

CONTRACEPTIVE UPTAKE AMONG WOMEN OF REPRODUCTIVE AGE
IN KAKUMA REFUGEE CAMP IN TURKANA COUNTY, KENYA.

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REG. NO: P57/PT/ 12355/ 2009

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF
PUBLIC HEALTH IN THE SCHOOL OF PUBLIC HEALTH, KENYATTA
UNIVERSITY.

AUGUST 2012

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*Contraceptive uptake
among women of*



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DECLARATION

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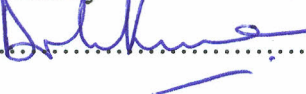
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DEDICATION

To my parents Christopher and Sarah Choge who taught me patience and hard work, as virtues to uphold. These virtues enabled me to accomplish this work.

ACKNOWLEDGEMENTS

My first appreciation goes to Almighty God for giving me the will, courage and resilience to attend this course and complete it within stipulated time.

Second, I would like to express my gratitude to my supervisors: Dr. Harun Kimani and Dr. Gaudencia Okumbe, both of Kenyatta University, for consistently offering guidance during the entire period of the study. Their availability and prompt attention as well as scientific excellence proved invaluable. I would like also to thank Kenyatta University School of Graduate Studies and Department of Community Health for giving me the privilege to advance my education.

Also, I am indebted to the senior management team of International Rescue Committee (IRC) that provided me with the chance to conduct data collection in Kakuma Refugee Camp. I am grateful for the cooperation and assistance I received from their staff. Special mention goes to Community Health Officer Mr. Melly Kipsang, who supported me with data collection and Dr. Festus Kiplamai, who assisted with data analysis. I would like to thank the respondents in each of the households visited for their patience while answering all the questions.

Finally, I am grateful to my parents and my immediate family members, whose inspirations encouraged me to further my education.

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LIST OF ABBREVIATION AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
AOP	Annual Operation Plan
BBT	Basal Body Temperature
BTL	Bilateral Tubal Ligation
CHW	Community Health Worker
DALYS	Disability-Adjusted Life Years
DMPA	Medroxyprogesterone acetate Depo - Provera
DRA	Department of Refugee Affairs
ESD	Extending Service Delivery Project
FGD	Focus Group Discussion
FP	Family Planning
IAWG	Inter Agency Working Group
ICPD	International Conference on Population and Development
IEC	Information, Education and Communication Materials
IDP	Internally Displaced Person
IUD	Intrauterine Devices
IRC	International Rescue Committee
IREC	Institute of Research and Ethics
KDHS	Kenya Demographic Health Survey
KRC	Kakuma Refugee Camp

LAM	Lactation Amenorrhea Method
LTPM	Long-Term Permanent Methods
MDG	Millennium Development Goal
MOH	Ministry of Health
MO	Medical Officer
NFP	Natural Family Planning
NHSSP	National Health Sector Strategic Plan
OR	Odds Ratio
PAS	Predictive Analytical Software
STI	Sexually Transmitted Diseases
SDM	Standard Days method
TFR	Total Fertility Rate
UNICEF	United Nation Children's Fund
UNHCR	United Nation High Commission for Refugees
UNFPA	United Nation Fund for Population and Development
USA	United States of America
WHO	World Health Organization
WRA	Women of Reproductive Age

ABSTRACT

Contraceptive prevalence rate is the proportion of women of reproductive age who are using (or whose partners are using) contraceptive method to prevent conception at a given point in time. Family planning promotion is a unique medical intervention because of its potential benefits, which include reduction of poverty, maternal and child mortality among others. Despite increasing contraceptive availability, unintended pregnancy remains a global problem, representing as many as 30% of all known pregnancies. Various strategies have been proposed to reverse this disturbing trend. However, several factors affect uptake of contraceptives. Little is known on the factors affecting uptake of contraceptives in Kakuma Refugee Camp. This was a cross-sectional study employing quantitative and qualitative designs to investigate the factors affecting uptake of contraceptives among women of reproductive age in Kakuma Refugee Camp. The study investigated the effect of demographic, socio-economic and cultural factors affecting use of contraceptives. The research instruments were a structured questionnaire, Focus Group Discussions and key informant interviews. The study subjects were 487 women in the reproductive age (15 – 49 years). Data was analysed using PAS software and descriptive statistics generated. In addition, chi square test and logistic regression analysis were used to determine the factors affecting uptake of contraceptives. Content analysis was employed on qualitative data. Findings showed that the current contraceptive prevalence rate was at 19.2 % with majority using the pill and injectable contraception. A total of 32.4 % did not know any method of contraception, and 10.7 % had heard of one method, 32.0 % had heard about two methods and 24.8 % had heard of about three or more methods. Result of logistic regression revealed that: the age of women, their education level, inter-spousal communication about family planning, awareness of contraceptive methods, and husband disapproval of family planning services had positive significant effect on contraceptive uptake. Those who belonged to the Muslim religion were more likely to use contraceptives (OR 2.1, chi square - 10.137, $p < 0.002$). Women with no education were OR 2.6 times more likely to use contraceptives $p < 0.0001$. Age group between 15-19 years old had positive significant effect on contraceptive use ($p < 0.0094$) OR 1.9. Married women had negative significant association with contraceptive use than unmarried women with significant $p < 0.001$ and OR 0.238. Contraceptive uptake remains low; therefore, effective educational and counselling interventions will improve consumers' knowledge and subsequent uptake of contraceptive usage.

