DETERMINANTS OF UNMET NEED FOR MODERN CONTRACEPTION AMONG WOMEN OF REPRODUCTIVE AGE LIVING IN ELDORET TOWN, KENYA

Maleche David Aluvala

A Thesis Submitted in Partial Fulfillment for the Requirement for the Award of Masters of Science in Advanced Nursing Practice (Community Health) of Masinde Muliro University of Science and Technology

March 2020

DECLARATION

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

Signature..... Date.....

Maleche David Aluvala

Reg. No. HNR/ G/ 42/ 15

CERTIFICATION

This thesis has been submitted for examination with our approval as University supervisors

Signature..... Date.....

MR JOHN ARUDO

Department of Clinical Nursing and Health informatics

Masinde Muliro University of Science and Technology

Signature……. Date……

DR DAMARIS OCHANDA

Department of Nursing Research, Education and Management

Masinde Muliro University of Science and Technology

ACKNOWLEDGEMENT

I wish to give glory to the almighty God for the free the lease of life and good health that enabled me to successfully go through the entire process of research learning and writing.

May I acknowledge with thanks the ministry of education and the National Commission for Science, Technology and Innovation (NACOSTI) for granting me the authority and permit to carry out this study in Uasin Gishu County. My gratitude goes to the administration of Masinde Muliro University of Science and Technology and the school of Nursing, Midwifery and paramedical sciences (SONMAPS) in Particular for enrolling me to this Master's program in the institution. Similarly, I also wish to thank Moi University for the opportunity and support they accorded me to pursue this degree.

I wholeheartedly wish to thank my research supervisors and lecturers Mr. Arudo and Dr Damaris Ochanda for their commitment and tireless effort in taking me through the tedious process of proposal development and thesis writing.

May I also take this opportunity to sincerely give my gratitude to the County Commissioner, County director of Education and the County director of Health for Uasin Gishu for permitting me to carry out this study in their area of jurisdiction.

Finally may I gratefully appreciate my research assistants for their hard work in ensuring that data was collected under all circumstances. I say thank you to my colleagues for their encouragement and moral support during the study period.

DEDICATION

This work is dedicated to my wife and children.

ABSTRACT

Unmet need for modern contraception is one of the most vital indicators of birth control programs and policies. It is challenging to motivate women of childbearing age to adopt contemporary means of birth control especially in urban poor settings. The government of Kenya has instituted several strategies and policies to improve acceptance of family planning services in order to increase contraceptive prevalence rate (CPR) and reduce total fertility rate and unmet need which still remains high at 46 and 24 percent respectively. With poverty level of 49%, the incidence of unsafe abortion in informal settlements of Eldoret is on the rise from 23.6% in 2018 to 32% in 2019. The broad objective of this study was to analyze the determinants of unmet need for modern contraception among women of reproductive age living in formal and informal settlements of Eldoret town. A community-based survey was conducted in Langas informal settlement and Old Uganda Road Estates of Eldoret.527respondents (15 to 49) were interviewed from randomly selected households through multistage sampling method. Data collection tools used in this survey were, apre tested questionnaire, key informant interview and focus group discussion guides. The reliability test conducted using Cronbach's alpha reported an internal consistency of 0.810 from the pilot results. The independent variables included age, marital status, level of education, occupation, residence, partner's disapproval and fear of side effects among others. The dependent variable was unmet need. Descriptive statistics, bivariate and multiple logistic regressions were used in data analysis using SPSS version 19 software. Odds ratios with 95% confidence interval were calculated. P value of less than 0.05 was used to establish statistical significance. Age, place of residence, partner's level of education, employment, religion, fear of side effects, marital status, number of living children, husband disapproval, husband's decision on number of children, accessibility and never having been pregnant were significantly associated with unmet need for modern contraception. Overall, unmet need for limiting births was high among residents of Old Uganda road compared with Langas. On the contrary, unmet need for spacing childbirths was higher in Langas than Old Uganda road estate. The study recommended that FP service providers, CHV's and community-based organizations give health education on benefits of contraceptive services, available methods in the market, usage and side effects of the methods in both settlements. FP service providers and CHV's in both settlements to counsel couples on FP method discussion to enhance approval. Increase number of FP service providers in Langas to ease overcrowding at service delivery points. Since men did not participate in this study, further research is recommended on men's perspectives on reasons for non-use of birth control methods in formal and informal settlements of Eldoret.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMNS

APHRC	African population and Health research centre
CHV's	Community Health Volunteers
CPR	Contraceptive Prevalence Rate
FP	Family planning
GOK	Government of Kenya
IUD	Intra uterine devices
ICPD	International conference on population and development
KDHS	Kenya Demographic and Health survey
KNBS	Kenya bureau of statistics
LAM	Lactational amenorrhea
MOH	Ministry of Health
NCPD	National Council for population and Development
OR	Odds ratio
SPSS	Statistical package for social sciences
TFR	Total fertility rate
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter gives a detailed background of the problem followed by the statement of the problem. Thereafter, the main and specific objectives are provided followed by research questions and Hypothesis. This is succeeded by justification and limitations of the study and subsequently the conceptual framework. Finally, operationalization of the variables is provided.

1.2 Background to the study

Globally, over 600,000 females loose lives every year due to pregnancy related complications out of whom 200, 000 are attributed to failure to access contraceptive services (Ochako et al., 2016). Unsafe abortion accounts for 75000 and 99 percent of the deaths occurred in the developing nations (Priedman et al., 2015). Darroch et al (2013), further revealed that 79,000 maternal and 1.1 million infant deaths would be prevented if people adequately utilized contemporary birth control methods.

Through constant rural to urban relocation, urban centres become overcrowded by employment seekers in need of improved living standards. This has culminated in an upsurge in the number of people residing in informal settlements. These slum settlers are frequently forced to share congested public health services or look for FP services at unregulated low class private clinics that offer inexpensive care (Speizer et al., 2012).

An estimated 222 million females have unmet need for modern contraception in the developing nations and this figure may escalate in future if the rate of contraceptive acceptance does not keep pace with population growth (Singh and Darroch 2012).

Moreover, only a slight decrease in the level of unmet need for contemporary contraception has been realized in the recent years despite the recognition of the significance of addressing the problem (Alkema et al., 2013). Rapid increase in population can be a major obstacle to the realization of sustainable Development Goals (SDGs) 4, 5 and 7 which relate to quality education, gender equality and access to clean energy. To address this phenomenon, many countries including Kenya turned their attention on contraceptive interventions namely family planning services.

Sub Saharan Africa (SSA) has the lowest contraceptive prevalence rate (CPR) and highest unmet need for contraception at 24 and 25 percent respectively (WHO 2013). According to Maki (2012), almost 1 in every 4 married females in SSA has an unmet need for FP. SSA, has 35 countries out of which 24 have unmet need of more than 20 percent (Cleland et al., 2014).

A report by UN Habitat (2013) estimated that 70 percent of Sub Saharan African urban dwellers live in informal settlements. Asia hosts the highest number of people who live in slum settlements at 380.3 million. These informal settlements lack public health facilities. Therefore, a significant number of Asians and majority of Africans in urban settings may not be benefiting from formal public services such as Family planning.

Kenya's rapid population growth has ensued owing to poor urban governance and inadequate employment prospects leading to widespread poverty that is concentrated in urban poor settings (APHRC 2014). According to United Nations (2014), Kenya is a good case of SSA population catastrophe. For instance, the population of slum residents increased from 17 percent in 1990 to 25 percent in 2014 and is estimated to reach 44 percent in 2050 (Beguy et al., 2017). However, despite pervasive poverty

and poor living conditions, the population in informal settlements continues to increase at a high rate. The population of women of reproductive age (15 – 49) living in informal settlements in Nairobi rose from 26.6 to 29.2 percent in 2000 and 2012 respectively (APHRC 2014). High level poverty, low levels of education and large household sizes in informal settlements negatively affects access to basic health services including contraceptive usage. At present, the ordinary woman in Kenya will have 4 children in her life, almost 1 in 5 (18%) married women and virtually 1 in 4 (23%) adolescents do not want to have a child but are not using FP (KNBS 2016). In concurrence, KDHS (2014), revealed that Kenya still has many women (18%) who do not use (18%) contemporary contraception despite the various strategies that have been rolled out.

Comparatively, the world's fertility rate stood at 2.5 children in 2013 compared to Kenya's 4.6 (World Bank 2014). In comparison with other East African countries, Kenya was rated as the second highest after Tanzania which had a fertility rate of 5.43 in 2010. These high fertility rates coupled with low birth spacing are among major reasons why malnutrition has remained high (Awiti, 2013). The current CPR is 58%, 53% for modern contraception and 5% for traditional methods of which the most widely used are the injectables at 26%, implants 10% and pills 8% (KNBS 2014).

Uasin Gishu County's CPR stands at 43% in comparison with the national prevalence of 58%. The population growth rate is 3.8 % against the national growth of 2.8 due to low contraceptive acceptance (UGCID 2013). In this County, the uptake of FP methods from clinics is about 27%. Those that use long acting methods were 17% while 83% used short acting methods (Kiprotich, K 2014). Short acting methods increase the risk of unintended pregnancy because their effectiveness depends on correct and consistent usage (NICE 2014). From sampled contraceptives, the use of

short acting contraceptives is higher compared to long acting. Women who used pills were 12381, Injectables 75810, IUCD 2558 and implants were 6692 respectively (Health Statistics office UG county, 2016).The resultant unintended pregnancies mostly affect women in the largest informal settlement namely Langas. This urban poor estate has continued to experience high poverty levels, unemployment, increased crime rate, and overstretched health and schooling facilities. There is also early sexual debut leading to teenage pregnancies and increased abortion. Maternal health problems in this informal settlement include postpartum depression and deterioration in general physical health (UGICD 2013).

1.3 Statement of the problem

Globally, unplanned pregnancies continue to be a major problem in developing nations with 214 million women wanting to delay childbirth or limit the size of their families and yet they are non- users of contemporary birth control methods**.** This unmet need for modern contraception ultimately results in poor maternal health outcomes especially among the urban poor populations (WHO 2018).

Sub Saharan Africa (SSA) has the lowest contraceptive prevalence rate (CPR) and highest unmet need for contraception at 24 and 25 percent respectively (WHO 2013). Furthermore, the highest proportion of married women (about 38 percent) with unmet need for modern contraception is found in SSA. According to a report by UN Habitat (2013), almost 70 percent of Sub Saharan Africa's urban residents live in informal settlements which lack public health facilities.

In Kenya, the incidence of induced abortion due to unintended pregnancy was estimated at 48 per 1000 live births by 2015, more than 300,000 occur yearly and the present maternal mortality is 560 for every 100,000 babies born alive (KNBS 2018).

Various factors related to urban poverty are responsible for these poor reproductive health outcomes. Langas is the biggest informal settlement in Eldoret (UGCID 2013). Despite the fact that it was served by one public Hospital, private and faith based health facilities, NGO's and private clinics, the slum still experiences a rapid increase in population. The challenges resulting from this population increase include, overcrowding, early sexual debut leading to teenage pregnancies and increased abortion, street children and deterioration in physical health of mothers. With poverty level of 49 percent, there is an increase in unwanted pregnancies and unsafe abortions from 23.6% in 2018 to 32% in 2019 (UG DHS 2, 2019). Other problems include increased crime and overstretched schooling and health facilities.

According to Uasin Gishu County Integrated Development Plan (2013), Contraception acceptance is low standing at only 34 percent compared to the national average of 46 percent. The unmet need proportion is therefore estimated at 66 percent (UGICD 2013).

The proposed study aims to investigate factors that hinder current contraceptive uptake among women of childbearing age living in formal/ informal settlements and of Eldoret.

1.4 Broad objective

To investigate the determinants of unmet need for modern contraception among women of reproductive age living in formal and informal settlements and of Eldoret

1.5 Specific objectives

i. To determine the factors associated with unmet need for limiting births among women of reproductive age living in formal and informal settlements of Eldoret.

ii. To examine the factors associated with unmet need for spacing births among women of reproductive age living in formal and informal settlements of Eldoret.

iii. To compare the determinants of unmet need for modern contraception among women of reproductive age living in formal and informal settlements of Eldoret.

1.6 Research questions

i. What are the factors associated with unmet need for limiting births among women of reproductive age living in formal and informal settlements of Eldoret?

ii. What are the factors associated with unmet need for spacing births among women of reproductive age living in formal and informal settlements of Eldoret?

iii. What differences exist between the determinants of unmet need for modern contraception among women of reproductive age living in formal and informal settlements and of Eldoret?

1.6.1 Research hypothesis

Ho. There is no difference in the prevalence of unmet need for modern contraception between women of reproductive age living in formal and informal settlements of Eldoret.

1.7 Justification

For a long time, it has been assumed that urban populations are advantaged in terms of access to information, education, economic opportunities and health care including better sexual and reproductive health services. This assumption ignores inequities experienced by the urban poor since access to services and opportunities are not equally shared among urban populations. The population policy for National development through sessional paper no. 3 of 2012, proposed to escalate national practice of contemporary contraceptives to 58% by 2020 and 64% by 2025 (PPND

2012). Additionally, the policy framework identifies reproductive and sexual health care as a human right and everybody has a right to use. The need for this study was prompted by the fact that many studies on factors influencing non-use of contraception among childbearing women living in informal areas were concentrated in major cities like Nairobi (APHRC 2014). These studies ignored informal populations in smaller towns like Eldoret. Furthermore, there is limited information on reasons as to why childbearing women are not using birth control methods in formal and informal locations in Eldoret**.**

Condensing evidence across Langas, the largest informal settlement in Eldoret, and Old Uganda Road Estate, an estate with middle class group would allow meaningful comparison of practices and facilitate information sharing across the two areas of residence.

Undertaking this research would help the national and county governments in improving the health of its citizens by formulating appropriate FP policies that will reduce the proportions of unmet need for contraception among the urban poor populations.

1.8 Limitations of the study

Accessing some parts of Langas informal settlement was fairly challenging in terms security and collecting data during the community survey. This limitation was overcome by recruiting village heads to assist in the identification of households and boundaries. Getting informed consent and explaining the benefits of the study to the respondents before actual data collection also helped in overcoming this problem.

Only women were interviewed and therefore there was lack of data from men whose behaviuor and attitude influenced women's contraceptive practice. This restriction

was overcome by including questions regarding the attitude of their spouses towards FP methods in the data collection tools. None response bias from the exclusion of women who were non-consenting.

1.9 Conceptual framework

This conceptual framework is based on previous studies which included Bongaarts et al (1984), Asiimwe et al (2013) and Novignon et al (2014). According to Bongaarts, contraceptive use is an important determinant of fertility as theorized through his fifth proximate determinant, the index of contraception. This framework examined the socio demographic and socio-economic aspects linked to disuse of contraception among females of childbearing period residing in slum urban areas (Kabiru et al., 2010). Two sets of variables were used to look at these factors. The independent variables which influence unmet need were split into three groups. The first two groups were the primary causes composed of lists of key demographic and socio-economic variables. This analysis considered that these factors work through intervening variables that influence contraceptive practice among women. Unmet need was the dependent variable.

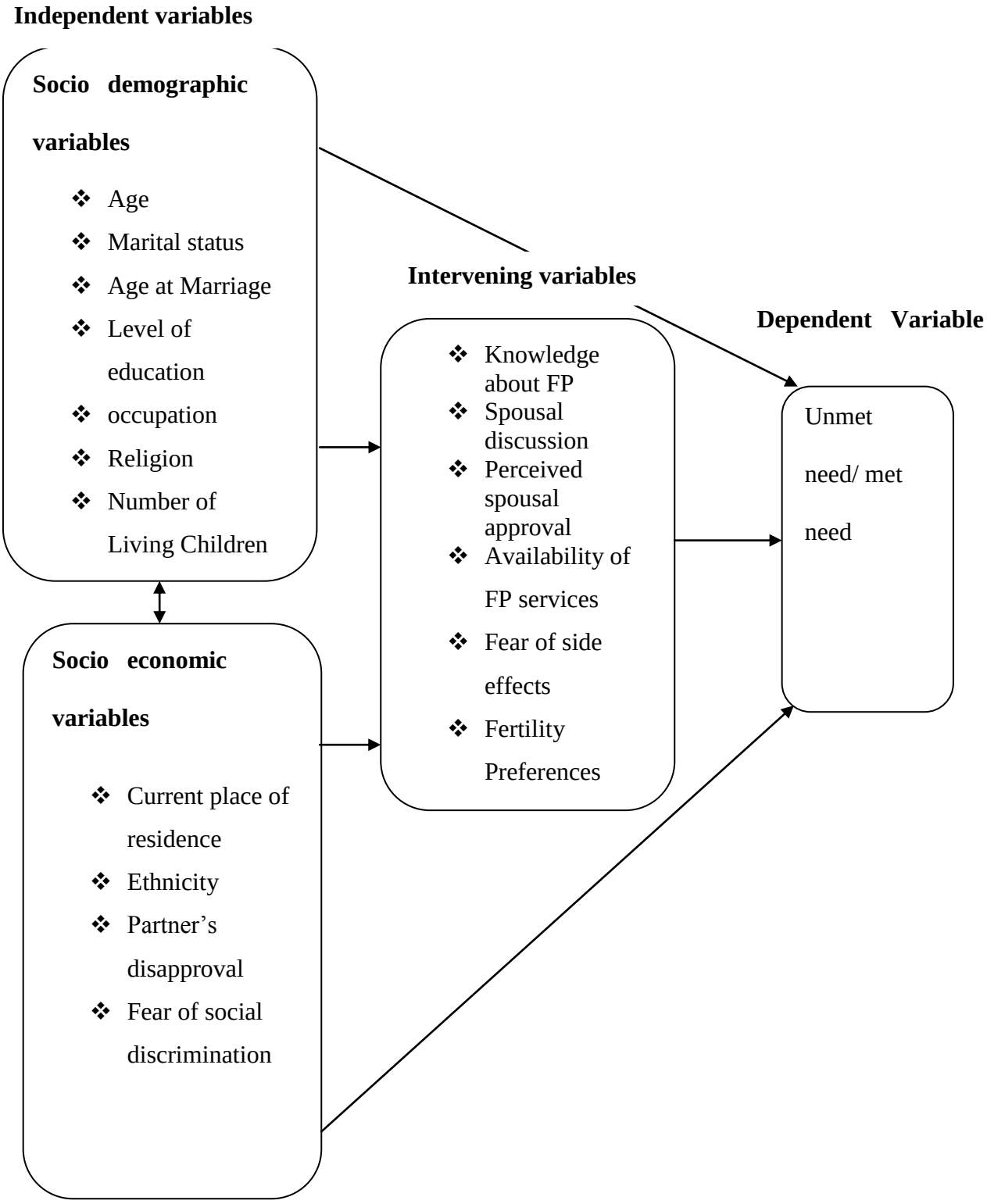
It was assumed that socio demographic and economic factors were the underlying determinants of unmet need. Socio economic variables significantly encouraged contraceptive usage in Kenya (Kimani et al., 2013). For instance, women from the lowest socio economic class exhibited the greatest gap between wanted and observed fertility. They lacked electronic equipment like Radio and television sets through which FP information is accessed. Failure to access information about FP leads to non-use of contraception. On the other hand, education empowered women by giving them better access to contraceptives as it helped them understand, interpret and follow instructions on contraceptive use (Larson and Stanffors 2014). However, women with

little or no education were generally disempowered and therefore cannot easily understand, interpret or even follow instructions on contraception.

Current FP method use was preferred to ever use because of its superior value in measurement as it would reduce bias in reporting and had a more direct relationship with FP policy. Bias was also eliminated through random selection in sampling. Randomization ensured that all the background characteristics were similar in the groups being investigated. To moderate for confounders such as age, only those women between 15 and 49 years were enrolled for the study. In the analysis, socio economic status as a confounder of education variable was mitigated through categorizing women in various levels of education namely, no education, and primary, secondary and tertiary.

Socio demographic and socio economic variables were used to describe the status of contraceptive usage through comparing unmet need in formal and informal settlements. Similarly, factors contributing to non-use of contemporary means of birth control were compared.

Figure 1. 1: Conceptual framework for unmet need for modern contraception



Source: Adapted and modified from Justice Novignon *et al* (2014)

1.11 Operationalization of variables

Household: Those who live under the same roof and compose a family or a social unit composed of those living together in the same dwelling.

