi structured interview guide

1. What is your role in the provision of quality family planning services in the Sub-County?

2. Which cadre of health care workers offer family planning services?

3. How should family planning services be provided at the health facilities?

4. What should be put in place in order to train health providers to offer quality FP methods in the health facilities?

5. How often does the management team go to the health facilities to conduct supportive supervision?

6. What are the challenges that health care providers face that influence uptake of long term family planning services?

7. What is the source of the family planning commodities?

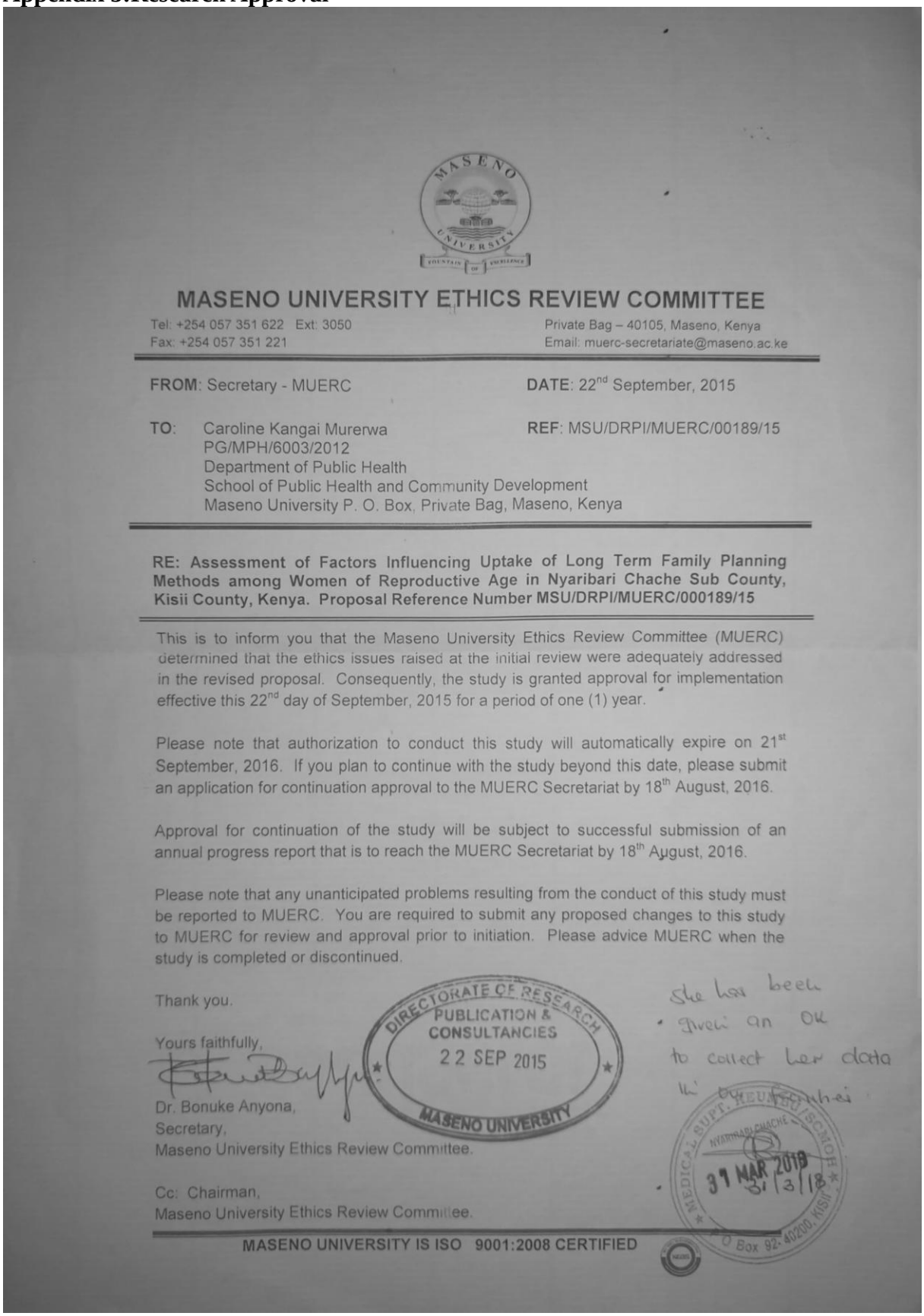
8. Do health facilities experience stock out of the commodities?