CHAPTER 1: INTRODUCTION

1.0 Background of the Study

The provision of effective reproductive health care to populations affected by conflict and complex emergencies such as refugees poses special challenges (McGinn *et al*, 2004). Globally, refugees and IDPs are over 32.9 million people (UNHCR, 2006), yet reproductive health needs do not disappear upon displacement (Howard *et al*, 2008). Relief efforts have traditionally focused on acute-phase survival, including HIV prevention and basic emergency obstetric care (Howard *et al*, 2008). However, reproductive health spans relief and development and is essential for long-term survival (Howard *et al*, 2008). In many camp settings, fertility rates and maternal and neonatal mortality is high (Austin *et al*, 2008). The World Health Organization (WHO) estimated that 25–50% of maternal deaths among refugees was as a result of unsafe abortion, indicating considerable unmet need for contraception (Howard *et al*, 2008). However, despite moves to improve provision of family planning services, barriers to access and acceptability of contraceptives remain. A case in point is Kakuma Refugee Camp. Data on contraceptive prevalence show that there are large differences in contraceptive usage at the national level compared to the contraceptive prevalence in Kakuma refugee camp at 46% (KDHS, 2009) and 5% respectively (IRC, 2010).

The government of Kenya is hosting more than 460,000 refugees, settled in two refugee camps namely Daadab and Kakuma refugee camps (UNHCR, 2010). Kakuma Refugee Camp was established in 1991. The inhabitants of the camp suffer from poor relations with the local population and a near total lack of economic opportunity (UNHCR, 2010).

Kakuma Refugee Camp is hosting 85,581 refugees, from 12 different nationalities, these constitute refugees from Somalia, South Sudan, Ethiopia, DRC Congo, Burundi, Rwanda, Djibouti, Eritrea, Namibia, Tanzania, Uganda, and Zimbabwe. The average monthly registration rate of new arrivals for 2010 was about 6,000 individuals per month, with natural annual growth of approximately 2,500 babies born every year. Comprehensive strategies, including voluntary repatriation, local integration and resettlement; have helped many refugees find a durable solution but this can cover for only up to 2% of total population (UNHCR, 2010) and thus the need for promotion of family planning services in the refugee camps.

Globally, family planning (FP) is promoted as a mechanism to address the reproductive health needs of men and women, as well as the crucial challenges of rapid population increase. Reproductive rights rest on the respect of the basic right of all couples and individuals to choose freely and responsibly, the timing of conception of their children, the number of children to have, the time spacing of the children and access to the information and means to space them (WHO, 2008). The Alma Alta Declaration on Primary Health Care cited FP as one of the key strategies to achieve a better quality of life for all people (WHO and UNICEF 1978). In 2009, the Kenya Population and Housing Census showed that Kenya has 38.6 million people, with the total fertility rate of 4.6 children per woman for the three-year period preceding the 2009 survey. In sub-Saharan Africa, only 23 per cent of women of reproductive age use a modern contraceptive, even though a far higher proportion wants to avoid becoming pregnant soon or ever. An estimated 39 per cent of pregnancies in the region are unintended (UNFPA, 2009).

Maternal mortality remains unacceptably high in Kenya. The maternal mortality ratio is 488 deaths per 100,000 live births (KDHS, 2009). Maternal health is affected by poor coverage of health services, low quality staff, a lack of commodity security, inequitable access to skilled birth attendants, early age of first pregnancy and high unmet need for contraception (Koome *et al*, 2005). Access to family planning services is critical to Kenya's development and achievement of Vision 2030, without it, the Millennium Development Goals (MDGs) cannot be met.