Informal settlement: Unplanned settlements and areas where housing is not compliant with current planning and building regulations.

Modern methods of contraception: These include clinical and supply methods used for the purposes of Family planning.

Women with unmet need: The number or percent of women currently married or in union who are fecund and who desire to either terminate or postpone childbearing, but who are not currently using a contraceptive method.

Women with unmet need for limiting: These are women who desire no additional children and who do not currently use a contraceptive method.

Women with unmet need for spacing: These are women who desire to postpone their next birth for a specified length of time (for example for at least 2 years from the last delivery) and who do not currently use a contraceptive method.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter reviews research papers, journals and magazines related to this study. It will enhance the readers understanding of the unmet need problem in informal settlements by reviewing in detail the prevalence of unmet need, benefits of contraception, available methods, and factors linked to contraceptive non-use. Finally it will identify the knowledge gaps.

2.2 Contraception

Family planning ensures that individuals and couples get and space their births through practice of current birth control methods and management of childlessness (WHO 2012). Contemporary FP methods therefore, helps women and couples to get children by choice and not by chance. Access to more contraceptive choices remain an important factor on which women and by extension couples rely for protection against unwanted pregnancy. Modern contraceptives are categorized as short, long acting and permanent methods. Methods that act for short time are further divided into Oral contraceptives and injectables among others. Long acting methods include implants, IUD and sterilization (Tubal ligation and Vasectomy). Tubal ligation and vasectomy are permanent methods of contraception. Other methods include interventions with dual functions like male and female condoms.

Long acting permanent methods (LAPMS) are convenient to use, effective in preventing pregnancy, cost effective and can therefore result in saving money for both couples and governments (Azmoude et al., 2017). Similarly, long acting reversible methods are found to be safe, require little or no maintenance and their compliance is much better than other hormonal contraceptives (ORC Macro 2011).

2. 3 Prevalence of contraceptive use and unmet needs

From the global perspective, 64 percent of childbearing women used some form of birth control method in 2015 although the usage was considerably lower (46%) in the least developed nations (Ahmed et al., 2012). Trends in contraception worldwide (2015) showed that Asia, Caribbean regions and Latin America with relatively high CPR, unmet need stands at 10.2 and 10.7% respectively. However, non-use of FP methods remains persistently high in informal settlements. This problem is related to the growing population and inaccessibility of FP services especially in young and poorer segments of the population.

SSA is the remains the region with the lowermost contraceptive coverage (24%) and highest unmet need (25%) (WHO 2013). Moreover, of the 35 countries in SSA, 24 have unmet need for contemporary contraception that surpasses 20% (Cleland et al., 2014).

In Kenya, presently married women's practice of current contraception improved from 32 % in 2003, 39 % in 2008 – 2009 and again to the present 53 % in 2014 (KDHS 2014). Results from a study undertaken in Nairobi city slums showed a marked improvement in the use of contemporary means of birth control which translated in change in reproductive behaviuor (Beguy et al., 2017). This finding concurred with KNBS (2016) which indicated a marked increase in the practice of contemporary FP methods over the last ten years from 32 to 53 percent in 2000 and in 2014 respectively.

Regionally, women in Central Kenya registered the highest CPR of 73% followed by Eastern region with 70%. 22 Counties have a CPR that surpasses the national average of 58%. Trends in Contraceptive prevalence from 1989 – 2014 show a consistent

increase; KDHS (1989) - CPR of 27%, KDHS (2008 – 09) - CPR of 46% and KDHS (2014) – CPR of 58%. (KNBS 2014).

Locally, the CPR of Uasin Gishu stands at 43% compared to the national prevalence of 58% (KDHS 2014). Furthermore, contraceptive acceptance rate is low standing at 34% against the national acceptance rate of 46% (UGCID 2013). The uptake of long acting contraceptives is low at 17% against 83% for short acting methods and this increases the incidence of unintended pregnancies since short acting methods of FP require correct and consistent use as opposed to long term methods (Kiprotich, K 2014).

2.4 Family planning in Kenya-Policy context

Disuse of current birth control methods by women who desire to stop or postpone childbirth was estimated at 18 percent due to insufficient supply and inaccessibility to contraceptive materials (KDHS 2014). Other aspects that keep unmet need high include poverty, lack of male involvement and health management problems (Beguy et al 2017). As a result, the GOK formulated the following specific policies and programs to meet ICPD and SDG goals:

National Reproductive health strategy (NPHS 2009 – 2015) was put in place to improve access to better and fair distribution of reproductive health facilities to adolescents and HIV/ AIDS patients hence reduce regional inequalities in acceptance of FP services (Beguy et al., 2017)

The population policy for national development (PPND 2012 – 2030) puts back FP in the national development agenda, thus enhancing implementation of FP programs nationally. This policy seeks to scale up prevalence of current contraceptives from 58% to 64% by 2025. It ensures that county governments prioritize investments in

voluntary and high quality FP services. It also ensures multi-sectoral participation in giving youth friendly FP services and encourages counties to increase training and counseling for FP providers especially in implants and IUD's.

The right to healthcare is anchored in law through the constitution of Kenya (2010) which guarantees the right to health services thus making health a devolved function (GOK 2010). Devolution increases accessibility to reproductive health and FP (Beguy et al. 2017).

To ensure successful implementation of these programs, the MOH introduced a fund in the budget for contraceptive supplies. This alteration in health policy enhanced accessibility and ensured that free treatment at public health institutions is offered to children below the age of 5 years.

2.5 Contraceptive Methods

The methods available in the market include: Oral Contraceptives, Injectables, Implants, IUD, Barrier methods and male and female sterilization.

2.5.1 Oral Contraceptive Methods

Oral contraceptive methods are classified as combined oral contraceptives (COC) or progestin only pills (POPs). COC work by suppressing release of the ovum and thickening cervical mucus making it difficult for the sperm to penetrate (WHO 2017). Other benefits of Oral pills are reduction of excessive bleeding during periods, painful periods, alleviation of headaches during periods and excessive growth of hair on the body (Reid et al, 2010).

Progestogen only pills are basically used by lactating mothers. They have decreased efficacy and as such unwanted deliveries occur due to inconsistent usage. The most

significant side effects of the POPs are alterations in the menstrual phases such as irregular flow and spotting (Grimes et al., 2013).

A study carried out among slum residents in Mumbai (2012), showed that out of 342 women, 87.7 percent were aware of oral contraceptive pills (OCP) and that out of 234 couples who were using contraceptives, the practice was highest for OCP (28.07 percent). Asked about their preferences among various methods of contraception for future use, OCP was preferred by 35.96 percent compared to female sterilization (26.90 percent). However, another study conducted in an urban slum community in Delhi found that use of contraceptive pills was minimum with only 9 percent using those (Aeri et al., 2014). Further probing revealed that most women believed that usage of pills reduced the chances of women conceiving and that they should be used by those women who do not intend to have a baby again.

2.5.2 Injectables

Progestogen only injectables are also available in two formulations; 150mgof Medroxyprogesterone acetate (DMPA) given every 3 months and 200mg of Norethisterone enathate administered 2 monthly. These methods have easier compliance due to longer duration of efficacy. Side effects include irregular and prolonged bleeding or spotting, weight gain, libido changes, headaches and depression, bone thinning /softening which increases susceptibility to fractures and Ectopic pregnancy (WHO 2017).

2.5.3 Implants

Implants control fertility by suppressing ovulation, impeding sperm movement, thickening cervical mucus and changing the structure of the endometrium. The length of protection varies by brand, for example Jadelle provides contraception for 5 years,

Sino implant (II) 4 years while Nexaplanon provides contraception for 3 years. A study by WHO (2011) found that after removal, there is immediate return to fertility for implanon users compared to non-users. Moreover, the effectiveness and convenience of implants makes them popular increasing their demand when available in family planning programs. However, this method is commonly embraced by more educated than less educated women. Most educated women are employed and can afford the high cost of this mode of FP as it is expected that with lack of an earning source FP would decline (Oketch et al., 2011).

2.5.4 Intra Uterine Devices (IUD)

Worldwide, there are many types of intra uterine Devices (IUD) and the most commonly used are copper T – (Cu 380A), Multiload (Cu 375) and Levonorgestrel. The copper containing IUD is effective in preventing pregnancy and can also be used as emergency contraception (WHO 2017).

A study conducted in an urban slum community of Delhi (2014) among regular users of IUD revealed that 15 percent complained of discomfort while 85 percent did not experience any problem. On the other hand, 16 percent of those who discontinued the method complained of abdominal pain compared to 50 percent whose main reason for termination of the method was excessive bleeding during periods. The remaining 37 percent also discontinued IUD use even though they did not experience any problem. Most of those who discontinued did so within the first 3 months of acceptance. Data in the study also showed many had misconceptions about the method, for instance many claimed to have lost appetite due to the method. According to WHO (2017), some devices like the T shaped plastic device work by solidifying the mucus in the cervix hence preventing fertilization through obstructing sperm from accessing the uterus.

2.5.5 Barrier Methods

Barrier methods inhibit pregnancy by providing physical and/ or chemical obstruction to sperm. Except diaphragm and cervical caps, the rest are available over the counter and from community based distribution workers (Thomas et al., 2009).

The male/ female condoms give protection against pregnancy and sexually transmitted infections including HIV. They are most effective when used in combination with spermicides. Male condoms have a failure rate of 2 percent when used correctly. Advantages of this method include safety, low cost, protection from both pregnancy and sexually transmitted diseases. They are also readily and widely available even over the counter. On the other hand disadvantages include hypersensitivity to rubber (Latex allergy) and reduction in sexual sensation (WHO 2017).

2.5.6 Male and Female Sterilization

These are permanent methods of birth control. The male undergoes vasectomy while in the female tubal ligation is done. Although these means of contraception have been proved to be effective, some studies have found male sterilization to be detested in some communities in the world. A study in slums of Mumbai found that male sterilization was not practiced at all. The method was however preferred by 3.5 percent of the study population as a permanent method of contraception. Despite the fact that 49.12 percent of the respondents were aware of the method, none was willing to undergo the procedure (Makande et al., 2012).

Female sterilization (Tubal ligation) involves blocking or cutting the fallopian tubes to impede the ovum from meeting the sperm. This method is 99 percent effective in preventing pregnancy. This method is voluntary and informed consent is needed (WHO 2017).

2.6 Benefits of Contraception

Use of contraceptive methods is key to slowing population growth which negatively impacts on the economy and national resources.

Contraception helps individuals and couples to give birth to children by choice and not by chance. Through utilization of the various methods in the market, they can postpone pregnancies or even terminate childbirth altogether thereby averting risk of health problems and deaths from early child bearing. Furthermore, FP reduces maternal and infant deaths, unwanted pregnancies and unsafe termination of pregnancy (WHO 2017).

Young mothers frequently deliver low birth weight babies whose resistance to infections and ability to overcome trauma is low and can easily die compared to those born to women above 20 years. Additionally, FP methods prevent malignancies of the reproductive system such as cancer of the cervix and also helps in the treatment of menstrual disorders like dysmenorrhea (Megan et al., 2013). According to WHO (2013), contraceptive methods prevent women living with HIV from getting unintended pregnancies, resulting in fewer infected babies. Moreover, condoms offer protection against unintended pregnancies and sexually spread diseases. There is a drop in adolescent pregnancies and creation of more time for women to engage in other activities.

2.7 Factors Associated with unmet need for limiting and Spacing births

Inability to use Fp despite the desire to stop or postpone childbirth differs from location to location and is determined by socio demographic aspects such as age, level of schooling, employment, religious conviction among others, Socioeconomic reasons such as present dwelling, lack of information on birth control methods, wealth index,

fertility preferences, Ethnicity, fear of social discrimination and exposure to FP messages (Gebreselasie et al., 2013). These factors and other explanatory variables have not been proved to cause the same problem in formal and informal settlements of Eldoret, hence the investigation.

2.7.1 Age

Various age groups have different needs regarding reproductive health. Women in mid-twenties are unlikely to use contraceptive methods as they find this period to be the opportune time to give birth to children. On the contrary, older women whose age is above forty five years are expected to use contraceptive methods as most of them have already given birth to enough children. Utilization of contemporary means of contraception among slum dwellers of Nairobi was lowermost among currently married females aged 15 to 19 years (Beguy et al., 2017). In concurrence, Tobe et al (2015), pointed out that women aged 40 and above are more expected to practice FP in comparison with those aged 15 to 19 years. Additionally, a study conducted in Kibera slums found that FP unmet need for spacing concentrated around relatively younger age sets and declines towards the oldest age groups (Abeka 2012).

2.7.2 Marital Status

Marital status plays a major role in influencing FP method use. This depends on whether a woman is married or not and the number of times a woman has been married. An ever married woman has more chances of not using a contraceptive compared with one who has never been married (Nyauchi et al., 2014). This can be attributed to frequent coital exposure equated to those who are not married. A woman who has been married more than once has increased chances of not adopting any preventive measures (Adebowale et al., 2014).

2.7.3 Age at Marriage

The age at which women get married has increased around the world. A significant proportion of girls in SSA are being married off before their 18th birthday and this early marital relationship in young girls exposes them to frequent and unprotected sexual intercourse which ultimately leads to early and risky first births. Furthermore, women who are married off early have limited opportunity to plan and space their births since contraceptive use within marriage is not expected (UNCEF, 2005). These women need to prove their fertility soon after marriage (UBOS and ICF international, 2012). In Uganda, the median age for marriage was 17.9 years and women are expected to prove their fertility soon after marriage (Asiimwe et al., 2014).

2.7.4 Level of Education

Education plays a major role in influencing contraceptive use as it empowers women and gives them better access to contraceptive services (Palamuleni et al., 2014). They can easily understand, interpret and follow instructions regarding contraceptive use. Education enables women to make informed decision on FP method choice. The higher the level of education, the lower the level of unmet need and vice versa. A study undertaken conducted in Nairobi city slums established that in 2000, women with secondary education and above were more expected to use current contraceptive to those without education (43% versus 13 %). Nevertheless, by 2012, there was an increase in contraceptive usage by those who had no education in 2000 (54% versus 33%). This escalation in CPR was related to change in reproductive behavior occasioned by progress in education (Beguy et al., 2017).

The educational status of the spouse also influences use of birth control methods. An uneducated partner has little knowledge on current contraception and therefore cannot make an informed decision on usage. A study by Oketch et al (2011) explained that a

partner with low level of education has little understanding of reproduction matters, benefits of FP and side effects of the methods in practice.

2.7.5 Occupation

Work status of a woman can influence use of contemporary methods of birth control. Most employees need adequate time to go on duty as well as attend to their work at home. There is limited time for them to attend to all these aspects of life and therefore they require to space or limit their deliveries. Unemployed women who stay at home are more vulnerable to unplanned pregnancies. The employed women would seek to reduce the frequency with which they seek maternity leave from their employers. Spacing childbirth would therefore ease the difficulty women face in getting maternity leave. Working women have more chances of adopting FP methods compared to those who stay at home because of unemployment (Oluwasami et al., 2011). A similar research stated that housewives were found to be 5 times more expected to have had unmet need than those respondents who had other jobs (Tobe et al., 2015)

2.7.6 Religion

Religious beliefs play a major role in influencing contraceptive acceptance. The Catholic Church's stance against use of contraceptives influences people's attitudes and practice of FP as it teaches that the principle purpose of a sexual relation within marriage is procreation (Bakibinga et al., 2016). On the other hand, there is no religious prohibition on contraceptive use within a marriage that already has children among protestant Christians and that the decision on family size and utilization of birth control methods is left to the couple. Another study piloted in Cameroon and Senegal by Browne (2012) on impact of religion on women's fertility decision, showed that religion has a strong persuasion on women's FP choice.

In concurrence with the above disclosure, a study in Ethiopia revealed that people who live in rural areas fear consequences of religious messages about FP usage. However, variations exist in the usage of contraception as demonstrated by the research that orthodox Christians and Protestants participated in Family planning more than Muslims (Alemayehu et al., 2012).

2.7.7 Living Children

The number of living children is an important demographic variable that can influence intended or unintended status of births. As women have more children their unmet need for spacing child birth tends to decline, while unmet need for controlling rises (Westoff et al., 2011). In almost every Survey unmet need for regulating rises with the number of living children but the tendency is less consistent for unmet need for spacing (Casterline et al., 2000). A study conducted in Ethiopia showed that women with bigger number of existing children (5 or more) were considerably more likely to have an unmet need for controlling deliveries than those with fewer children (Tobe et al., 2016).

2.7.8 Residential Area

Residential area of women in reproductive age is closely associated with economic factors influencing use of modern contraceptive methods. Use of birth control methods is much higher in developed city centres equated to women in informal settlements. This is basically because developed urban centres enjoy better access to contraceptive services, infrastructural development such as Hospitals with quality care, better education and knowledge about modern contraceptives unlike in informal settlements (Ochako et al., 2016).

2.7.9 Lack of Knowledge on Contraception

Knowledge of modern contraception is a pre requisite for making an informed choice on the usage of birth control methods. Increasing access to contraception and service may not be adequate to meet FP demand. It is more imperative to inform and counsel clients on existing contraceptive methods, usage, assisting in contraceptive switching where necessary and increasing the variety of current methods to improve acceptance of more effective methods (Sedegh et al., 2014). Regrettably, some women have no knowledge nor understanding of the appropriate methods they need to adopt. Furthermore, some do not know where to obtain the various methods of contraception.

2.7.10 Wealth index

Income of the household is one the socioeconomic factors that can influence use of modern contraception. People in the highest wealth quintile own among other items, electronic equipment like Radio and Television sets through which they access information on reproductive health including birth control methods as opposed to those from poor socio economic backgrounds (Kimani et al., 2013).

2.7.11 Exposure of Family Planning Information during Health Facility Visit

Health information through messages provided to women of reproductive age during health facility visit can influence use of modern contraception. Health education equips women with appropriate information which in turn assists those who wish to adopt FP methods. They get enlightened on many health matters including their reproductive rights. An effective program having significant data, education and communication element can decrease the percentage of those who desire to stop or postpone deliveries but are not using any form of contraceptive (Cleland et al., 2014). People living in informal settlements have to travel beyond their neighborhood to

obtain contraceptive information, services and supplies from public institution. This consumes both time and money which are in short supply for slum dwellers (Ehlers et al., 2014). Unmet need for modern contraception ultimately results from inability of these women to access quality FP services. However, recent research has revealed a remarkable growth in the number of females adopting FP methods as a result of exposure to health information gathered from health facilities.

2.7.12 Fear of side effects

Globally, fears about side- effects leads to non- use of contemporary means of birth control because people negatively perceive oral family planning methods to be harmful (Lee et al., 2011). In some parts of the world such as Mexico misconceptions and myths greatly influence contraceptive non- use which makes women switch methods or discontinue them altogether (Cleland et al., 2012). In Africa research has revealed that women view pill utilization as more harmful than pregnancy. According to Bradley, Fishel and Westoff (2012), about 70 percent of women attributed the use of methods such as the pill to increased risk of illness. In SSA, a study by Sedegh and Hussain (2014), revealed that exaggerated and incorrect accounts of side effects is common among women of reproductive age with misunderstanding about health outcomes in both long term and short term as well as harmful label about those utilizing the methods.

In Kenya, it is expected that women aged 19 –24 years have misunderstandings about side effects of new contraceptives, for example, modern contraceptives result in childlessness or damage a woman's womb. On the other hand, a key informant (Village elder) from Langas informal settlement opined that contraceptives could accumulate into a life threatening problem such as giving birth to children with deformities.

2.7.13 Partner's Fertility Preferences

Apparent or real spouse's fecundity inclinations and attitudes to contraception may impact a woman's ability to make an informed choice. A study with DHS statistics from 24 Sub Saharan nations indicated that fecundity predilections were decided upon between couples (Bankole et al 2012). However, when significant differences arose over contraception matters, husband and wife would not practice contraception. Furthermore, a substantial decline in usage of FP services was witnessed in polygamous marriages when their contraceptive desires varied (Machiyama et al., 2017).

A study in Burkina Faso look at the reasons that impede with use of current birth control methods amid matrimonial females. This research revealed that a significantly smaller number of women who use FP with husband's approval had unmet need for contemporary contraception and concluded that man's consent is a significant aspect to contemplate in strategies aimed at reducing non-use of contemporary FP means (Adebowale et al., 2014).