9. How frequent are FP stock out?

10. Which of the family planning commodities are out of stock?

11. What needs to be done in order to render quality services at the health facilities?

Appendix 5:Research Approval



MASENO UNIVERSITY ETHICS REVIEW COMMITTEE

Tel: +254 057 351 622 Ext: 3050
Fax: +254 057 351 221

Private Bag – 40105, Maseno, Kenya
Email: muerc-secretariate@maseno.ac.ke

FROM: Secretary - MUERC

DATE: 22nd September, 2015

TO: Caroline Kangai Murerwa
PG/MPH/6003/2012
Department of Public Health
School of Public Health and Community Development
Maseno University P. O. Box, Private Bag, Maseno, Kenya

REF: MSU/DRPI/MUERC/00189/15

RE: Assessment of Factors Influencing Uptake of Long Term Family Planning Methods among Women of Reproductive Age in Nyaribari Chache Sub County, Kisii County, Kenya. Proposal Reference Number MSU/DRPI/MUERC/000189/15

This is to inform you that the Maseno University Ethics Review Committee (MUERC) determined that the ethics issues raised at the initial review were adequately addressed in the revised proposal. Consequently, the study is granted approval for implementation effective this 22nd day of September, 2015 for a period of one (1) year.

Please note that authorization to conduct this study will automatically expire on 21st September, 2016. If you plan to continue with the study beyond this date, please submit an application for continuation approval to the MUERC Secretariat by 18th August, 2016.

Approval for continuation of the study will be subject to successful submission of an annual progress report that is to reach the MUERC Secretariat by 18th August, 2016.

Please note that any unanticipated problems resulting from the conduct of this study must be reported to MUERC. You are required to submit any proposed changes to this study to MUERC for review and approval prior to initiation. Please advice MUERC when the study is completed or discontinued.

Thank you.

DIRECTORATE OF RESEARCH PUBLICATION & CONSULTANCIES 22 SEP 2015 MASENO UNIVERSITY

She has been given an OK to collect her data

Yours faithfully,

Dr. Bonuke Anyona,
Secretary,
Maseno University Ethics Review Committee.

MEDICAL SUPT. KEUMBU/SCMOH NYARIBARI CHACHE 31 MAR 2016 P O Box 92-40200, KISII

Cc: Chairman,
Maseno University Ethics Review Committee.

MASENO UNIVERSITY IS ISO 9001:2008 CERTIFIED

Appendix 6: Consent form

My names is **Caroline Kangai Murerwa** a postgraduate student at the **Maseno University**. I am conducting research on ***Assessment of factors influencing uptake of long term family planning methods among women of reproductive age in Nyaribari Chache Sub-County, Kisii County, Kenya"*.** I am requesting you to participate in this study because you are one of the women living in Nyaribari Chache Sub-County.If you agree to be in this study you will respond to a questionnaire and your participation will take about 30 minutes. However, please note the following:

Participation in this research may involve personal information but your records will be handled as confidentially as possible. No names will be used in any report from this study.

There will be no direct benefit to you from participating in this study. However, your participation and the research findings will assist to improve uptake of long term family planning methods.

Participation in this research is voluntary. You are free to decline to be in this study, or to withdraw at any point. Your decision as to whether or not to participate in this study will have no influence on your normal activities.

I have read the consent form and/or explained to, describing the nature of the study and the benefits. I have had a chance to ask all questions regarding this study. I voluntarily agree to participate.

Date …….. Signature of the Participant ……..……

Date ……. Signature of the Person obtaining Consent……..……

In case of any questions or clarifications the research assistant will help you. If you have further questions, feel free to contact the principal researcher, **Caroline Kangai Murerwa** (School of Public Health and Community Development, Maseno University, Mobile **0722316349).**

Thank you, Caroline Kangai Murerwa (Principal Investigator).

Appendix 7: Consent form in Ekegusii (Rirube riokonyora ribaga)

Ase amarietha nkoroku **Caroline Kangai Murerwa**Inche no nomoorokiwa o **Maseno University.**Igo ngokora obotuki komanya chinchere aoao chigokora abasubathi bali bare emiaka yo koibora kothumeka chinchera chia oboiboro ime ya Nyaribari Chache Sub-County, Kisii county. Igo ngokoarigania thosange amonaye asengencho aye no yomo bwa abasubathi bamenyethe Nyaribari Chache Sub-County.

Onye kogoancherana kosangeria, igo ekoira chinsa ange 30 chioka. Goikera abu thiga nkomanyi aya:-

Okosanga ase oboutki obo nabo boragani okomanya kwa beene igoro yago korende onde thaiyo oramanye Marietha thari kobekwa.

Ngokonyeka konde nkoyi kobwatekania nokosangereka nogosoma oko korende nabo eragokonye komanya chinchera aoao chiokobanga oboiboro.

Ogosangerka ase ogosomo nobo kweru. Nabo orakane gose bwerusi ekero okogani.

Nasomire/ namanyirigu kobwati obosomi obo. Nanyorire ribaga riokomanyigwa igoro yoobosomi obo. Igo nkweru ase obosomi obo.

Chitariki…….. Esei yomoiraneria……..……

Chitariki……. Esei ya olia otageta libaga……..……

Onye koragani obokonyi bonde bwensi nabo okomanyi **Caroline Kangai Murerwa** (School of Public Health and Community Development, Maseno University, enamba ye simi **0722316349**).

Mbuya mono,

Caroline Kangai Murerwa.