2.7.14 Death of Children in the Family

Death away of children in the family and by extension the community may influence utilization of modern methods of contraception. Whenever deaths of children occur in the family, women will always attempt to replace the lost ones and in some communities where death of children is rampant, women may want to give birth to more children so that some may survive as others die (Wulifan et al., 2019). Women whose children have never died are more likely to practice FP as opposed to those who have an experience of child death (Tobe et al., 2016). The passing away of a daughter was considerably related with non-use of FP methods for women who wish

to stop childbearing while that of a boy was associated with non-use for those who wish to stop or postpone childbirth (Beguy et al., 2017).

2.7.15 Ethnicity

Many studies conducted using demographic Health Survey data have found ethnic differences in the usage of contemporary birth control methods. Women from Coast, Nyanza and rift Valley who desire to postpone deliveries have high likelihood of being non-users of contraceptives (Nyauchi et al., 2014). Comparatively, the Kikuyu, Embu, and Meru ethnic groups have the lowest unmet needs in Kenya (Bakibinga et al., 2016).

2.7.16 Fear of Social Discrimination

Culturally, women may fear social discrimination for using FP services from close relatives and friends, and in some communities, contraception may be taken as a sign of promiscuity (Schuler et al., 2015). The fear for social discrimination and cultural tag ultimately leads to contraceptive non- use hence unmet need for FP. However, exposing this information gap Mwaikambo et al., (2011), supported the use of interventions that increase inter-social communication especially between young people, partners/couples and other members of social peers. This could alleviate social discrimination.

2.8 Comparison of determinants of unmet need for modern contraception between women of reproductive age living in formal and informal settlements

A comparative analysis of factors related to contraceptive method choice was done among formal and informal residents in Nairobi. The study revealed relatively comparable results across both areas of settlement. For instance, it showed that in either estate more working women embraced FP services than the unemployed ones

(Ochako et al., 2016). A similar research on birth control methods conducted in India by Speizer (2012) explained that it was more difficult for slum dwellers to adopt current FP methods compared with those in formal communities.

In a related study conducted in Ethiopia, it was revealed that implanon contraceptive is more accepted than implants among educated women majority of whom reside in formal estates equated with informal ones and were younger with fewer children than implant users (Asnake et al., 2013).

2.9 Summary of literature review (Research Gaps)

According to the literature reviewed, non-use of current birth control methods remains persistently high in informal settlements, a problem attributed to the growing population and inaccessibility of FP services especially among young and poorer segments of the population (KDHS 2014).

Additionally, non-use of FP methods varies from location to location and is determined by certain socio demographic and socioeconomic reasons which are yet to be ascertained in formal and informal settlements of Eldoret, hence the investigation (Gebreselasie et al., 2013).

The urban poor settlers were less likely to accept contemporary means of birth control compared with those living in estates of higher social status (Speizer et al., 2012). However, this research used a small sample that considered slums countrywide and as such the author did not bring out precise city level disparities in slum inhabitants. This study intends to bring out these differences through comparing informal and formal urban regions with a bigger sample.

It has been assumed that urban populations in informal settlements have worse health status when compared with their counterparts residing in formal urban areas of higher social status. The basis of this assumption is that those residing in formal urban areas enjoy physical proximity and assumed better access to FP services than those in informal areas. However, little information is available on what discourages childbearing women from utilizing birth control services within slum and non-slum areas of Eldoret town as no comparison study has been conducted. Langas informal settlement and Old Uganda Road Estate of Eldoret were compared to fill this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter describes research methodology adopted by the investigator. The methodology specifies the general pattern of organizing the procedure for the purposes of investigation. The steps that were followed in gathering and organizing the data collection were, the study design, study area, study population, eligibility criteria, sampling techniques, Sample size calculation, Development of data collection tools, Data collection procedures, Ethical considerations and Data analysis.

3.2 Study design

A descriptive and analytical cross sectional research design using quantitative and qualitative methods of data collection was adopted. This was a comparative study of formal and informal settlements.

3.3 Study area

The study was carried out in the largest informal settlement in Uasin Gishu County namely Langas and Old Uganda Road Estate within Eldoret town.

3.3.1 Langas

Langas is an administrative and electoral unit in County within Eldoret town, located within Wareng Sub County in Kapseret constituency. It is about 10 kilometers from the central business district of Eldoret town and is traversed by Eldoret Kisumu highway. This informal settlement covers 46.5 sq. km with 93,436 people, 47684 male and 45752 female. Out of the 45,752 female, 22,425 are women of reproductive age. It has a young population structure. Langas population is multi ethnic with varying socio demographic and cultural backgrounds.

The main economic activities include small scale business and working as manual laborers in construction sites. The population living below poverty level is 49.0 percent basically due to unemployment, under employment and disempowered groups especially women and youth with limited activities to property and incomes (Household/Budget survey 2005/6).

The major health problems in this area include Malaria (43.4%), Respiratory infections (20.7%), Malnutrition of under 5's (61%) and HIV4.5% (UGCID 2013). The available health facilities in Langas are Racecourse/Langas Hospital (public), Racecourse hospital (private) and Saint Ladislaus Strattmann (catholic). NGO's in the area include Ampath (HIV/AIDS), Mariestopes (Reproductive health), Tunza (condom distribution and advocacy), Hope worldwide (Fp), and CBO's like Tuiyo and Youth self-help group (HIV, condom distribution and health promotion)

3.3.2 Old Uganda Road Estate

Old Uganda Road Estate is a non- slum (formal) residential estate in Eldoret town within Kiplombe ward of Turbo constituency. It is located about 2 kilometers from the central business district along the old Uganda Road, hence the name. This estate is mainly occupied by the middle class group. It has a population of 12,828 of whom 3079 are women of reproductive age. Old Uganda road is multi ethnic. Majority of this population earns their living from formal employment in town while the rest engage in business. A few people who reside in this estate work with Raiply factory located in its neighbourhood.

Residents of Old Uganda Road estate access their health services at Moi Teaching and Referral Hospital, Eldoret west Maternity County Hospital, Uasin Gishu Sub County Hospital, Huruma Sub County Hospital and Umoja private clinic. All these Health

facilities provide reproductive health services including FP. The major health problems here include Malaria, Respiratory tract infections especially pneumonia and HIV.

3.4 Study population

The study population was made up of women of reproductive age (15 to 49) living in informal settlement of Langas and Old Uganda Road Estate in Eldoret, Kenya.

3.5 Inclusion and Exclusion criteria

3.5.1 Inclusion criteria

All women of reproductive age (15 to 49) living in Langas and Old Uganda Road estate. Age 15 – 19 years was included as it constitutes the most vulnerable and high risk group of women.

3.5.2 Exclusion criteria

1. Non fecund women aged 15 to 49 years
2. Visitors to Langas and Old Uganda Road estate i.e. those whose length of stay in these areas was less than 6 months.
3. Mentally incapacitated women within childbearing age.
4. Non-consenting women within child bearing age.

3.6 Sampling Design and Sample size Calculation

3.6.1 Sampling Design

For purposes of data collection and subsequent comparison, sampling was carried out in each study site. Langas was purposively selected as it was the largest informal settlement within Eldoret town in Uasin Gishu County. Old Uganda Road Estate was included in the study as a comparative group (control group). It is a formal residence occupied by middle class people and of higher social status than Langas. It was

selected through simple random sampling (SRS) by writing 8 names of estates within Eldoret town occupied by middle class group of people and balloting them.

Out of the eight villages in Old Uganda Road estate four villages were selected through simple random selection (SRS) by balloting. Names of the eight villages were separately written on pieces of paper and balloted. From the four villages, 311 households were selected through simple Random Sampling. Only one respondent was selected from each household through SRS for interview. Similarly, out of the 22 Villages in Langas informal settlement, four were randomly picked through balloting. Finally, 311 households were identified through SRS from which only one participant per household was randomly selected for interview. The sample was sufficiently representative of the population from the two study sites (see table below).

3.6.2 Calculation of sample size

Sample size was calculated using the formula below (Cochran 1963: 75), (Israel, 1992), (Kish, 1965).

$$\frac{N = (z^2 \times p \times q) \times D}{d^2}$$

Where:

n = Sample size

z = linked to 95 % confidence interval of 1.96 (Z score)

P = Expected prevalence rate (43% = 0.43) Uasin Gishu county

q = I – p = 0.57

d = Relative desired precision of 5 % equivalent to 0.05

D = design effect = 1.5

Design effect (D) = An adjustment made to find a survey sample size due to a sampling method, resulting in larger sample sizes than you would expect with simple random sampling. Design effect gives you the magnitude of these increases.

$$N = \frac{(1.96^2 \times 0.43 \times 0.57)}{0.05^2} \times 1.5$$

= 559 + 10 percent (To carter for possible refusal to participate)

= 565+ 57 = 622/ 2

= 311 each site.

Simple Random Selection of households was carried out from the respective Quarters with the aid of Village heads and CHV's.

Settlement/ Estate	**Langas**	**Old Uganda Road**
No. of Villages	4	4
No. of Households	311	311
Eligible participant	1 client per household (SRS)	1 client per household (SRS)

3.7 Data collection tools

The KDHS 2014 questionnaire (see appendix 1) format on contraception was largely adopted as the basis for tool development after thorough review. The input of some questions from other related studies were factored in. The tool was divided into four parts, I, II, III and IV. Part I collected data on socio demographic characteristics of the study participants. Part II was tailored to gather data on the reproductive history of the respondents while part III collected data on different aspects of contraceptive practice among women. Finally, part IV filtered questions related to attitude on the use of contraception. The qualitative data collection tools comprised of the key informant

interview schedule (see appendix II) and Focus Group Discussion guide (see appendix III).

3.8 Data collection procedures

To ensure quality control for the data, two days were set aside for training data collectors and research assistants. Data collectors were five CHV's and two research assistants for each study area. The training focused on the objective of the study, study population, sampling procedures, the inclusion and exclusion criteria, the data collection tool, interview techniques, data handling and storage. Data was then collected with the aid of a structured questionnaire through self or interviewer administered method. Data collectors were guided by CHV's from study area and village elders to identify households and boundaries. 5 CHV's from each study area were sampled for key informant interviews. Two women Groups, one from Old Uganda estate and the other from Langas informal settlement were enrolled for Focus Group Discussion. Each FGD comprised of 12 members. The FGD interviews were conducted at the West maternity health Centre fields and Langas Health Centre fields respectively. After giving necessary instructions and taking consent, an average of 15 minutes was allocated for answering questions per respondent. FGDs took a minimum of 40 minutes.

3.8.1 Validity of data collection tool

The questionnaire reflected the variables we sought to measure namely dependent and independent variables. Content and construct validity was ensured through evaluation of the tool by experts from nursing fields. Additional suggestions were incorporated in the tool in consultation with the supervisor.

3.8.2 Reliability of the data collection tool

For reliability, a pretest was conducted at Huruma informal settlement with permission from local authorities. The pretest was done outside the study area to avoid bias. This exercise enabled us to find out if the respondents understood the questions well in order to provide needed information. The reliability test conducted using Cronbach's Alpha reported an internal consistency of 0.810. This outcome was acceptable.

3.9 Ethical considerations

Ethical clearance was sought from the National Commission for Science, Technology and Innovation (NACOSTI), Institutional and Ethics Review Committee of Masinde Muliro University of Science and Technology and Uasin Gishu county Commissioner, Director of Education and Health. The purpose and content of the study were fully disclosed to the study participants. An informed consent was sought in writing and verbally from the respondents for the purposes of voluntary participation. No coercion or victimization of any form was done to those who declined to participate. Respondents were free to skip answering questions they were uncomfortable with and they had the right to refuse the interview or any questions asked during the interview. Study participants were assured that information given would only be used for study purposes. Confidentiality and anonymity of the information source was ensured through concealing the identity and contacts of informants. Benefits included receiving free counselling and referral. Assurance was given that the information collected would help the government in improving the health condition of the citizens by formulating appropriate FP policies. Finally, parental or spousal consent was sought for those below 18 years of age. Study

participants under 18 years were allowed to consent for the study in accordance with policy guidelines on unmet need.

3.10 Data processing and analysis

The data was manually checked for completeness and consistency, and then cleaned, coded and entered into SPSS windows version 19 software for analysis. Code numbers used to identify respondents were stored in a password protected computer database. All the paper records containing respondents' information were kept in a locked file cabinet. The dependent variable in the study was unmet need for modern contraception while the major independent variables on the other hand included age, marital status, number of living children, respondent and partner's level of education, Occupation, Religion and partner disapproval.

Descriptive statistics such as mean, median, standard deviation and range were used to describe the socio-demographic characteristics of the study participants like Age, parity and number of living children. Frequencies were used to describe the background variables.

Bivariate analyses followed by multiple logistic regression models were then applied to assess the presence of an association between Independent variables and the Dependent variable (Unmet/ met need for modern contraception). Odds ratios with 95% confidence interval were calculated to test the significance of association between each independent and the dependent variable. P value less than 0.05 was considered statistically significant.

Qualitative data was processed by analyzing themes from key informant interviews and Focused Group Discussions.

CHAPTER FOUR

FINDINGS

4.1 Overview

This chapter provides the results obtained from the survey. These findings include both quantitative and qualitative data. The analyzed data has been interpreted to attach meaning to each of the scores obtained quantitatively. On the other hand, the qualitative data has been summarized and presented using interpretative analysis.

The researcher in this study relied on data from 527 respondents out of 622 who were enrolled for the study making 80% response rate. This study outcome is therefore reliable and acceptable as according to Mugenda and Mugenda (2003), a response rate of 60% is good and a response rate of 70% or more is even better for social research.

4.2 Socio-demographic characteristics of study participants

Table 4.1 shows the socio-demographic characteristics of respondents who participated in the study. A total of 527 female respondents from Langas (50.1%; n=264) and Old Uganda Road Estate (49.9%; n=263) took part in the study. Most of the respondents from Langas (47%) and Old Uganda Road Estate (48.3%) were young and aged between 15 – 24 years. The age groups were not significantly different ($p = 0.8$). The mean age of the former was 26.4 ± 7.5 while the latter had an average age of 25.6 ± 7.0 with no statistically significant difference ($t=1.1$; df: 525; $p = 0.26$). However, there was notable difference in age group at first marriage/union with majority of respondents from Old Uganda Road Estate (93.2%) having been much younger than their counterparts in Langas (83%) with resultant highly

statistically significant mean age difference (t=4.2; df: 525; $p < 0.0001$). With regard to marital status, slightly over three-quarters of respondents in Langas (76.1%) and Old Uganda Road Estate (76.1%) were married. Major statistically significant differences were reported in level of education, religion, number of living children and ethnicity. While majority of respondents from Langas (71.6%) had none or primary education compared to those from Old Uganda Road Estate (58.2%) with statistically significant difference in proportions ($p = 0.001$), there difference in level of education of their partners was not statistically significantly different ($p = 0.5$). On the contrary, there were more Protestant/Traditional female participants from Langas (40.2%) than from Old Uganda Road Estate (30.4%) with statistically significant difference in reported proportions ($p = 0.019$). There was evidence of a real difference in the number of living children between the two groups. Most of the respondents in Langas (96.6%) had less than 4 living children unlike their colleagues in Old Uganda Road Estate (91.3%) with the results being statistically different ($p = 0.01$). A statistically significantly higher (p 0.002) proportion of respondents in Langas (89.4%) were non-Kalenjins in comparison to those in the same category who were residents of Old Uganda Road Estate (79.8%)

Table 4.1: Socio-demographic characteristics of respondents by sub-county of residence

Variable	Response	Langas		Old Uganda Road Estate		P value
		n=264	%	n=263	%	
Age group in years	15 – 24	124	47.0	127	48.3	0.8
	25 – 34	103	39.0	104	39.5	
	≥35	37	14.0	32	12.2	
Mean age±SD (Range) in years		26.4±7.5 (15.0 – 47.0)		25.6±7.0 (15.0 – 47.0)		t=-1.1; df=525; p=0.26
Age group at first marriage/union in years	15 – 24	219	83.0	245	93.2	0.001
	25 – 34	43	16.3	16	6.1	
	≥35	2	0.8	2	0.8	
Mean age at first marriage/union±SD (Range) in years		20.9±4.4 (15.0 – 37.0)		19.4±3.7 (15.0 – 43.0)		t=4.2; df=525; p<0.0001
Marital status	Married	201	76.1	200	76.1	0.98
	Not married	63	23.9	63	24.0	
Level of education of female	None/Primary	189	71.6	153	58.2	0.001
	Secondary	75	28.4	110	41.8	
Level of education of partner	None/Primary	106	40.2	98	37.3	0.50
	Secondary/Tertiary	158	59.8	165	62.7	
Religion	Protestant	106	40.2	80	30.4	0.019
	Catholic/Muslim	158	59.8	183	69.6	
Occupation of respondent	Not employed	124	48.0	121	46.0	0.82
	Employed	140	53.0	142	54.0	
Occupation of partner	Not employed	32	12.1	40	15.2	0.30
	Employed	232	87.9	223	84.8	
No. of living children	<4 children	255	96.6	240	91.3	0.01
	≥4 children	9	3.4	23	8.7	
Ethnicity	Kalenjin	28	10.6	53	20.2	0.002
	Non-Kalenjins	236	89.4	210	79.8	

4.3 Factors associated with unmet needs for limiting births

As explained earlier, unmet need for limiting births was considered as all women who were married and presumed to be sexually active, who were not using any method of contraception and who did not want to have any more children. This excluded those who were separated, divorced or widowed. Results show the prevalence of unmet need for limiting from Langas being 1.1% of 264 respondents compared with 10.6% of 263 respondents from Old Uganda Road Estate. The study examined differences between respondents from Langas and those from Old Uganda Road Estate by examining the limiter groups' socio-demographic, past obstetric history, accessibility and attitude towards modern methods of contraception determinants.

4.3.1 Socio-demographic determinants of unmet need for limiting births

Table 4.2shows socio-demographic factors associated with unmet need for limiting births. There were 31 cases that were identified as limiters giving a prevalence of 5.9%. A statistically significant smaller proportion of respondents aged less than 25 years in Langas had unmet need as opposed to those from Old Uganda Road Estate (OR: 0.1; 95% CI: 0.03 – 0.60; p = 0.0023). Similarly, respondents who were 25 years and above from Langas were less likely to experience unmet need than those from Old Uganda Road Estate (OR: 0.1; 95% CI: 0.01 – 0.48; p = 0.0004). Thus, regardless of age grouping, the likelihood of respondents from having unmet need for limiting births in Langas was lower than those from Old Uganda Road Estate. Significant differences were also noted among married women in terms of unmet need for limiting births. Those who were married and were residents of Langas were less likely to experience unmet need compared to their counter parts in Old Uganda Road (OR: 0.04; 95% CI: 0.005 – 0.303; p < 0.0001).Age was strongly associated with unmet

need for the two groups. As shown in the results, those who were less than 25 years of age and residing in Langas were less likely to have had unmet need in comparison to those from Old Uganda Road Estate (OR: 0.04; 95% CI: 0.01 – 0.30; $p < 0.0001$). This was, however not the case for respondents aged 25 years and above where the difference was not significant ($p = 0.27$).

Four groups of women (Two from each study site) were engaged in focus Group discussion. Thematic analysis revealed that age was an important determinant of unmet need for limiting births both in Langas and Old Uganda Road Estate. Almost an equal number of women from either settlement cited old age as the reason for adopting a modern method of contraception. Those 40 years and above felt they no longer want to get pregnant. A quote from one woman in Langas puts this into perspective:

"Iam 43years old now and really don't think I should give birth anymore because I already have enough children. I decided to use the injection to control childbearing" (*Woman L8).*

Further analysis on level of education of respondent and their partner shows statistically significant results between residents in the two study areas. Unmet need for limiting births was less common among women with none or primary school from Langas than their colleagues from Old Uganda Road Estate (OR: 0.1; 95% CI: 0.02 – 0.52; $p < 0.0008$). This was equally true for respondents with secondary school education and above where Langas residents, again, were less likely to have had unmet need unlike their contemporaries from Old Uganda Road Estate (OR: 0.04; 95% CI: 0.01 – 0.67; $p = 0.004$). Partner education also had a statistically significant influence on respondents experiencing unmet need. In Langas, where partners had no or primary education, the likelihood of experiencing unmet need was lower compared

to respondents from Old Uganda Road Estate (OR: 0.03; 95% CI: 0.01 – 0.28; p < 0.0001). This was not the case for those with partners had attained a minimum of secondary education (p 0.43). Although, unemployment of respondent was not significantly associated with unmet need for limiting births (p = 0.33), employment of partner played a significant role in determining whether respondents had unmet need or not. Respondents from Langas whose partners were employed were less likely to experience unmet need than those from Old Uganda Road Estate (OR: 0.01; 95% CI: 0.03 – 0.33; p < 0.0001). Religious affiliation, whether Protestant/Traditional or Catholic/Muslim, had significant association with respondents experiencing unmet need with a significantly smaller proportion of Protestant/Traditional (OR: 0.05; 95% CI: 0.01 – 0.38; p < 0.0001) and Catholic/Muslim (OR: 0.1; 95% CI: 0.03 – 0.64; p < 0.003) respondents from Langas having had unmet need. Those with less than 4 living children from Langas were also less likely to have had unmet need (OR: 0.1; 95% CI: 0.03 – 0.31; p < 0.0001) than colleagues from Old Uganda Road Estate. Ethnicity too was a factor influencing unmet need for limiters as evidenced by a significantly smaller proportion of non-Kalenjins who were residents of Langas than their counterparts living in Old Uganda Road Estate (OR: 0.1; 95% CI: 0.03 – 0.37; p < 0.003)

During a key informant interview with a Community Health volunteer in Old Uganda Road Estate, it was revealed that men who were in salaried employment were not supportive enough to their spouses in matters FP as they could comfortably support their families. Consequently most did not support use of FP by their spouses. A quote from a community health volunteer from Old Uganda road puts this into perspective:

"Most men in this Estate are employed and believe they can comfortably support their families and as such don't support their spouses in FP matters" (CHV OUR 4)

Table 4. 2: Socio-demographic factors associated with unmet need for limiting births

Confounders	Explanatory variable	Unmet need (%)	No unmet need (%)	Total (n)	OR	95% CI	p value
<25 years age group	Langas	1.6	98.4	124	0.1	0.03 – 0.60	**0.0023**
	Uganda Road Estate	11.0	89.0	127			
≥25 years age group	Langas	0.7	99.3	140	0.1	0.01 – 0.48	**0.0004**
	Uganda Road Estate	10.3	89.7	136			
Married	Langas	0.5	99.5	201	0.04	0.005 –0.303	**<0.001**
	Uganda Road Estate	11.0	89.0	200			
<25 years at the time of marriage/union	Langas	0.5	99.5	201	0.04	0.01 – 0.30	**<0.001**
	Uganda Road Estate	11.0	89.0	200			
None or primary education (Respondent)	Langas	1.1	98.9	189	0.1	0.02 – 0.52	**0.0008**
	Uganda Road Estate	8.5	91.5	153			
Secondary and above (Respondent)	Langas	1.3	98.7	75	0.1	0.01 – 0.67	0.004
	Uganda Road Estate	13.6	86.4	110			
None or primary education (Partner)	Langas	0.6	99.4	158	0.03	0.01 – 0.28	**<0.001**
	Uganda Road Estate	14.6	85.4	165			
Employed (Partner)	Langas	1.3	98.7	232	0.1	0.03 – 0.33	**<0.001**
	Uganda Road Estate	11.7	88.3	223			
Protestant/Traditional	Langas	0.9	99.1	106	0.05	0.01 – 0.38	**<0.001**
	Uganda Road Estate	16.3	83.7	80			
Catholic/Muslim	Langas	1.3	98.7	158	0.1	0.03 – 0.64	**0.003**
	Old Ug. road	8.2	91.8	183			
Less than 4 children	Langas	1.2	98.8	255	0.1	0.03 – 0.31	**<0.001**
	Uganda Road Estate	11.3	88.7	240			
Non-Kalenjins	Langas	1.3	98.7	236	0.1	0.03 – 0.37	**<0.001**
	Uganda Road	10.5	89.5	210			

	Estate						

4.3.2 past obstetrical determinants of unmet need for limiting births

Having ever been pregnant was significantly related to unmet need for respondents from Langas and those from Old Uganda Road Estate where mothers from Langas were less likely to have experienced unmet need (OR: 0.04; 95% CI: 0.005 – 0.295; $p < 0.0001$). Having not been pregnant, on the other hand, did not have any influence on unmet need when the two groups were compared ($p = 0.28$). The number of previous pregnancies was highly significantly associated with unmet need among Langas and Old Uganda Road Estate residents. Mothers with less than 4 previous pregnancies in Langas were less likely to experience unmet need than those in the same category and who were residents of Old Uganda Road Estate (OR: 0.04; 95% CI: 0.005 – 0.283; $p < 0.0001$). This was not true of mothers who had 4 or more previous pregnancies where the difference was non-significant ($p = 0.31$). Results also show that mothers from Langas aged less than 25 years were less likely to have had unmet need unlike their colleagues from the affluent estate (OR: 0.05; 95% CI: 0.006 – 0.348; $p < 0.0001$). On the contrary, those aged 25 years and above showed no statistically significant difference ($p = 0.09$). A significantly smaller proportion of mothers from Langas who did not want to get pregnant had unmet need compared to the same group but who were residents of Old Uganda Road Estate (OR: 0.1; 95% CI: 0.02 – 0.35; $p < 0.0001$). However, no statistically significant associated was found among those who wanted to get pregnant for the two groups of respondents residing in the two study areas ($p = 0.18$).

Whereas there was no significant association between menses not having resumed for Langas and Old Uganda Road residents ($p = 0.28$), significant association was

demonstrated among respondents whose menses had resumed. Residents from Langas whose menses had resumed were less likely to have had unmet need in comparison to their counterparts (OR: 0.04; 95% CI: 0.005 – 0.295; p < 0.0001). Concerning past obstetric history, results show that even though history of previous miscarriage, abortion or stillbirth were not determinants of unmet need (0.15), past history of normal birth was associated with unmet need where a significantly smaller proportion of respondents from Langas had unmet need in comparison to those from Old Uganda Road Estate (OR: 0.04; 95% CI: 0.006 – 0.323; p < 0.0001).

Table 4. 3: Past obstetric history determinants of unmet needs for limiting births

Confounders	**Explanatory Variable**	**Unmet need (%)**	**No unmet need (%)**	**Total (n)**	**OR**	**95% CI**	**P value**
Has ever been pregnant	Langas	0.4	99.6	226	0.04	0.005 – 0.295	**<0.0001**
	Uganda Road Estate	10.1	89.9	217			
< 4 previous pregnancies	Langas	0.5	99.5	217	0.04	0.005 – 0.283	**<0.0001**
	Uganda Road Estate	10.9	89.1	192			
<25 years when got first pregnant	Langas	0.5	99.5	184	0.05	0.006 – 0.348	**<0.0001**
	Uganda Road Estate	10.6	89.4	199			
Did not want to get pregnant	Langas	1.6	98.4	128	0.1	0.02 – 0.35	**<0.0001**
	Uganda Road Estate	16.4	83.6	146			
Menses has resumed	Langas	0.4	99.6	226	0.04	0.005 – 0.295	**<0.0001**
	Uganda Road Estate	10.1	89.9				
No history of previous miscarriage, abortion or stillbirth	Langas	0.8	99.2	123	0.04	0.006 – 0.323	**<0.0001**
	Uganda Road Estate	16.1	83.9				

Reasons why respondents are not using a method to prevent pregnancy

Respondents were also asked to state reasons why they were not using a method to prevent pregnancy and results presented in Figure 4.1. The proportion who were currently pregnant and were residents of Langas (31.4%; n=83) was comparable with those from Old Uganda Road Estate (34.6%; n=91). Among those who were not currently pregnant, 23.8% (n=43) from Langas stated that modern FP methods were harmful to health compared with 24.9% (n=43) from Old Uganda Road Estate who were on a similar view.

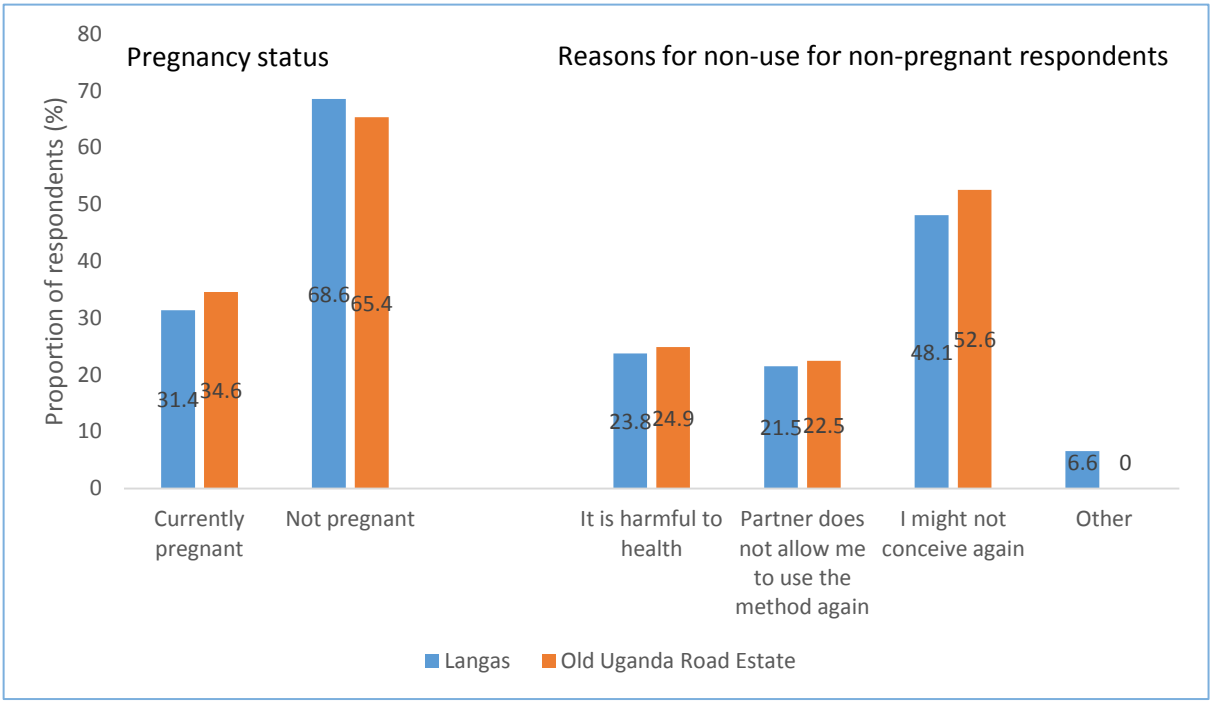


Figure 4. 1: Reasons why respondents are not using a method to prevent pregnancy

Practice of contraceptive methods

Table 4.4 presents results on the current practice of contraceptive methods by comparing respondents from Langas and those from Old Uganda Road Estate. The prevalence of current users was significantly higher among Langas residents (22%)

compared with those from Old Uganda Road Estate (12.2%) with $p < 0.0001$. The proportion of non-users was lower among Langas residents (16.3%) compared with those from Old Uganda Road Estate (37.3%). There was a significant difference in the mean age when respondent first started using FP method with the group of respondents from Old Uganda Road Estate being younger ($t = 3.7$; df: 378; $p = 0.05$). There were significant differences on reasons why respondents were not using any method. More than half (53.5%) of Langas residents expressed fear of side effects compared with 17.3% of those from Old Uganda Road Estate. Most of the spouses of respondents from the latter seemed did not approve in contrast to 23.3% respondents from Langas who shared the same view. The FP methods commonly used were pills and Injectable. The prevalence of pill use in Langas was 35% while that of Injectable was 36.4%. This is in comparison to pill use of 31.9% and Injectable use of 35.5% in Old Uganda Road Estate. There were no significant differences in method of contraceptive use between the two groups ($p = 0.67$).

Evidently, majority of those who are currently using a method use it for spacing as reported by respondents from Langas (82.8%) and from Old Uganda Road Estate (72.7%). For both groups, the leading FP methods currently used are pills and IUCD as is reported by respondents from Langas and Old Uganda Road Estate residents.

Interestingly, same proportion of respondents from Langas (82.8%) and from Old Uganda Road Estate (72.7%) were told about the side effects of the method being used, what to do when they experience side effects, FP methods that respondent could use and also other methods that when they obtained the current method. This suggests that the respondents were given similar information while attending FP services in the facilities by service providers.

Table 4. 4: Practice of contraceptive methods

Variable	**Response**	**Langas**		**Old Uganda Road Estate**		**P value**
		n=264	**%**	**n=263**	**%**	
Contraceptive practice	Current user	58	22.0	32	12.2	<0.0001
	Ever user/ No longer giving birth	163	61.7	133	50.6	
	Non-user	43	16.3	98	37.3	
	Total	264	100.0	263	100.0	
Mean ± SD (Range) age when first started using FP method		21.5±4.4 (15 – 37)		19.9±3.8 (15 - 43		t=-3.7 df=378 p=0.05
Why not using any method	Spouse does not approve	10	23.3	46	44.2	<0.0001
	Against religious teachings	2	4.6	22	21.1	
	Fear of side effects	23	53.5	18	17.3	
	Lack of access	8	18.6	18	17.3	
	Total	43	100.0	104	100.0	
FP method used then	Pill	77	35.0	53	31.9	0.67
	IUCD	32	14.6	30	18.1	
	Injectable	80	36.4	59	35.5	
	Implant	0	0.0	1	0.6	
	Condom	31	14.1	23	13.9	
	Total	220	100.0	166	100.0	
Purpose for using FP method currently	Spacing birth	48	82.8	24	72.7	0.26
	Limiting birth	10	17.2	9	27.3	
	Total	58	100.0	33	100.0	
Type of method being used currently	Pill	30	51.7	16	48.5	0.26
	IUCD	22	37.9	14	42.4	
	Injectable	3	5.2	0	0.0	
	Implant	3	5.2	3	9.1	
	Total	58	100.0	33	100.0	
Told about the side effects of the method being used	Yes	48	82.8	24	72.7	0.26
	No	10	17.2	9	27.3	
	Total	58	100.0	33	100.0	
Told what to do when experience side effects	Yes	48	82.8	24	72.7	0.26
	No	10	17.2	9	27.3	
	Total	58	100.0	33	100.0	
Told about the FP methods she could use	Yes	48	82.8	24	72.7	0.26
	No	10	17.2	9	27.3	
	Total	58	100.0	33	100.0	
Told others FP methods when obtained current methods	Yes	48	82.8	24	72.7	0.26
	No	10	17.2	9	27.3	
	Total	58	100.0	33	100.0	

4.3.3 Bivariate logistic analysis on accessibility factors associated with unmet need for limiting births

Table 4.5 shows results of bivariate analysis on accessibility factors associated with unmet need. Getting supplies from other sources had lower odds unmet need for respondents from Langas compared with women from Old Uganda Road Estate (OR: 0.04; 95% CI: 0.005 – 0.278; $p < 0.0001$). On the contrary, getting supply from hospital or other health institution was not associated with unmet need for residents of Langas ($p = 0.433$). In terms of getting FP methods when due and unmet need, Langas residents still had statistically significantly lower odds than their colleagues from Old Uganda Road Estate (OR: 0.1; 95% CI: 0.03 – 0.32; $p <0.0001$). Respondents from Langas were also less likely to experience unmet need among those who do not use any method when they run out of supply (OR: 0.07; 95% CI: 0.01 – 0.52; $p = 0.0007$).Further evidence also shows that those who use other methods from Langas were less likely to experience unmet need for limiters compared with their counterparts from the formal settlement (OR: 0.12; 95% CI: 0.03 – 0.55; $p = 0.001$).

Among respondents who agreed that hospital is the most convenient place to get FP method, the chances of meeting unmet need classification was lower for the Langas group than those from Old Uganda Road Estate respondents (OR: 0.04; 95% CI: 0.005 – 0.278; $p < 0.0001$). This was not true of those who professed that other places were most convenient to get FP methods with the odds being non-statistically significant ($p = 0.433$).

Table 4. 5: Bivariate logistic analysis on accessibility factors that are associated with unmet needs

Confounders	Explanatory variable	Unmet need (%)	No unmet need (%)	Total (n)	OR	95% CI	P value
Gets supply from hospital/health institution	Langas	3.6	96.4	55	0.5	0.1 – 2.6	0.433*
	Uganda Road Estate	7.6	92.4	53			
Gets supply from other sources	Langas	0.5	99.5	209	0.04	0.005 - 0278	**<0.0001**
	Uganda Road Estate	11.4	88.6	210			
Gets FP methods when due	Langas	1.1	98.9	264	0.1	0.03 – 0.32	**<0.0001**
	Uganda Road Estate	10.6	89.4	263			
Do not use any method when they do not have supply	Langas	0.8	99.2	130	0.07	0.01 – 0.52	**0.0007**
	Uganda Road Estate	10.3	89.7	146			
Uses other methods	Langas	1.5	98.5	134	0.12	0.03 – 0.55	**0.001**
	Uganda Road Estate	11.1	88.9	117			
Hospital most convenient place to get FP method	Langas	0.5	99.5	209	0.04	0.005 – 0.278	**<0.0001**
	Uganda Road Estate	11.4	88.6	210			

*Fisher's Exact Test

4.3.4 Bivariate logistic analysis on attitudinal factors that are associated with unmet needs for limiting births

Table4.6 presents bivariate logistic analysis on attitudinal factors that are associated with unmet need by comparing the two groups of respondents from Langas and Old Uganda Road Estate. There was statistically significant association between respondents who claimed that refusal by partner was the main reason hindering them from use of FP method, the odds being much lower for women from Langas compared with those from Old Uganda Road Estate (OR: 0.11; 95% CI: 0.02 – 0.46; p < 0.0003). The same was true even for mothers from Langas who stated that other factors were the main reason that hindered their use of FP method with equally lower odds ratio (OR: 0.09; 95% CI: 0.01 – 0.71; p < 0.007). The chances of respondents from Langas experiencing unmet need among those who discuss FP methods with partner was lower with results being highly statistically significant (OR: 0.04; 95% CI: 0.005 – 0.334; p < 0.0001). For those who do not discuss with partner, the odds were still lower for Langas group but with marginally statistically significant results (OR: 0.24; 95% CI: 0.05 – 1.17; p = 0.06).Respondents from Langas who discussed with partners less often about FP methods had lower odds of unmet need in comparison to corresponding colleagues from Old Uganda Road Estate (OR: 0.13; 95% CI: 0.04 – 0.46; p = 0.0002). The same findings were noted on respondents from Langas whose husbands approved use of FP method where a significantly smaller proportion experienced unmet need (OR: 0.04; 95% CI: 0.005 – 0.334; p < 0.0001). However, the association between women whose husbands did not approve the use of FP methods and who were from Langas was marginally statistically significant (OR: 0.25; 95% CI: 0.05 – 1.17; p = 0.06). The odds were lower for respondents from Langas whose community approved use of FP (OR: 0.10; 95% CI: 0.03 – 0.32; p < 0.0001), whose traditional/ cultural beliefs are not against use of FP (OR: 0.11; 95% CI: 0.03 – 0.39; p < 0.0001), who get information on FP methods (OR: 0.1; 95% CI:

0.03 – 0.32; p < 0.0001), who get information from non-health institutions (OR: 0.10; 95% CI: 0.03 – 0.33; p < 0.0001) and those who were not comfortable talking to husband if needs to ask about FP methods (OR: 0.1; 95% CI: 0.03 – 0.33; p <0.0001). However, there was no statistically significant association between women from Langas whose husbands decided the number of children that they should have (p = 0.33).

Table 4. 6: Bivariate logistic analysis on attitudinal factors that are associated with unmet needs

Confounders	Explanatory variable	Unmet need (%)	No unmet need (%)	Total (n)	OR	95% CI	P value
Refusal by partner as main reason hindering use of FP method	Langas	1.5	98.5	134	0.11	0.02 – 0.46	**0.0003**
	Uganda Road Estate	12.6	87.4	151			
Other factors as main reason hindering use of FP method	Langas	0.8	99.2	130	0.09	0.01 – 0.71	**0.007**
	Uganda Road Estate	8.0	92.0	112			
Discuss with partner	Langas	0.5	99.5	199	0.04	0.005 – 0.334	**<0.0001**
	Uganda Road Estate	10.3	89.7	175			
Does not discuss with partner	Langas	3.1	96.9	65	0.24	0.05 – 1.17	0.06
	Uganda Road Estate	11.4	88.6	88			
Discuss with partner less often	Langas	1.8	98.2	163	0.13	0.04 – 0.46	**0.0002**
	Uganda Road Estate	12.2	87.85	181			
Husband approves use of FP method	Langas	0.5	99.5	199	0.04	0.005 – 0.334	**<0.0001**
	Uganda Road Estate	10.3	89.7	175			
Husband does not approve	Langas	3.1	96.9	65	0.25	0.05 – 1.17	0.06
	Uganda Road Estate	11.4	88.6	88			
Community approves use of FP	Langas	1.1	98.9	264	0.10	0.03 – 0.32	**<0.0001**
	Uganda Road Estate	10.6	89.4	263			
Traditional/Cultural beliefs are not against use of FP methods	Langas	1.4	98.6	218	0.11	0.03 – 0.39	**<0.0001**
	Uganda Road Estate	10.8	89.2	213			
Gets information on FP methods	Langas	1.1	98.9	264	0.1	0.03 – 0.32	**<0.0001**
	Uganda Road Estate	10.6	89.4	263			
Gets information from non-health institutions	Langas	1.3	98.7	228	0.1	0.03 – 0.33	**<0.0001**
	Uganda Road Estate	11.8	88.2	238			
Not comfortable talking to husband if needs to ask about FP methods	Langas	1.3	98.7	228	0.1	0.03 – 0.33	**<0.0001**
	Uganda Road Estate						

Reasons why modern contraceptive methods are not approved

Respondents were asked reasons why modern contraceptive methods are not approved. The stated reasons are presented in Figure 4.2. Among respondents from Langas, the two leading reasons why traditional beliefs are against contraceptives are pills kill children in the womb (60%) and FP methods are harmful to health (33.3%). The same pattern was seen in the responses for the same question as answered by respondents from Old Uganda Road Estate where 68% and 32% were of similar view, respectively. Majority of respondents from Langas gave no reason why partner does not approve of FP methods (89.6%) compared to 79.6% of their colleagues from the formal settlement.

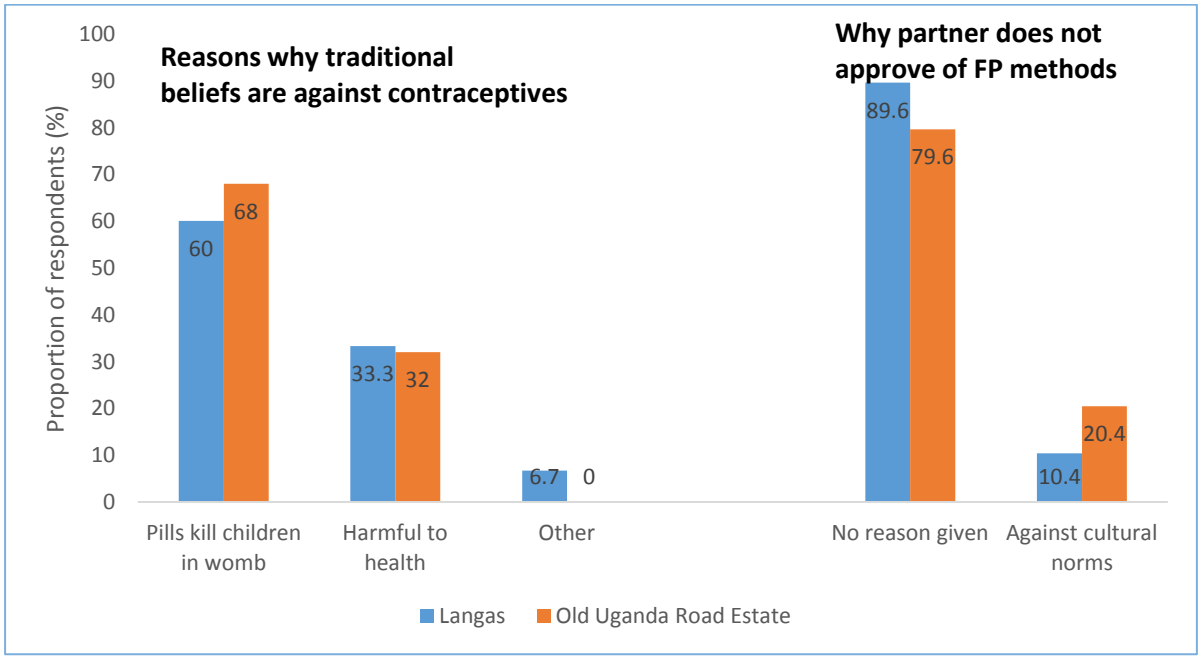


Figure 4. 2 Reasons why modern contraceptive methods are not approved

Overall, results on bivariate analysis on factors associated with unmet need which compares respondents from Langas and those from Old Uganda Road Estate show that a significantly smaller proportion of Langas residents experienced unmet need for limiting births as opposed to their colleagues from Old Uganda Road Estate.

4.4 Factors associated with unmet need for spacing births

The results presented represent spacers or those who want more children but not for at least two more years and who have been considered to have unmet need for spacing birth. Out of 264 respondents from Langas, 24 (9.1%) were spacers compared to 15 out of 263 (5.7%) from Old Uganda Road Estate. The study examined differences between respondents from Langas and those from Old Uganda Road Estate by examining the spacer groups' socio-demographic, past obstetric history, accessibility and attitude towards modern methods of contraception determinants

4.4.1 Bivariate analysis on socio-demographic determinants of unmet need for spacing births

Table 4.7 shows results of bivariate analysis with unmet need for spacing births as the outcome and informal and formal settlements as explanatory factors controlling for socio-demographic characteristics which were considered as possible confounders. The results of the odds ratio analysis indicate that age less than 25 years (OR: 2.2; 95% CI: 1.0 – 4.6; p = 0.04), being not married (OR: 3.7; 95% CI: 1.5 – 8.8; p = 0.002), respondent having attained secondary education and above (OR: 4.0; 95% CI: 1.5 – 10.9; p = 0.004), partner having had no or primary education (OR: 3.6; 95% CI: 1.5 – 8.8; p = 0.003) and respondent not being employed (OR: 2.8; 95% CI: 1.1 – 6.9; p = 0.02) are factors that are significantly associated with increased unmet need for spacing births among respondents from Langas. Having been less than 25 years at the time of marriage/union (OR: 1.9; 95% CI: 1.0 – 3.9; p = 0.06), partner being employed (OR: 1.9; 95% CI: 0.9 – 3.8; p = 0.08) and being a Catholic/Muslim (OR: 2.0; 95% CI: 0.9 – 4.4; p = 0.07) were marginally statistically significantly associated with increased unmet need for spacers from Langas. On the other hand, there was decreased unmet need for women from Langas where partner had attained at least

secondary school (OR: 0.1; 95% CI: 0.01 – 1.01; p = 0.04). Respondents from Langas with a minimum of secondary education were four times more likely to have had unmet need for spacing births compared with those from Old Uganda Road Estate. Likewise, those from Langas who were not married were 3.7 times likely to have had unmet need as spacers unlike their counterparts. Where a partner did not have any education of primary education, women from Langas were 3.6 fold increased need for spacing births. Lack of employment among Langas women also increased the odds for unmet need for spacing by 2.8 times while among those aged less than 25 years and residents of Langas had double increased in the odds of having unmet need for spacing.

Focus Group discussions were held among groups of women of reproductive age, two from Langas and two from Old Uganda Road Estates on matters contraception and unmet need. Each group comprised of 12 members of various age groups between 15 and 45 years. Talks from the groups shared similar themes that supported some socio-demographic factors that influence contraceptive use and non-use among women who still desired to give birth to more children. Although the groups shared similar views, the group from Old Uganda Road was more emphatic. In reference to employment, a woman from Langas said that *"FP enables mothers to participate in other matters"* while her counterpart from Old Uganda Road said thus:

"Over seventy percent of women of reproductive age in this community are young adult women most of who are in formal employment and have to space their children".

In regard to age, a key informant from Old Uganda Road added that, *"A sizeable group of young women from this community buy contraceptives off the counter and drug vendors but all these does not go into "our records*

Table 4. 7: Bivariate analysis on socio-demographic determinants of unmet needs for spacing births

Confounders	**Explanatory Variable**	**Unmet need (%)**	**No unmet need (%)**	**Total (n)**	**OR**	**95% CI**	**P value**
<25 years age group	Langas	18.6	81.4	124	2.2	1.0 – 4.6	**0.04**
	Uganda Road Estate	9.4	90.6	127			
<25 years at the time of marriage/union	Langas	10.5	89.5	219	1.9	1.0 – 3.9	0.06
	Uganda Road Estate	5.7	94.3	245			
Not married	Langas	38.1	61.9	63	3.7	1.5 – 8.8	**0.002**
	Uganda Road Estate	14.3	85.7	63			
Secondary and above (Respondent)	Langas	18.7	81.3	75	4.0	1.5 – 10.9	**0.004**
	Uganda Road Estate	5.4	94.6	110			
None or primary education (Partner)	Langas	21.7	78.3	106	3.6	1.5 – 8.8	**0.003**
	Uganda Road Estate	7.1	92.9	98			
Secondary and above (Partner)	Langas	0.6	99.4	158	0.1	0.01 – 1.01	**0.04**
	Uganda Road Estate	4.9	95.1	165			
Not employed (Respondent)	Langas	14.5	85.5	124	2.8	1.1 – 6.9	**0.02**
	Uganda Road Estate	5.8	94.2	121			
Employed (Partner)	Langas	10.3	89.7	232	1.9	0.9 – 3.8	0.08
	Uganda Road Estate	5.8	94.2	223			
Catholic/Muslim	Langas	11.4	88.6	158	2.0	0.9 – 4.4	0.07
	Uganda Road Estate	6.0	94.0	183			

4.4.2 Bivariate analysis on past obstetric history factors that are associated with unmet needs for spacing births

Table 4.8shows results on bivariate analysis on the association between unmet needs for spacing births and past obstetric history of respondents. Six past obstetric history variables were significantly associated with unmet need among women who were residents of Langas. Women who had not ever been pregnant and coming from Langas were 5 fold more likely to have had unmet need for spacing (OR: 5.3; 95% CI: 2.0 – 14.3; p = 0.0006). Having had at least 4 previous pregnancies increased the chances of unmet need by 6 times (OR: 5.8; 95% CI: 2.3 – 14.9; p < 0.0001). Those who did not want to get pregnant(OR: 3.1; 95% CI: 1.4 – 6.9; p = 0.003) and those who when they got pregnant wanted to get it later (OR: 3.3; 95% CI: 1.4 – 7.5; p = 0.003) were three-fold more likely to have had unmet need for spacing. Similarly, women from Langas whose menses had not resumed (OR: 5.3; 95% CI: 2.0 – 14.3; p = 0.0006) and those with no history of previous miscarriage, abortion or stillbirth(OR: 2.8; 95% CI: 1.3 – 6.1; p = 0.01) were 5 and 3 times increased odds of having unmet need for spacing.

Key informant interviews from Langas and Old Uganda Road showed that past obstetrical history was a significant determinant of unmet need for spacing births. A key informant from Langas reported that*, "Most women were not ready for pregnancy but since it was there first time to conceive, they decide to give birth anyway."*(CHV 4)

Compared with their counterparts from Old Uganda Road Estate, a key informant from Old Uganda Road reported that *"Majority of the young women in that community are either newly married, in school or college. "Most of those in schools and colleges use Oral pills and male condoms to prevent pregnancy"* (CHV 2).

Table 4. 8: Bivariate analysis on past obstetric history factors that are associated with unmet needs for spacing births

Confounders	**Explanatory Variable**	**Unmet need (%)**	**No unmet need (%)**	**Total (n)**	**OR**	**95% CI**	**P value**
Has ever been pregnant	Langas	1.8	98.2	226	0.5	0.2 – 1.9	0.3
	Uganda Road Estate	3.2	96.8	217			
Has not ever been pregnant	Langas	52.6	47.4	38	5.3	2.0 – 14.3	**0.0006**
	Uganda Road Estate	17.4	82.6	46			
≥4 previous pregnancies	Langas	42.6	57.4	47	5.8	2.3 – 14.9	**<0.0001**
	Uganda Road Estate	11.3	88.7	71			
Did not want to get pregnant	Langas	18.7	81.3	128	3.1	1.4 – 6.9	**0.003**
	Uganda Road Estate	6.8	93.2	146			
When got pregnant, wanted later	Langas	12.6	87.4	191	3.3	1.4 – 7.5	**0.003**
	Uganda Road Estate	4.2	95.8	191			
Menses has not resumed	Langas	52.6	47.4	38	5.3	2.0 – 14.3	**0.0006**
	Uganda Road Estate	17.4	82.6	46			
No history of previous miscarriage,	Langas	17.9	82.1	123	2.8	1.3 – 6.1	**0.01**
	Uganda Road Estate	7.3	92.7	137			

abortion or stillbirth							

4.4.3 Bivariate analysis on the association between accessibility of contraceptive methods among birth spacers and unmet need

Table 4.9 shows results on bivariate analysis on factors associated with accessibility of FP methods and unmet need for spacers. Only two factors came out as statistically significantly associated with unmet need among women in Langas compared with those from Old Uganda Road Estate. Women from Langas who were getting supply from hospital/health institution and those who stated that hospital is the most convenient place to get FP method had almost four times unmet need (OR: 3.8; 95% CI: 1.4 – 9.9; p = 0.006) compared to those from the formal settlement.

Focus Group discussion conducted among four groups in the study sites revealed that women from Langas informal settlement complained of distance between where they stay and the nearest government health facilities. On the other hand women from the formal settlement of Old Uganda Road Estate did not raise any concern regarding accessibility to contraceptive methods. One middle aged woman from Langas in formal settlement complained that:

"*The nearest government health facilities where we can get contraceptive methods and supplies free of charge are many kilometers away and it is expensive to travel all along"* (Woman L8)

Additionally, a key informant from Langas reported that there was overcrowding in government health facilities leading to long queues and consequently long waiting time for clients.

Table 4. 9: Bivariate analysis on accessibility factors that are associated with unmet needs for spacing births

Confounders	Explanatory Variable	Unmet need (%)	No unmet need (%)	Total (n)	OR	95% CI	P value
Gets supply from hospital/health institution	Langas	36.4	63.6	55	3.8	1.4 – 9.9	**0.006**
	Uganda Road Estate	13.2	86.8	53			
Hospital most convenient place to get FP method	Langas	36.4	63.6	55	3.8	1.4 – 9.9	**0.006**
	Uganda Road Estate	13.2	86.8	53			
Other places are most convenient to get FP method	Langas	1.9	98.1	209	0.5	0.1 – 1.7	0.2
	Uganda Road Estate	3.8	96.2	210			
Example of one of the advantages of method is for limiting births	Langas	6.4	93.6	141	1.8	0.6 – 5.6	0.3
	Uganda Road Estate	3.6	96.4	138			
Example of one of the advantages of method is for spacing births	Langas	12.2	87.8	123	1.6	0.7 – 3.7	0.3
	Uganda Road Estate	8.0	92.0	125			

4.4.4 Bivariate analysis: association between respondent's attitude towards modern methods of contraception and unmet need for spacing births

As shown in table 4.10 that presents results on the association between respondent's attitude towards modern methods of contraception and unmet need for spacing births, several factors were significantly associated with respondent's attitude towards modern FP methods and unmet need for Langas respondents. Refusal by partner as main reason hindering use of FP methods increased the odds by 3.5 (OR: 3.5; 95% CI: 1.5 – 8.2; p = 0.002). Respondents who did not discuss with partners were also 5 times more likely to have had unmet need (OR: 5.1; 95% CI: 2.1 – 12.5; p = 0.0001) with the odds reaching a maximum of 12.5. Similarly, respondents from the same informal settlement who less often discuss with partner were 2.3 times more likely to have had unmet need (OR: 2.3; 95% CI: 1.1 – 4.8; p = 0.02). Equally important were cases where husband did not approve where such respondents had a five-fold increase in odds of having unmet need (OR: 5.1; 95% CI: 2.1 – 12.5; p = 0.0001). Likewise, respondents from Langas who stated that their husbands decide the number of children she should have were almost 3 times more likely to experience unmet need for spacing births compared with mothers from Old Uganda Road Estate (OR: 2.8; 95% CI: 1.1 – 6.9; p = 0.02).

Focus Group Discussions conducted in both Langas and Old Uganda Road Estates showed that majority of women did not receive approval from their husbands to practice FP. Additionally; majority of women from Langas reported that their husbands are not aware of their FP status. Several admitted that their husbands/ partners did not know what type of FP method they were using

"*If my husband gets to know that I am using a family planning method it could easily cost my marriage" (Woman L 11)*

Table 4. 10: Bivariate analysis: association between respondent's attitude towards modern methods of contraception and unmet need for spacers

Confounders	Explanatory Variable	Unmet need (%)	No unmet need (%)	Total (n)	OR	95% CI	P value
Refusal by partner as main reason hindering use of FP method	Langas	16.4	83.6	134	3.5	1.5 – 8.2	**0.002**
	Uganda Road Estate	5.3	94.7	151			
Discuss with partner	Langas	1.0	99.0	199	0.2	0.05 – 1.19	0.09
	Uganda Road Estate	4.0	96.0	175			
Does not discuss with partner	Langas	33.9	66.1	65	5.1	2.1 – 12.5	**0.001**
	Uganda Road Estate	9.1	90.9	88			
Discuss with partner less often	Langas	14.1	85.9	163	2.3	1.1 – 4.8	**0.02**
	Uganda Road Estate	6.6	93.4	181			
Husband approves use of FP method	Langas	1.0	99.0	199	0.2	0.05 – 1.19	0.09
	Uganda Road Estate	4.0	96.0	175			
Husband does not approve	Langas	33.9	66.1	65	5.1	2.1 – 12.5	**0.0001**
	Uganda Road Estate	9.1	90.9	88			
Traditional/Cultural beliefs are not against use of FP methods	Langas	10.1	89.9	218	1.9	0.9 – 3.9	0.09
	Uganda Road Estate	5.6	94.4	213			
Husband decides the number of children she should have	Langas	14.5	85.5	124	2.8	1.1 – 6.9	**0.02**
	Uganda Road Estate	5.8	94.2	121			
Others decide the number of children she should have	Langas	4.3	95.7	140	0.8	0.3 – 2.2	0.6
	Uganda Road Estate	5.6	94.4	142			

4.5 Comparison of the determinants of unmet need for modern contraception among women of reproductive age living in formal and informal settlements of Eldoret

4.5.1 Determinants of unmet need for limiting births

4.5. 2 Socio-demographic determinants of unmet need for limiting births

Multiple logistic regression was performed where place of residence and socio-demographic characteristics were used as explanatory variables and unmet need for limiting births as outcome or response variable.

Table 4.11 shows that after adjusting for other factors in the multivariate model, only one of the two socio-economic factors remains significantly associated with unmet need for limiting. After adjusting for other factors, place of residence (AOR 0.1; 95% CI: 0.03 – 0.31; p = 0.0001) and educational level (AOR 0.2; 95% CI: 0.06 – 0.62; p = 0.006) of respondent continue to decrease odds of unmet need for limiting births.

Table 4. 11: Multiple logistic regressions on socio-demographic determinants of unmet need for limiting births

Characteristic	**Estimate**	**Adjusted OR**	**95% CI**	**P value**
Langas vs Old Uganda Road Estate	-2.4	0.1	0.03 – 0.31	**0.0001**
< 25 years of age vs > = 25	-0.05	0.9	0.43 – 2.13	0.9
< 25 years of marriage/union vs >=25	0.8	2.3	0.27– 19.15	0.5
Married vs not married	-1.1	0.3	0.11 – 1.13	0.08
None or primary education of respondent vs At least secondary education	-0.6	0.6	0.25 – 1.31	0.2
None or primary education of partner vs At least secondary education	-1.7	0.2	0.06 – 0.62	0.006
Not employed vs employed	-0.6	0.5	0.21 – 1.43	0.2
Partner not employed vs employed	-0.6	0.5	0.10 – 2.85	0.5
Protestant/Traditional vs Catholic/Muslim	0.7	2.0	0.88 – 4.65	0.1
< 4 living children vs >= 4	1.4	4.3	0.51 – 36.15	0.2
Kalenjin vs non-Kalenjin	-0.3	0.7	0.25 – 1.95	0.5

4.5.3 Multiple logistic regression on past obstetric history determinants of unmet needs for limiting births

Table 4.12 presents results of multiple logistic regression on past obstetric history determinants of unmet need for limiting births. Three past obstetric history factors are still significantly associated with unmet need for limiters. Place of residence (AOR 0.1; 95% CI: 0.03 – 0.36; p = 0.0003) and not having wanted to get pregnant (AOR 0.1; 95% CI: 0.01 – 0.49; p = 0.007) were associated with a significantly smaller proportion of respondents with unmet need for limiting births.

Focus Group Discussion from both Langas and Old Uganda Road Estates revealed that majority of the women who were 40 years and above felt the y were too old to conceive. A 42 year old woman from Old Uganda Road Estate said that, *"I have not been able to conceive for two years despite staying with my husband in the same house"* (Woman OUR 9)

Table 4. 12: Multiple logistic regression on past obstetric history determinants of unmet needs for limiting births

Characteristic	Estimate	Adjusted OR	95% CI	P value
Langas vs Old Uganda Road Estate	-2.2	0.1	0.03 – 0.36	0.0003
Has ever been pregnant	-1.0	0.4	0.02 – 6.45	0.49
< 4 previous pregnancies	1.1	2.9	0.36 – 24.05	0.31
<25 years when got first pregnant	0.7	2.1	0.25 – 17.0	0.50
Did not want to get pregnant	-2.6	0.1	0.01 – 0.49	0.007
No history of previous miscarriage, abortion or stillbirth	1.2	3.2	0.63 – 16.38	0.16

4.5.4 Multiple logistic regression on accessibility determinants of unmet needs for limiting Births.

Table 4.13 illustrates findings on multiple logistic regression analysis on accessibility determinants of unmet needs for limiting births. Only place of residence remained as a significant factor that determined access to FP methods by respondents with unmet need for limiting births. For residents of Langas, accessibility actually results in lower odds of unmet need for limiters (AOR 0.1; 95% CI: 0.03 – 0.32; p = 0.0001). The rest of the other factors were not statistically significantly associated with unmet need for limiting births.

Key informant interview with a community health volunteer from Langas observed that the County government ensures the availability of contraceptives and supplies in all public health facilities in the informal settlement. *"In comparison with Old Uganda Road Estate, more FP service providers and non-governmental organisations like AMPATH, Mariestopes, TUNZA and Hope worldwide also visit the community" (Woman L5)*

Table 4.13: Multiple logistic regression on accessibility determinants of unmet needs for limiting births

Characteristic	Estimate	Adjusted OR	95% CI	P value
Langas vs. Old Uganda Road Estate	-2.3	0.1	0.03 – 0.32	0.0001
Gets supply from hospital vs. from other sources	-0.1	0.9	0.37 – 2.42	0.9
Uses alternative methods vs. purchase from pharmacy and others sources	0.1	1.2	0.55 – 2.43	0.7

4.5.5 Multiple logistic regression on attitudinal determinants of unmet needs for limiting Births

Table 4.14 shows results of multiple logistic regression analysis on attitudinal determinants of unmet need for limiting births. Place of residence (AOR 0.1; 95% CI: 0.03 – 0.35; p = 0.0002) and husband making decision on the number of children that the respondents want to have (AOR 0.4 95% CI: 0.18 – 0.91; p = 0.03) were retained in the model as significant attitudinal determinants of unmet need for limiting births. The odds of unmet need for limiters was lower for those residing in Langas and those whose husbands were making decisions on the number of children respondent want to have.

During Focus Group discussions, majority of respondents from Langas agreed that their husbands are not aware of what FP methods they were using because they did not approve the use of contraceptive methods.

"We talk a lot about FP methods with friends in this community; mostly we share our experiences including what methods we are using. We talk about side effects and complications of FP use" (Woman L6).

Table 4. 14: Multiple logistic regression on attitudinal determinants of unmet need for limiting births

Characteristic	Estimate	Adjusted OR	95% CI	P value
Langas vs Old Uganda Road Estate	-2.3	0.1	0.03 – 0.35	0.0002
Refusal by partner as main reason hindering use of FP method vs. Other reasons	0.6	1.7	0.76 – 4.0	0.2
Discuss with husband FP methods vs Does not discuss	-0.2	0.8	0.38 – 1.93	0.7
Discuss often vs Not often	-0.8	0.5	0.18 – 1.19	0.1
Traditional/Cultural beliefs are not against use of FP methods vs Not against	-0.3	0.7	0.26 – 1.99	0.5
Husband decides number of children you want to have vs Others decide	-0.9	0.4	0.18 – 0.91	0.03

4.6 Determinants of unmet need for spacing births

4.6.1 Socio-demographic determinants of unmet need for spacing births

Multiple logistic regression was performed where place of residence and socio-demographic characteristics were used as explanatory variables and unmet need for spacing births as the outcome or response variable. Two factors that were significantly associated with unmet need for spacing births were being less than 25 years of age (AOR 17.6; 95% CI: 4.13 – 74.85; p = 0.0001) and being married (AOR 0.03; 95% CI: 0.01 – 0.12; p <0.0001). Whereas being young increased the odds of having unmet need for spacing, being married decreased the odds of having unmet need for spacing.

Table 4. 15: Socio-demographic determinants of unmet need for spacing births

Characteristic	**Estimate**	**Adjusted OR**	**95% CI**	**P value**
Langas vs Old Uganda Road Estate	0.7	2.0	0.88 – 4.70	0.1
< 25 years of age vs >=25	2.9	17.6	4.13 - 74.85	**0.0001**
< 25 years of marriage/union vs >=25	-1.2	0.3	0.04 – 2.25	0.2
Married vs not married	-3.5	0.03	0.01 – 0.12	**<0.0001**
None or primary education of respondent vs At least secondary education	0.3	1.4	0.58 – 3.16	0.5
None or primary education of partner vs At least secondary education	-0.2	0.8	0.28 – 2.58	0.8
Not employed vs employed	-0.2	0.8	0.33 – 1.99	0.6
Partner not employed vs employed	0.4	1.6	0.26 – 9.29	0.6
Protestant/Traditional vs Catholic/Muslim	-0.03	1.0	0.37 – 2.53	0.9
Kalenjin vs non-Kalenjin	-0.1	0.9	0.29 – 2.60	0.8

4.6.2 Multiple logistic regression on past obstetric history determinants of unmet needs for spacing births

Table 4.16 presents results on multiple logistic regression on past obstetric history determinants of unmet needs for spacing births. Being residents of Langas (AOR 2.2; 95% CI: 1.01 – 4.64; p = 0.05) and 'when got pregnant, wanted the pregnancy to have occurred later' (AOR 3.8; 95% CI: 1.10 – 13.42; p = 0.03) increased the odds of unmet need for spacers. However, having ever been pregnant decreased the odds of unmet need for spacing births (AOR 0.04; 95% CI: 0.01 – 0.21; p = 0.0003).

Focus Group discussion with women from Langas on use of contraceptive methods found that majority of women aged between 15 to 20 years did not use any contraceptive methods and if they did then not consistently because they felt they were young and did not engage in sexual relationship regularly like married women. This exposed them to the risk of child bearing since they were unprotected. Comparatively, women from Old Uganda Estate were of the same view but added that even those women whose husbands stay away from home only to come once after three months should not use FP consistently.

"Most of us in Langas settlement are young and some are still in school and as such can't take keen interest in FP practice due to infrequent sexual relationships"(Woman L10).

Table 4. 16: Multiple logistic regression on past obstetric history determinants of unmet needs for spacing births

Characteristic	Estimate	Adjusted OR	95% CI	P value
Langas vs Old Uganda Road Estate	0.8	2.2	1.01 – 4.64	0.05
Has ever been pregnant	-3.3	0.04	0.01 – 0.21	0.0003
<25 years when got first pregnant	-0.3	0.7	0.16 – 3.67	0.7
Did not want to get pregnant	0.6	1.9	0.26 – 14.04	0.5
When got pregnant, wanted later	1.3	3.8	1.10 – 13.42	0.03
No history of previous miscarriage, abortion or stillbirth	-1.2	0.3	0.06 – 1.46	0.1

4.6.3 Multiple logistic regression on accessibility determinants of unmet need for spacing births

Table 4.17 shows accessibility to FP methods determining unmet need for spacing births. Only one factor was significantly associated with increase in likelihood of having unmet need. The odds for unmet need for spacing in Langas were higher for those who get supply from hospital compared with those who were relying on other sources (AOR 11.5; 95% CI: 5.58 – 23.83; $p < 0.0001$).

Focus Group Discussion with two women groups from Langas settlement found that Majority of the women complained that government health facilities where free FP services were offered were far away from the slum making it difficult for them to access services. Additionally, most health facilities in the area are private and expensive. The cost of consultation and purchase of drugs was well beyond their

means. *"We leave most of the private hospitals for people who can afford to meet their charges".*(Woman L7). In contrast, their counterparts from Old Uganda Road did not raise any concerns with access to contraceptive services.

Table 4. 17: Multiple logistic regression on accessibility determinants of unmet needs for spacing births

Characteristic	Estimate	Adjusted OR	95% CI	P value
Langas vs Old Uganda Road Estate	0.5	1.7	0.84 – 3.48	0.1
Gets supply from hospital vs from other sources	2.4	11.5	5.58 – 23.83	**<0.0001**
Uses alternative methods vs purchase from pharmacy and others sources	0.2	1.2	0.58 – 2.35	0.7

4.6.4 Multiple logistic regression on attitudinal determinants of unmet needs for spacing births

Table 4.18 shows the results of multiple logistic regression on attitudinal determinants of unmet needs for spacing births. Residents of Langas had increased odds (AOR 2.1; 95% CI: 1.01 – 4.28; p = 0.05) in terms of the proportion of respondents who had unmet need on attitudinal domain. On the contrary, those who discuss with husband FP methods (AOR 0.1; 95% CI: 0.05 – 0.29; p < 0.0001) and those who often discuss FP methods (AOR 0.3; 95% CI: 0.10 – 0.87; p = 0.03) had decreased odds of having unmet need for spacing births after controlling for confounders.

All Focus Group Discussions for both Langas and Old Uganda Road Estates alluded to the fact that their husbands were opposed to use of contraceptive methods. Although a smaller number of the women from either settlement said they discussed FP matters with their husbands, an overwhelming majority said otherwise.

"Some of our husbands believe use of FP methods leads to promiscuity or unfaithfulness" (Woman L8)

Table 4. 18: Multiple logistic regression on attitudinal determinants of unmet needs for spacing births

Characteristic	Estimate	Adjusted OR	95% CI	P value
Langas vs Old Uganda Road Estate	0.7	2.1	1.01 – 4.28	0.05
Refusal by partner as main reason hindering use of FP method vs Other reasons	0.2	1.3	0.53 – 3.04	0.6
Discuss with husband FP methods vs Does not discuss	-2.1	0.1	0.05 – 0.29	<0.0001
Discuss often vs Not often	-1.2	0.3	0.10 – 0.87	0.03
Traditional/Cultural beliefs are not against use of FP methods vs Not against	-0.5	0.6	0.22 – 1.72	0.4
Husband decides number of children you want to have vs Others decide	0.4	1.4	0.68 – 3.00	0.3

In summary, determinants for unmet need for limiters are place of residence, level of education of partner, not wanting to get pregnant and husband deciding on the number

of children that the spouse should have, all decrease the odds of unmet need for those who want to limit births.

On the other hand, the determinants for unmet need for spacers which resulted in increased unmet need with higher odds are young age, place of residence, wishing to have conceived later and getting supply from hospital. Being married, having ever been pregnant, discussing with husband about FP methods and discussing FP methods often, resulted in decreased likelihood of having unmet need for spacing birth.

CHAPTER FIVE

DISCUSSION

5.1 Overview

This chapter discusses the study findings according to objectives. The first objective determined the factors associated with unmet need for limiting births among women of reproductive age living in formal and informal settlements of Eldoret. The second objective examined the factors associated with unmet need for spacing births among women of reproductive age living in formal and informal settlements of Eldoret while the third objective compared the determinants of unmet need for modern contraception among women of reproductive age living in formal and informal settlements of Eldoret.

5.2 Factors associated with unmet need for limiting births

The current study results showed significant association between age, respondents/ partner's level of education, employment status, religious affiliation, number of living children, fear of side effects, misconceptions and myths around contraceptive methods and unmet need for limiting births. These outcomes favoured residents of Langas as opposed to Old Uganda road.

Regardless of age grouping, respondents who desired to stop childbirth completely but were non- users of contraceptives were more common in Old Uganda Road Estate (P = 0.0023) compared with Langas informal settlement. Qualitative analysis supported this finding as it associated various age groups with the use of modern contraception. During focus group discussion, respondents aged 40 years and above from Langas informal settlement supported contraceptive use as they felt that they had already given birth to enough children. Tobe et al (2015), pointed out that women aged 40 years and above are more expected to practice contemporary methods of birth

control in contrast to young ones between 15 to 19 years. Similarly married women who desired to stop childbirth completely and were residents of Langas (P = 0.0001) were more expected to practice FP compared with their counterparts from Old Uganda Road Estate. Furthermore, the study observed that at all levels of education the likelihood of women using contraceptives to stop childbearing was higher in Langas compared to their counterparts in Old Uganda Road Estate.

The consistency in these results could be elucidated by the fact that public health institutions providing free FP services in Langas informal settlement are supplemented by more private hospitals, many nongovernmental and community based organizations making FP services more accessible. As reviewed in methodology chapter in this study, these organizations include Mariestopes (reproductive health), Tunza (Condom distribution and advocacy), Hope worldwide, CBO's like Tuiyo and Youth self-help group (HIV, condom distribution and health promotion). These community based organizations and youth groups conduct both outreach and door to door campaigns in Langas informal settlement. These interventions could have contributed to the reduction in the percentage of females who desired to stop giving birth but were not using contraceptives among respondents from Langas informal settlement compared with Old Uganda Road Estate.

Results of this study also pointed out that employment status influences contraceptive uptake. Unemployment did not deter respondents from Langas informal settlement from using contraceptives to prevent pregnancy when they wished to stop childbearing (p = 0.33). However those whose partners were employed were more expected to practice contraception to prevent unintended pregnancy when they desired to stop giving birth altogether ($P \leq 0.0001$). An employed woman or partner can afford financial costs incurred on contraceptive usage. On the contrary, in the absence

of a source of income, usage of modern contraception would decline because economic empowerment enhances informed decision making in the use of FP methods. Qualitative analysis from key informant (CHV) interviews in Old Uganda Road Estate supported this outcome. A quote from one CHV puts this into perspective: "*Most men in this estate are employed and believe they can support their families and as such do not support their spouses in FP matters" (CHV OUR 4)*. Partners from Old Uganda Road Estate who are economically empowered to make informed decisions regarding use of FP services may have disapproved use of contraceptive services hence the high level of unmet need for controlling births among residents of Old Uganda Road Estate.

The study also found that religious affiliation is associated with non-use of contraceptive services for those who wish to stop childbirth altogether. Most of the respondents from Langas informal settlement belonged to Protestant denominations (40.2%) compared with their colleagues from Old Uganda Road Estate (30.4%). Protestants allow usage of birth control methods. Most of the respondents from Old Uganda Road Estate were either Catholic or Muslim faithful. Catholic faith prohibits use of contemporary means of contraception preferring the use of natural methods like observation of menstrual cycles and safe days. Moreover, Roman Catholicism explains that the principle drive of a sexual relation within marriage is reproduction. The Catholic Church's position against use of contraceptives therefore influences people's attitude towards FP thereby increasing unmet need for restricting births (Bakibinga et al., 2016).

The sum existing offsprings a family has is related to disuse of FP methods for those who desire to stop childbirth. Non- use of FP methods for individuals who wished to stop child birth was less prevalent in Langas informal settlement (1.6%) than in Old

Uganda Road Estate (11.0%). Those with less than 4 living children from Langas were less likely to have had unmet need for limiting births than their counterparts from Old Uganda Road Estate. This result implied that most females from informal settlements have limited financial ability to sustain big families. This social status may have influenced them to use contraceptive methods. As women give birth to more children, unmet need for limiting births increases because they strive to achieve their desired number of children before terminating childbearing. On the contrary residents of Old Uganda Road Estate are of higher socio economic status and therefore capable of sustaining additional children. Nyauchi et al (2014), explained that women who had more than 5 children had higher chances of not using birth control interventions to stop deliveries than those with less than 5.

Although fear of adverse reactions makes people to perceive contemporary family planning methods as harmful to health, respondents from Langas informal settlement continued to utilize FP services. Despite fear of side effects in Langas, current use of FP methods remained more prevalent (22%) compared with Old Uganda road (12.2%). This could be attributed to the many non-governmental organizations and youth groups supplementing public and private institutions in the provision of FP services in the area. Contrary to this finding, Abeka (2012) in a study in Kibera slums of Nairobi established that fear of side effects contributed to unmet need for restricting births. The desire to stop childbearing by respondents from Old Uganda Road was hindered by spouse disapproval (44.2%) compared with Langas informal settlement (23.3%). Culturally, decision making power is vested in men in most patriarchal societies. Although misconceptions such as pills kill children in the womb existed in both settlements, women from Langas informal settlements still accessed contraceptive services. Contrary to this finding, Cleland et al (2012), stated that

misconceptions and myths greatly influence contraceptive non-use which makes women switch methods or discontinue them altogether.

5.3 Factors associated with unmet need for spacing births

The following factors were identified as being associated with respondents who desired to postpone childbirth but were not using contraceptive methods: age, marital status, education, employment status, never having been pregnant, number of previous pregnancies, accessibility and husband's disapproval.

The study posted a consistent pattern of results showing that those who desired to space childbirth but were non-users of contraception were more common in Langas informal settlement compared to their counterparts from Old Uganda Road Estate.

The study revealed that respondents below 25 years of age or not married from Langas informal settlement who wished to postpone childbirth were not using contemporary birth control methods. These age groups are sexually active and likely become pregnant, some are newly married and therefore unlikely to use contraceptive methods as they find this to be the opportune time to give birth to children. Furthermore, those living in informal settlements are introduced to sexual life early as some drop out of school due to lack of fees as opposed to their counterparts from formal settlements. On the contrary, those above 40 years are less sexually active and most of them have already given birth to enough children. Consequently, they turn to contemporary birth control options to prevent unintended pregnancy. Beguy et al (2017) in a study on FP among slum residents in Nairobi supported this finding that adoption of recent methods was less prevalent amongst presently married females of 15 – 19 years with a CPR of 40 percent.

It was further revealed that respondents from Langas informal settlement who were not married but desired to delay pregnancy were less likely to adopt contraceptive methods compared with those from Old Uganda Road Estate. This disparity could have been caused by inadequate knowledge on contemporary FP methods, low levels of education and early exposure to sexual life within informal settlements leading to teenage pregnancies and increased abortion (UGCID 2013). Furthermore, women who are not married feel they are not as frequently exposed to sexual activity as those in marriage. On the other hand women from Old Uganda Road Estate are more educated and economically empowered compared to their counterparts from the informal settlement.

It was expected that education could positively influence the adoption of current birth control methods to reduce unintended pregnancy. However, the study observed that respondents with secondary education and above (P = 0.004) and those whose partners had none or primary education (p = 0.003) from Langas informal settlement who wished to delay childbirth were not using contraceptives to postpone childbearing. On the contrary, those whose partners attained secondary education could postpone childbirth through contraception. Non use of contraceptives by respondents with secondary education could be attributed to disapproval of contraceptive use by their husbands as respondents from the informal settlement had a five-fold increase in having unmet need (0.0001) for spacing births. On the contrary, education exposes women to interactive opportunities with people from various cultural backgrounds from whom they learn new ideas such as using modern contraceptive methods for spacing births. An Uneducated partner is believed to have little knowledge on the importance of contraception and therefore cannot make an informed decision like an educated one. A study by Oketch et al (2011) supports this

result that a partner with low level of education has little understanding of fertility, maternal health and even side effects of contraceptives. On the contrary, respondents and partners from Old Uganda Road Estate had relatively higher educational credentials which helped them understand the importance of FP hence low chances of not spacing deliveries.

Whereas 14.5% of the non-spacers from Langas informal settlement were unemployed, only 5.8% of their counterparts who could do the same from old Uganda Road Estate were unemployed. Unemployed women most of who stay in Langas informal settlement are not empowered economically and therefore cannot make independent decisions on FP method use like their counterparts from Old Uganda Road Estate. Moreover, working women need enough time to attend to their duty besides their domestic engagement. It is equally difficult for employed women to acquire maternity leave every so often hence the need to space births. High user rates among employed women majority of who reside in formal settlements could be attributed to the many sources of information they are exposed to at their work place. Tobe et al (2015), in a related study explained that housewives had a high possibility of not using contraceptives compared to those respondents who had other occupations.

The study showed that not ever having been pregnant influenced contraceptive use. . Women who had never been pregnant and were resident in Langas could not adopt current birth control methods (P = 0.0006) compared to those from Old Uganda Road Estate. Qualitative analysis supported this outcome as a key informant's report from Langas put this into perspective:

"*Most women from Langas who conceived unintentionally decided to give birth since it was their first pregnancy.*" (CHV 4)

Ideally, the immediate desire of a woman in marriage is to give birth to children. More so, women who are married off early like in informal settlements have limited opportunity to plan and space births and therefore unlikely to use contraceptives to postpone pregnancy compared to those from formal settlements. Their desire is to demonstrate their reproductive ability once they get married (Asiimwe et al., 2012).

Those who had achieved 4 pregnancies were unable to space childbirth due to exposure to frequent and unprotected coital activity from one or more marriages. Adebowale (2014), in a study conducted in Burkina Faso pointed out that women who have been married more than once have difficulty in postponing their deliveries compared to those in a stable marriage. Furthermore, the probability of not utilizing FP methods for respondents from Langas who did not want to get pregnant (P = 0.003) and those who when they got pregnant wanted it later was higher compared to their counterparts from Old Uganda Road Estate. Coming from a background of informal settlement, these women may have lacked adequate knowledge on socio-economic and health profits of contraception.

Inaccessibility to contraceptive services hinders contraceptive use. Whereas most residents from Langas felt that hospital was the most convenient place to get FP supplies (p = 0.006) from, only a few actually accessed them from hospital (p =0.006) compared with Old Uganda Road Estate. Thematic analysis of qualitative results supported this finding as women from Langas informal settlement complained of overcrowding at health facilities, long queues and high cost of services at private health facilities. Furthermore, they complained that public hospitals where procedures

like tubal ligation, implants and IUCD insertion are done are far from the informal settlement. *"Government hospitals where FP operations can be done are too far from here and yet private hospitals are expensive. To travel from here to those facilities is equally expensive" (Woman L6).* Comparatively, women from Old Uganda Road Estate alluded to the fact that health facilities were less overcrowded. FP method use was higher in urban centres compared to informal settlements because urban centres have infrastructural development such as Hospitals, better education and knowledge about modern contraception unlike in informal settlements (Ferdousi et al (2012).

Disapproval of contraceptive use and failure to discuss FP method usage among couples increased the percentage of those who failed to choose an FP option despite their desire to postpone pregnancy in Langas. Similarly those whose husbands decided the number of children they should give birth to were more prone to unplanned pregnancy compared with women from Old Uganda Estate. The decision making power is vested in men in most patriarchal societies and as such they may not approve use of FP services where it is not condoned. Approval is therefore achieved through discussion with partner. A significantly smaller proportion of those who use FP with husband's approval experience difficulty in spacing deliveries (Adebowale 2014). Kisia et al (2014), supported this result when he pointed out that partner discussion encouraged approval and acceptance of contemporary birth control methods since 79% of those who discussed with their partners actually used some method compared to those who did not.

5.4 Comparison of the determinants of unmet need for modern contraception among women of reproductive age living in formal and informal settlements of Eldoret

Using multiple logistic regression models the study showed consistent results where the percentage of females who wanted no additional children but were not using any contraception was lower among respondents from Langas informal settlement compared with Old Uganda Road Estate. The study identified place of residence, level of education of partner, not wanting to get pregnant and husband deciding on the number of children that the spouse should have as determinants that reduced the number of those who wished to terminate giving birth to children but were not using birth control methods.

Respondents who desired to stop childbearing altogether but were non-users of birth control methods were more common in Old Uganda Road Estate compared with Langas informal settlement (P = 0.0001). It is clear from the study that the prevalence of unmet need for limiting births for Langas was 1.1% of 264 respondents compared with 10.6% of 263 respondents of Old Uganda Road Estate.

The level of education of partner showed statistically significant results between residents of the two study areas. Comparatively, respondents whose partners attained none or primary education from Langas informal settlement (p = 0.006) who wished to stop childbirth were expected to practice contemporary means of contraception to prevent unintended pregnancy compared with their colleagues from Old Uganda Road Estate.

The incidence of unintended pregnancy among participants from Langas informal settlement was lower compared with Old Uganda Road estate. Respondents from

Langas informal settlement who did not want to get pregnant (p=0.007) because they wished to stop childbearing were able to practice new means of birth control to prevent pregnancy compared with their counterparts from Old Uganda Road Estate. Qualitative analysis reaffirmed this finding through the revelation that some women from Old Uganda Road who desired to stop childbirth were non-users of FP. A quote from one woman puts this into perspective: *"I have not been able to conceive for two years without using a method of contraception despite the fact that i stay in the same house with my husband".*

As pointed out earlier, the percentage of participants who desired no additional children was lower (p = 0.0002) for respondents residing in Langas informal settlement compared with residents of Old Uganda Road Estate. The results also indicated that in Langas, those whose husbands were making resolutions on the number of children respondents should have (0.03) were more expected to practice birth control compared with their contemporaries from Old Uganda Road Estate.

The study equally identified age, place of residence, wishing to have conceived later and getting supply from hospital as determinants which resulted in increased unmet need for spacing with increased odds

Results further illustrated that participants who were below the age of 25 years (P = 0.0001) who desired to postpone childbirth but were non-users of contraceptives were more common in Langas informal settlement compared with Old Uganda Road Estate. However, when rated against single women, those who were married and needed to postpone pregnancy but were non-users of contraception were less common in Langas informal settlement compared with Old Uganda Road Estate.

The place of residence was a key determinant of contraceptive usage for birth spacing. The likelihood of non-use of birth control methods for those who desired to postpone births among respondents from Langas informal settlement was higher (P = 0.05) compared to their counterparts from Old Uganda Road Estate. When compared with respondents from Old Uganda Road Estate, residents of Langas informal settlement were 2.2 times more expected not to have used any contraceptive method despite their desire to delay pregnancy. Similarly, the likelihood of women from Langas informal settlement who when they got pregnant wanted the pregnancy to have occurred later (P = 0.03) was higher compared with those from Old Uganda Road Estate. However, respondents from Langas informal settlement who had ever been pregnant (0.0003) and desired to delay reproduction were more expected to practice contemporary means of birth control.

In terms of accessibility to contraceptive services respondents who wished to postpone pregnancy but were not using any contraceptives and got their supply from Hospital were more common in Langas (P = 0.1) compared with Old Uganda Road Estate. Furthermore, those who relied on Hospital for their supply from the same settlement were not expected to accept contemporary birth control usage compared to those who were relying on other sources (P = 0.0001)

Finally, the likelihood of having unintended pregnancy among those who wanted to delay childbirth but were not using birth control methods was higher among respondents from Langas (p = 0.05) informal settlement compared with their colleagues from Old Uganda Road Estate. On the contrary, those who discussed FP methods (p = 0.0001) and those who discussed FP methods often (P = 0.03) and wanted to delay pregnancy were more likely to adopt contraceptive methods to prevent unintended pregnancy after controlling for confounders.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Overview

This chapter provides the summary and conclusion based on research results and objectives. Specific recommendations and suggestions have been made for future interventions with the aim of improving acceptance of current contraceptives among residents of informal settlements.

6.2 Summary

The research was undertaken to determine and examine factors that are associated with unmet need for modern contraception among women of reproductive age living in formal and informal settlements of Eldoret. Finally the contributing factors of non-use of contemporary birth control methods for the two settlements were compared.

Factors associated with unmet need for limiting births included age, marital status, level of education, employment status, number of living children, myths and

misconceptions around contraceptives, fear of adverse reactions and spiritual attachment of respondents among others in favour of Langas.

Failure to utilize FP methods despite the desire to delay childbirth is related to age, not being married, level of education, employment status of respondent and partner, not ever having been pregnant, previous pregnancies, wishing to have conceived later, husband disapproval and discussion about FP just to mention but a few in favour of Old Uganda road estate.

6.3 Conclusion

Determinants for unmet need for limiting births that ensured use of current methods of contraception for those who wished to end reproduction altogether and were not on any birth control method were place of residence, level of education of partner, not wanting to get pregnant and husband deciding on the number of children that the spouse should have. In comparison determinants for unmet need for spacing births which resulted in increased number of non-users among respondents were place of residence, wishing to have conceived later and getting FP supply from hospital. On the contrary, being married, having ever been pregnant, discussing with husband about FP and discussing FP methods often reduced the number of non-users.

6.4 Recommendations

Based on the study findings, the following are recommended:

i) Old Uganda road residents who wished to stop childbearing but were not using contraceptives to prevent pregnancy did so for various reasons: young women thought

it was time to have children. Partners disapproved use of FP by spouses and some wanted to raise desired number of children, others feared side effects while some had misconceptions about contraceptives. Most Catholic and Muslim faithful conformed to their religious beliefs.

The study recommended Health education to this community on the usefulness of Family planning methods, usage and their side effects. Adequate supply of available options in the market to all health facilities should be ensured to avoid stock outs. Couple counseling at all service delivery points should be intensified. All FP service providers in liaison with community health volunteers in this community can be tasked to implement this recommendation. Non-governmental organizations and community based organization should supplement government interventions. Local administrators and village elders should discuss with husbands the importance of involving their spouses in making informed decisions on their intended family size.

ii) Participants who desired to postpone having children but were non-users of contraceptives were more common in Langas informal settlement. They include young women below 25 years of age, those with none or primary level of education with those whose partners were of same educational status. Other factors that raised the level of unmet need for spacing births are lack of access to contraceptive services, wanting to conceive later and husband disapproval of FP services.

The study recommended more health education campaigns and awareness talks through community outreach and youth friendly services on the benefits of contraception for birth spacing. This should target youth below 25 years. Similarly, health education on available methods in the market, usage and side effects of such methods should target those who when they conceived wanted it to have occurred

later. All FP practitioners, community Health Volunteers and NGO's should work in liaison to implement these recommendations.

The study also recommended that the number of FP service providers be enhanced at all service delivery points in Langas informal settlement to ease overcrowding hence improving access to contraceptive services. This should be tasked to County health management team.

Finally husbands/ partners should be counseled on the importance of involving their spouses in decision making regarding birth spacing and determining the size of family that they want. To achieve this FP service providers in this settlement, CHV's, local administrators and villages elders should discuss with husbands and urge them to engage their spouses in FP matters.

Further research

Since men did not participate in this study, further research should be done on men's perspectives on causes of non-adoption of current birth control options in the urban slum dwellers. The exclusion of men in FP method usage can increase unmet need for limiting and spacing among contraceptive users.

REFERENCES

Adebowale, S. A., &Palamuleni, M. E. (2014). Determinants of unmet need for modern contraception and reasons for non-use among married women in rural areas of Burkina Faso. *African Population Studies*, *28*(1), 499-514.

APHRC - African population and Health research Centre (2014*). Population and Health Dynamics in Nairobi's informal settlements*: *A report of the Nairobi cross sectional slums survey* (NCSS). Nairobi: African population and Health research center.

Amuyunzu-Nyamongo, M., Okeng'o, L., Wagura, A., &Mwenzwa, E. (2007). Putting on a brave face: the experiences of women living with HIV and AIDS in informal settlements of Nairobi, Kenya. *AIDS care*, *19*(sup1), 25-34.

Al-Bakry, D. H., & Al-Jawadi, A. A. (2010). Determining Level and Predictors of Family Planning Unmet Need in Mosul City, North of Iraq: A Cross-Sectional Study. *World Family Medicine Journal: Incorporating the Middle East Journal of Family Medicine*, *99*(290), 1-7.

Alemayehu, M., Lemma, H., Abrha, K., Adama, Y., Fisseha, G., Yebyo, H. & Gebregzabher, T. (2016). Family planning use and associated factors among pastoralist community of afar region, eastern Ethiopia. *BMC women's health*, *16*(1), 39.

Alkema, Leontine, Vladimir a, Kantorova, Claire Menozi and Anne Biddlecom (2013). "National, Regional and global rates and trends in contraceptive prevalence and unmet need for family planning between 1990 and 2015; A systematic and comprehensive analysis" The Lancet 381(1978): 1642 -1652

Ansari, M. W. F., Rajashekhar, K., & Reddy, S. S. (2015). Socio-demographic factors and prevalence of unmet need for family planning in urban and rural field practice areas of MR Medical College, Kalaburagi. *JOURNAL OF EVOLUTION OF MEDICAL AND DENTAL SCIENCES-JEMDS*, *4*(69), 11944-11952.

Asekun-Olarinmoye, E. O., Adebimpe, W. O., Bamidele, J. O., Odu, O. O., Asekun-Olarinmoye, I. O., &Ojofeitimi, E. O. (2013). Barriers to use of modern contraceptives among women in an inner city area of Osogbo metropolis, Osun state, Nigeria. *International journal of women's health*, *5*, 647.

Asiimwe, J. B., Ndugga, P., Mushomi, J., &Ntozi, J. P. M. (2014). Factors associated with modern contraceptive use among young and older women in Uganda; a comparative analysis. *BMC public health*, *14*(1), 926.

Assefa H., Fikrewold (2011). Factors affecting unmet need for Family planning in southern Nations, nationalities and peoples region, Ethiopia. Ethiopian Journal of Health sciences

Azmoude, E., Behnam, H., Barati-Far, S., &Aradmehr, M. (2017). Factors affecting the use of long-acting and permanent contraceptive methods among married women of reproductive age in East of Iran. *Women's Health Bulletin*, *4*(3).

Baiden, F., Mensah, G. P., Akoto, N. O., Delvaux, T., & Appiah, P. C. (2016). Covert contraceptive use among women attending a reproductive health clinic in a municipality in Ghana. *BMC women's health*, *16*(1), 31.

Bankole and Audams S (2011). Fertility preferences & contraceptive use among sub Saharan Africa African population studies.2011; 25(2):556–86

Bakibinga, P., Mutombo, N., Mukiira, C., Kamande, E., Ezeh, A., &Muga, R. (2016). The influence of religion and ethnicity on family planning approval: a case for women in rural Western Kenya. *Journal of religion and health*, *55*(1), 192-205.

Bascheri A, Cleknd J, Floyd S, Dube ALN, Msona A, morles A, French N, (2013). Reproductive preference and contraceptive use: A Comparative of monogamous and polygamous couples in Northern Malawi

Beguy, D., Ezeh, A. C., Mberu, B. U., &Emina, J. B. (2017). Changes in use of family planning among the urban poor: evidence from Nairobi slums. *Population and Development Review*, *43*, 216-234.

Belda, S. S., Haile, M. T., Melku, A. T., &Tololu, A. K. (2017). Modern contraceptive utilization and associated factors among married pastoralist women in Bale eco-region, Bale Zone, South East Ethiopia. *BMC health services research*, *17*(1), 194.

Bernard Nyauchi and Gilbert Omedi (2014). Determinants of unmet need for Family planning among Women in rural Kenya. African population studies Vol. 28 no, 2

Biddlecom, A and Kantarova, V. (2013). Global Trends in contraceptive method mix and implications for meeting demand for family planning. In session 81 at the meeting of the population Association of America, New Orleans, April (pp. 11 – 13)

Bongaarts, J (2014). The impact of Family planning programs on unmet need and demand for contraception. Studies in Family planning, Vol 45 No. 2 pp 247 – 262

Brenner, S., Jahn, A., and De Allegri (2016).A scoping view on determinants of unmet need for family planning among women of reproductive age in low and middle income countries. BMC women's Health 16(1), 1.

Browne L (2012). What is religion got to do with it? Islam and fertility in Senegal and Cameroon. Ithaca, NY: (Bachelor's), Cornell University.

Burke, H.M., Chen, M., Buluzi, Fuchs, R., Wevill, S., Venkatasubramanian, L., &Ngwira, B. (2018). Effect of self-administration versus provider-administered injection of subcutaneous depot Medroxyprogesterone acetate on continuation rates in Malawi: a randomized controlled trial. *The Lancet Global Health*, *6*(5), e568-e578.

Capurchande, R., Coene, G., Schockaert, I., Macia, M., &Meulemans, H. (2016). "It is challenging… oh, nobody likes it!" a qualitative study exploring

Mozambican adolescents and young adults' experiences with contraception. *BMC women's health*, *16*(1), 48.

Casterline, J. B., & Sinding, S. W. (2000). Unmet need for family planning in developing countries and implication

Cleland, J., Harbison, S., & Shah, I. H. (2014). Unmet need for contraception: issues and challenges. *Studies in family planning*, *45*(2), 105-122.s for population policy. *Population and development review*, *26*(4), 691-723.

Darroch, Jacqueline E., Susheela Singh, and Lori S Ashford (2013). "Adding it up. The need for and cost of material and newborn care-Estimates for 2012."

E.K. Harrington S.j .Newman, M. Onono (2012). 'Fertility intentions and interest in Integrated Family Planning among Women with HIV in Nyanza province Kenya; A Qualitative study; infectious in Obstetrics and Gynecology.

Ferdousi S, Jabber M, Hoque S, Karim S, Mohamood A, Ara R and Khan N (2010).Unmet need for Family planning among rural women in Bangladesh J Dhaka Medcoll., 2010: 19(1).

Frost, J. J., Singh, S., & Finer, L. B. (2007). Factors associated with contraceptive use and nonuse, United States, 2004. *Perspectives on sexual and reproductive health*, *39*(2), 90-99.

GOK (2016)

Ganz, M. L., & Tendulkar, S. A. (2006). Mental health care services for children with special health care needs and their family members: prevalence and correlates of unmet needs. *Pediatrics*, *117*(6), 2138-2148.

Gebreselasie T and Pav G. (2013) Levels and trends in unmet need for Family planning among adolescents and young women in Ethiopia; Calverton, Maryland; USA: ICF international 11-4

Grimes, D.A., Lopez, L.M., O'Brien, P.A., & Raymond, E.G. (2010). Progestin-only contraception. *Cochrane database of systematic reviews*, (1).

Health policy Initiatives (HPI), Task order 1(2007). Inequities in the use of Family planning and Reproductive health services: Implications for policies and programs, Washington DC, Futures Group international

Hailemariam, A., &Haddis, F. (2011). Factors affecting unmet need for family planning in southern nations, nationalities and peoples region, Ethiopia. *Ethiopian journal of health sciences*, *21*(2), 77-90.

Hennink, M., & Clements, S. (2005). The impact of franchised family planning clinics in poor urban areas of Pakistan. *Studies in Family Planning*, *36*(1), 33-44.

Hungi, N., Ngware, M., &Abuya, B. (2014). Examining the impact of age on literacy achievement among grade 6 primary school pupils in Kenya. *International Journal of Educational Development*, *39*, 237-249.

Ibnouf H, Van de Borne, HW Maars Jan e (2007). Utilization of Family planning services by married Sudanese women of reproductive age. Eastern Mediterranean Health journal Vol. 13, no.6

Imasiku, E. N., Odimegwu, C. O., Adedini, S. A., &Ononokpono, D. N. (2014). Variations in unmet need for contraception in Zambia: does ethnicity play a role?. *Journal of biosocial science*, *46*(3), 294-315.

Izugbara C. (2014). Household characteristics and unintended pregnancy among ever married women in Nigeria. Sic Med 8:1

John Cleland S, Iqbal Shah H, (2014). Unmet need for contraception: Issues and challenges. The population council, Inc. 2014; 45 (2): 105 – 22

Jones RK, Tapales A, Lindberg LD, Frost J (2015). Using longitudinal data in understanding changes in consistent contraceptive use. Perspective sex reproductive health doi: 10.1363/47e4615 pub med central. Google scholar

Justice Novignon and Jacob Novignon (2014).Trend and determinants of contraceptive use among women of reproductive age in Ghana. African population studies Volume 28 no 2 supplement

Kabiru, C. W., Beguy, D., Undie, C. C., Zulu, E. M., &Ezeh, A. C. (2010). Transition into first sex among adolescents in slum and non-slum communities in Nairobi, Kenya. *Journal of Youth Studies*, *13*(4), 453-471.

Kaunitz, A. M., Peipert, J. F., & Grimes, D. A. (2014). Injectable contraception: issues and opportunities. *Contraception*, *89*(5), 331-334.

Kimani-Murage, E. W., Norris, S. A., Mutua, M. K., Wekesah, F., Wanjohi, M., Muhia, N., &Musoke, R. N. (2016). Potential effectiveness of community health strategy to promote exclusive breastfeeding in urban poor settings in Nairobi, Kenya: a quasi-experimental study. *Journal of developmental origins of health and disease*, *7*(2), 172-184.

Kenya Demographic Health Survey (KDHS), 2014.

Kenya National Bureau of statistics (2016).Ministry of Health, Kenya Demographic survey. Rockville, Maryland: ICF International.

Kiprotich, K (2014). How emergency and Long Acting contraceptives work.

Lee, J., & Jezewski, M. A. (2007). Attitudes toward oral contraceptive use among women of reproductive age: a systematic review. *Advances in Nursing Science*, *30*(1), E85-E103.

Machiyama, K., Casterline, J. B., Mumah, J. N., Huda, F. A., Obare, F., Odwe, G., & Cleland, J. (2017). Reasons for unmet need for family planning, with attention to the measurement of fertility preferences: protocol for a multi-site cohort study. *Reproductive health*, *14*(1), 23.

Magura, S., Blankertz, L., Madison, E. M., Friedman, E., & Gomez, A. (2007). An innovative job placement model for unemployed methadone patients: a randomized clinical trial. *Substance use & misuse*, *42*(5), 811-828.

Maki S. (2012). Unmet need for FP persists in developing countries. Population Bureau. Http: // www. prb.org/ articles/ 2007/ unmet need.aspx.

Measure/DHS.ORC Macro. United States Agency for International Development

Megan L. Kavanaugh and Ragnar M. Anderson (2013).Contraception and beyond. The health benefits of services provided at FP centers. Guttmacher institute

Mehata, S., Paudel, Y. R., Dotel, B. R., Singh, D. R., Poudel, P., & Barnett, S. (2014). Inequalities in the use of family planning in rural Nepal. *BioMed research international*, *2014*

Mosher, William D., Jo Jones, Joyce C. Abma (2012). Intended and unintended births in the United States: 1982 – 2010 National Health statistics report no.53 Hyattsville; National Centre for Health statistics.

National institute for health and clinical excellence (NICE) 2014. Long acting reversible contraception: the effective and appropriate use of Long acting reversible contraception: London: National collaborating Centre for women and children's Health.

Nyauchi, B., &Omedi, G. (2014). Determinants of unmet need for family planning among women in rural Kenya. *African population studies*, *28*, 999-1008.

Nzokirishaka, A., &Itua, I. (2018). Determinants of unmet need for family planning among married women of reproductive age in Burundi: a cross-sectional study. *Contraception and reproductive medicine*, *3*(1), 11.

Ochako, R., Izugbara, C., Okal, J., Askew, I., & Temmerman, M. (2016). Contraceptive method choice among women in slum and non-slum communities in Nairobi, Kenya. *BMC women's health*, *16*(1), 35.Imasiku, E. N.,

Odimegwu, C. O., Adedini, S. A., &Ononokpono, D. N. (2014). Variations in unmet need for contraception in Zambia: does ethnicity play a role?. *Journal of biosocial science*, *46*(3), 294-315.

Okech, T. C., Wawire, N. W., & Mburu, T. K. (2011). Empirical analysis of determinants of demand for family planning services in Kenya's city slums.

Oluwasami L., Supa P and Karl P. (2011). Awareness and use of and barriers to FP among female university students in Lesotho. SAJOG Vol. 17 No. 3; 1

Omariba, D. W. R. (2006). Women's educational attainment and intergenerational patterns of fertility behaviour in Kenya. *Journal of biosocial science*, *38*(4), 449-479.

Palamuleni, M. E., & Adebowale, A. S. (2014). Women empowerment and the current use of long acting and permanent contraceptive: Evidence from 2010 Malawi Demographic and Health Survey. *Malawi Medical Journal*, *26*(3), 63-70.

Reid, R. L., Westhoff, C., Mansour, D., de Vries, C., Verhaeghe, J., Boschitsch, E., ...& Iversen, O. E. (2010). Oral contraceptives and venous thromboembolism: consensus opinion from an international workshop held in Berlin, Germany in December 2009. *BMJ Sexual & Reproductive Health*, *36*(3), 117-122.

Relwani, N. R., Saoji, A. V., Kulkarni, M., Kasturwar, N., Zade, R., &Wadke, R. (2015). Revealing unmet need for contraception among married women in an urban slum of Nagpur. *International Journal of Medical Science and Public Health*, *4*(8), 1136-1141.

Sarah E K Bradley, Trevor N. Croft, Joy D. Fishel and Charles F. Westoff (2012).“Revising unmet need for Family planning” DHS analytical studies No 25. Princeton University.

Schuler, S. R., Choque, M. E., & Rance, S. (2015). Misinformation, mistrust, and mistreatment: family planning among Bolivian market women. *Studies in family planning*, 211-221.

Sassman, R., Lehaney, B., Bali, R. K., Naguib, R. N., & Marshall, I. M. (2010). The Development of a Framework to Evaluate the Management of HIV/AIDS Programmes in Rural and Urban South Africa. In *Perspectives of Knowledge Management in Urban Health* (pp. 115-128). Springer, New York, NY.

Sedgh, Gilda and Rubinah Hussain (2014). Reasons for contraceptive non-use among women having unmet need for contraception in developing countries.

Skiles priedman M, et al. (2015). The effect of access to contraceptive services on Injectable use and demand for Family planning in Malawi. International perspective for sexual and reproductive Health.

Speizer, I. S., Nanda, P., Achyut, P., Pillai, G., &Guilkey, D. K. (2012). Family planning use among urban poor women from six cities of Uttar Pradesh, India. *Journal of Urban Health*, *89*(4), 639-658.

Samira M.E and Nihad K.M (2011). Knowledge, attitude and practice of Family planning among women in Basra city south of Iraq. Medical Journal Basra University. Vol.29.

Sanga, K., Mola, G., Wattimena, J., Justesen, A., & I Black, K. (2014). Unintended pregnancy amongst women attending antenatal clinics at the Port Moresby General Hospital. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, *54*(4), 360-365.

Sessional Paper No. 3 (2012). Government of Kenya.

Stephen A. Adebowale and Martin E. Palamuleni (2014). Determinants of unmet need for modern contraception and reasons for non-use among married women in rural areas of Burkina Faso. African pop studies, Vol 28. No 1

Tekelab, T., Melka, A. S., &Wirtu, D. (2015). Predictors of modern contraceptive methods use among married women of reproductive age groups in Western

Ethiopia: a community based cross-sectional study. *BMC women's health*, *15*(1), 52

Tessema, A. L., Bishaw, M. A., &Bunare, T. S. (2015). Assessment of the magnitude and associated factors of unmet need for family planning among women of reproductive age group with disabilities in Bahir Dar City, Amhara Region, North West Ethiopia. *Open Journal of Epidemiology*, *5*(01), 51.

Thang, N. M., & Huong, V. T. (2003). Changes in contraceptive use in Vietnam. *Journal of biosocial science*, *35*(4), 527-543.

Thomas Jr, A. G. (2009). Contraceptive Choices in Pediatric, Adolescent, and Young Adult. *Pediatric, Adolescent and Young Adult Gynecology*, 265.

Tobe A, Nahusenay H, Misker D (2015). Factors associated with modern contraceptive service utilization among married women of reproductive age in Melokoza Woreda, Southern Ethiopia. J preg child Health 2: 128

Uasin Gishu Integrated County Development Plan (2013)

United Nations DESA, Population Division (2014). World Urbanization prospects: The 2014 Revision, Highlights, New York.

United Nations population fund (2010). Improving Reproductive Health, UNFPA, New York.

Wanyenze, R. K., Matovu, J. K., Kamya, M. R., Tumwesigye, N. M., Nannyonga, M., & Wagner, G. J. (2015). Fertility desires and unmet need for family planning among HIV infected individuals in two HIV clinics with differing models of family planning service delivery. *BMC women's health*

Westoff, C. F. and A. R. Cross (2011). The Stall in the Fertility Transition in Kenya, USAID

World Health Organization (2010); unsafe abortion, Global and regional estimates of the incidence of unsafe abortion in 2008, sixth edition. WHO department of reproductive health and research, world Health Organization2011

World Health Organization (2011). Family planning: A global handbook for providers, Baltimore and Geneva. World health organization Department of reproductive health and research and John Hopkins Bloomberg School of public health / centre for communication programs

Wulifan, J. K., Mazalale, J., Kambala, C., Angko, W., Asante, J., Kpinpuo, S., &Kalolo, A. (2019). Prevalence and determinants of unmet need for family planning among married women in Ghana-a multinomial logistic regression analysis of the GDHS, 2014. *Contraception and reproductive medicine*, *4*(1), 2.

APPENDICES

APPENDIX 1: QUESTIONNAIRE

FILE NO……

CONFIDENTIAL
SECTION 1: RESPONDENTS BACKGROUND

INTRODUCTION AND CONSENT

Hello. My name is…….We are conducting a survey about contraception in Uasin Gishu county. The information we collect will help the county government plan health services. Your household was selected for the survey. The questions usually take 15 – 30 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey team but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you stop the interview at any time.

In case you need more information about this study you may contact the person listed herewith (D. Maleche. cell phone…0721903746)

Signature of the interviewer……Date…….....

	IDENTIFICATION	
1	COUNTY	
2	SUB COUNTY	
3	CONSTITUENCY	
4	RESIDENCE	
5	CLUSTER NUMBER	
6	HOUSEHOLD NUMBER	
7	INTERVIEWEE'S NUMBER	

8	INTERVIEWER'S INITIALS	
9	DATE	

PART I: SOCIO DEMOGRAPHIC DATA

INSTRUCTIONS: Please circle the appropriate response.

NO	VARIABLE	RESPONSE	CODE
1	Age	…….Years	
2	Marital status	1 = Single 2 = Married 2 = Separated 3 = Divorced 4 = Widow	
3	Age at first marriage/ Union	……	
4	Number of living children	……	
5	Respondent's educational level	1 = None 2 = Primary 3= Secondary 4= Tertiary	
6	Partners education level	1 = None 2 = Primary 3 =Secondary 4 = Tertiary	
7	Respondent's Work status (Occupation)	1= Unemployed 2 = Employed 3 = Business	
8	Partners occupation	1 = Unemployed 2 = Employed 3 = Business	
9	Wealth Quintile	1 = poor 2 = Medium 3 = Rich	
10	Religion	1 = Catholic 2 = Protestant 3 = Traditional 4 = Muslim 5 = Other Specify……	

11	Ethnicity	1 = Kikuyu 2 = Luo 3 = Luhya 4 = Kalenjin 5 = Kisii 6 = Kamba 7 = Other Specify ……	

PART II: Respondents reproductive history

No	Question	Response	
12	Have you ever been pregnant?	1 = Yes 2 = No…….	Go to 19
13	If Yes, how many pregnancies have you had?	Enter no…….	
14	How old were you when you first got pregnant?	Age in years……..	
15	In what month and year was your last child born?	1 = Month…… 2 = Year……	
16	When you got pregnant, did you want to get pregnant at that time?	1 = Yes 2 = No	
17	If No, did you want a baby later on or not at all? (Not any more)	1 = Later 2 = No more	
18	Has your menstrual period resumed since then?	1 = Yes 1 = No	
19	Have you ever had a pregnancy miscarried, aborted or ended in stillbirth?	1 = Yes 2 = No	
20	Are you pregnant at the moment?	1 = Yes 1 = No……	Go to 24
21	If yes, did you want to get pregnant at the moment?	1 = Yes 2 = No	
22	After the birth of the child you are expecting now, would you like to have another child or would you prefer not to have any more children?	1= Have another child 2 = No more children 3 = Undecided/ Don't know	
23	After the birth of the child you are expecting now, how long would you like to wait before giving birth to another child?	1 = Soon/ Now 2 = Months 3 = Years 4 = Says she can't get pregnant 5 = Other Specify	
24	IF NOT PREGNANT OR UNSURE…….Are you currently doing something or using any method to delay or avoid getting pregnant?	1 = Yes 2 = No	
25	Would you like to have (a/ another) child or would you not prefer not to have any (more)	1 = Have another child 2 = No more…… 3 = Says she cant get	Go to 27

	children?	pregnant 4= Undecided/ Don't know	
26	How long would you like to wait before giving birth to another child?	1 = Soon/ Now 2 = Months 3 = Years 4=Other Specify……	
27	WANTS NO MORE/ NONE…….You have said that you do not want any more children. Can you tell me why you are not using a method to prevent pregnancy? Any reason? (Primary) …… …… …… …… …… …… …… Any other reason? (Secondary) …… …… …… …… …… ……		
28	**PART III Knowledge of contraceptive methods**		
	Have you ever heard of contraceptive methods?	1 = Yes 2 = No	
	If yes then, which ones? Oral contraceptives	1 = Yes 2 = No	
	Male condom	1= Yes 2 = No	
	Female condom	1=Yes 2 = No	
	Male sterilization	1 = Yes 2 = No	
	Female sterilization	1 = Yes 2 = No	
	Intra uterine Devices (IUD)	1 = Yes 2 = No	
	Prolonged breastfeeding	1 = Yes 2 = No	
	Others (specify)	…… ……	

29	Do you think that there are any advantages with the use of contraceptive methods?	1 = Yes 2 = No	
30	If yes, what are the advantages of using contraceptive methods?	1…… …… 2…… …… 3……..	
	Part IV Practice of contraceptive methods		
31	Please tell me to which group you belong regarding contraceptive practice	1 = Current user 2 = Ever used 3=Non user…… 4 = Other – specify …….	Go to 42
32	If you have ever used a contraceptive method, how old were you when you first started using?	Age in years……..	
33	How many living children did you have at that time?	Number of children ……	
34	What was the method you used then?	1 = Pill 2 = IUCD 3 = Injectable 4 = Implant 5 = Condom 6Female sterilization 7 =Male sterilization 8 = Other specify ……	
35	If you are currently using the contraceptive method, for what purpose are you using it?	1 = Spacing birth 2 = Limiting birth 3 = Don't know 4=Other specify…….. …….	
36	What type of contraceptive method do you use currently?	……..	
37	At that time were you told about side effects or problems you might have with the method?	1 = Yes 2 = No	
38	Were you told what to do if you experienced side effects?	1 = Yes 2 = No	
39	CODE 1 CIRCLED – At that time, were you told about the methods of FP that you could use?	1 = Yes 2 = No	
40	CODE 1NOT CIRCLED – When you obtained current method, were you told about other methods of FP that you could use?	1 = Yes 2 = No	
41	Were you ever told by a health or a family planning worker about other methods of family planning that you could use?	1 = Yes 2 = No	
		1 = Spouse does not	

42	If your response to Q. 31is "Non user" why are you not using any contraceptives	approve 2=Itis against religious teaching 3=Fear of side effects 4 = Lack of access 5=Others, specify……..	
	Accessibility to contraceptive methods		
43	Where do you always get your supply of contraceptives? Name of facility	1 = Hospital/ Health institution 2 = Drug vendor/ Pharmacy 3 = Shop 4=Community Based distributors 5 = Other (specify) ……	
44	Do you always get your contraceptive method when you are due?	1 = Yes 2 = No	
45	If your answer to Q.44 is "No", why?	1= Clinic stocked out 2 = No fare to travel to clinic 3= Busy 4=Others, (specify)……	
46	What do you do when you do not get your contraceptive method from the clinic?	1 = Purchase from the pharmacy 2 = Use of alternative method 3 = Do not use any method……. 4 = Others (specify) …… ……..	
47	Where would be the most convenient place for you to get contraceptives?	1 = Hospital 2 =Reproductive and child clinic 3 = Pharmacy 4 = Community Based distributers 5 = Other (specify) ……	

	Name of facility		
Part IV Attitude towards modern methods of contraception			
48	What would you regard as factors that would hinder you from using contraceptives?	1 = Refusal by partner 2 = Religious beliefs 3 = Unavailability of FP methods 4 = Inadequate financial support 5=Others (specify)…… ……	
49	If religious, please give an example	…… ……	
50	Do you discuss contraceptive methods with your husband?	1 =Yes 2 = No	
51	If Yes, how many times have you discussed ?	1 = Only 1 time 2 = Discussed sometime 3 = Discussed often 4 = I cannot remember	
52	What is your husband's or partners attitude towards contraceptive methods?	1= Approve 2 = Disapprove 3 = Don't know 4=Others, specify…… ……	
53	Does the community you live in support use of contraceptive methods?	1 = Yes 2 = No 3 = I don't know	
54	If No, why?	…….....	
55	Do you think your traditional/ cultural beliefs are against use of contraceptive Methods?	1 = Yes 2 = No 3 = I don't know	
56	If yes, which ones?	…… …… …… ……	
57	Do you get information on contraceptive methods?	1 = Yes 2 = No	
58	If yes, where do you get the information from?	1 = Health institutions 2 = Radio 3 = Newspaper 4 = TV's 5 = Friends 6 = Family members	

		7 = Others (specify) …… ……	
59	If your response to Q.50 is "NO" why?	1 = He does not approve 2 = It is against cultural norms 3 = Others Specify…… ……	
60	Whom would you comfortably talk to when you need to ask something about contraceptive methods?	1 = Husband/ Partner 2 = Relatives 3 = Friends of opposite sex 4 = Friends of the same sex 5 = Health care provider 6 = Others (Specify)…… …… …….....	
61	Who decides on the number of children you want to have?	1 = Husband/ Partner 2 = Myself 3 = Family members/ close relatives 4 = Parents 5 = Others (Specify)…… …… ……	

APPENDIX II: KEY INFORMANT INTERVIEW GUIDE

Hello. My name is David Maleche, a student at Masinde Muliro University of Science and Technology, carrying out research on the reasons for non-use of birth control methods among females residing in Eldoret town. You have been chosen to participate as a Community Health Volunteer in this area. My study will help identify and create awareness on the different aspects related to non-use of FP. The results will be used by the various health initiatives and stakeholders to resolve the disparity between the available family planning amenities and the population in need.

I will ask you questions that will require your verbal response. Please feel free to respond to the questions. All the information you give shall be treated as confidential. You may choose to participate or not. You may also withdraw from the interview without any penalty or consequences. There will be no financial reward for your participation. The interview will take approximately 30 minutes.

Interviewer' initials: ……
Respondent's number ……..
Name of the Study area----------
Date of interview ---------/---------/------Start time: ……End Time: …….
Signature---------- day----------month----------year.

1. How do you rate family planning practice in this estate?
2. What is the level of modern FP method knowledge among young adult Female in this area?
3. What are some of the barriers women in this community face in accessing and utilizing modern FP methods?
4. How has the government tried to eliminate social and economic barriers to modern? Contraception in this community?
5. Do you know if there are facilities that provide modern contraceptives at Subsidized costs in this settlement?

Thank you for your cooperation.

APPENDIX III: FOCUS GROUP DISCUSSION GUIDE

1. Have you ever used family planning methods?

a. If yes, for what purpose do you practice FP? ***Probe***

b. what are the advantages of FP method usage?

2. If no why?

3. In your own opinion what hinders women from practicing FP in this community?

4. For those married, do your spouses know what methods you are using?

a. If yes, what is their take on FP method use?

b. If No, why?

5. Do you talk about contraceptive usage with your friends?

a. If yes, what advice do they give?

6. What can you comment on actual service delivery by health service staff in this community?

b. What is the quality of counseling based on family planning?

7. What would you advice someone who seeks your opinion on FP practice?

8. What suggestions do you have on how to improve uptake of family planning in this community?

Thank for your cooperation and participation

APPENDIX IV: MAP SHOWING MAP OF THE STUDY AREA