One in four currently married women of reproductive age want to space or limit births but are not currently using any method of family planning in Kenya. The contraceptive prevalence rate is at 39 % for modern methods with the TFR of 4.6 (KDHS, 2009). The high fertility rate increases a woman's chances of dying from pregnancy-related causes, children are prematurely weaned and they suffer from malnutrition with its attendant poor mental and physical development with global acute malnutrition rate at 7.4 % (IRC, 2010). International evidence shows that, by reducing the number of births, the number of times a woman is exposed to the risk of mortality from pregnancy related causes is reduced (Campbell *et al*, 2006). One third of the total maternal deaths can be attributed to non-use or lack of availability of contraception (Cleland *et al*, 2006). Family planning also enables both the youngest and oldest women, whom pregnancy and childbirth is most risky, to either delay or limit childbearing. In addition, family planning can help a woman space her births. Increased birth intervals have positive outcomes for both the new born child and the older sibling (Rutstein, 2005).

1.1 Problem Statement

High fertility and infections have been found to be some of the major barriers to maternal and child survival in the refugee camp setting (Austin *et al*, 2008). The total fertility rate is 6 children per woman in KRC, yet most women do not use contraceptive methods. Contraceptive prevalence is at a mere 5 % despite efforts to reach women with information on the available family planning methods (IRC, 2010). Contraceptive methods available in KRC include both barrier methods, hormonal and long term permanent methods (IRC, 2010). High parity has been identified to be a major contributing factor to the high anaemia situation in the camp currently at 65.4 % thus increasing the risk of women to postpartum haemorrhage, a complication of pregnancy (IRC, 2010). The health program in KRC in the year 2010 reported ten maternal deaths in a population of 18,000 women in the reproductive age that is MMR of 558.3/100,000 live births, which is high compared to Kenya's MMR at 488/100,000 live births (KDHS,2009). Therefore, there is need to intervene in Kakuma Refugee Camp through family planning to lower the maternal mortality ratio and incidences of anaemia in the camp.

1.2 Justification

Family planning (FP) is one way of reducing the maternal mortality, high rates of child morbidity and promotion of optimum wellbeing (WHO, 2008). Comprehensive studies of reproductive health issues among refugees are still relatively rare (Howard, 2008). One third of total maternal deaths are attributed to non-use of contraceptives (Cleland *et al*, 2009). There is also a strong case for the need to scale up contraceptive use in the camp, the information identified in the study is useful for scaling up provision of family

planning services and contribute to attainment of MDGs 4 and 5 of reduction of child mortality and improve maternal health respectively. Studies on contraceptive use has not been undertaken to understand family planning in KRC, therefore this study specifically explored this issue.

1.3 Broad objectives of the study

The broad objective of the study was to determine the factors influencing contraceptive use and decision making on contraceptives among women of reproductive age in Kakuma Refugee Camp.

1.3.1 Specific objectives

Specific objectives for the study were:

1. To determine the current contraceptive prevalence rate.
2. To assess the knowledge of contraceptives among women in the reproductive age.
3. To assess the factors affecting uptake of contraceptives among women of reproductive age in Kakuma Refugee Camp.

1.4 Research Questions

The study explored the following research questions:

1. What is the current contraceptive prevalence rate in Kakuma Refugee Camp?
2. What is the current knowledge of contraceptive methods by women of reproductive age?
3. What factors affect uptake of contraceptive methods in Kakuma Refugee Camp?

1.5 Null Hypotheses

There is no association between demographic factors, socio-economic factors and cultural factors with contraceptive use among women of reproductive age in Kakuma Refugee camp.

1.6 Significance and output

There is scanty information available on factors affecting use of contraceptive methods among this refugee community. The study sought to contribute to the information gap by studying the factors affecting uptake of contraceptive methods. This study also helped to understand better the contraceptive prevalence in KRC. Information generated on factors affecting uptake of contraceptives is useful in tailoring FP services in order to increase contraceptive use. The study has generated information for the health sector to create effective programs to prevent maternal mortalities, including generating knowledge for policy direction for refugees and migrant health services.

1.7 Delimitation

The study was done in Kakuma Refugee Camp, Women of reproductive age living and residents of the camp and health care providers working in camp.

1.8 Limitations

The main limitation for this study was that the data were collected from female subjects, so there was no data regarding their partner's reasons on contraceptive use.

1.9 Assumptions

The assumption of this study was that the respondents gave information that was true based on their knowledge.

1.10 Conceptual Framework

The aim of the study was to determine the factors affecting contraceptive use among women of reproductive age in KRC. In the conceptual framework the independent factors are grouped into four categories: demographic, socio-economic, cultural, and programmatic factors. The relationship of these variables is illustrated in the figure below.

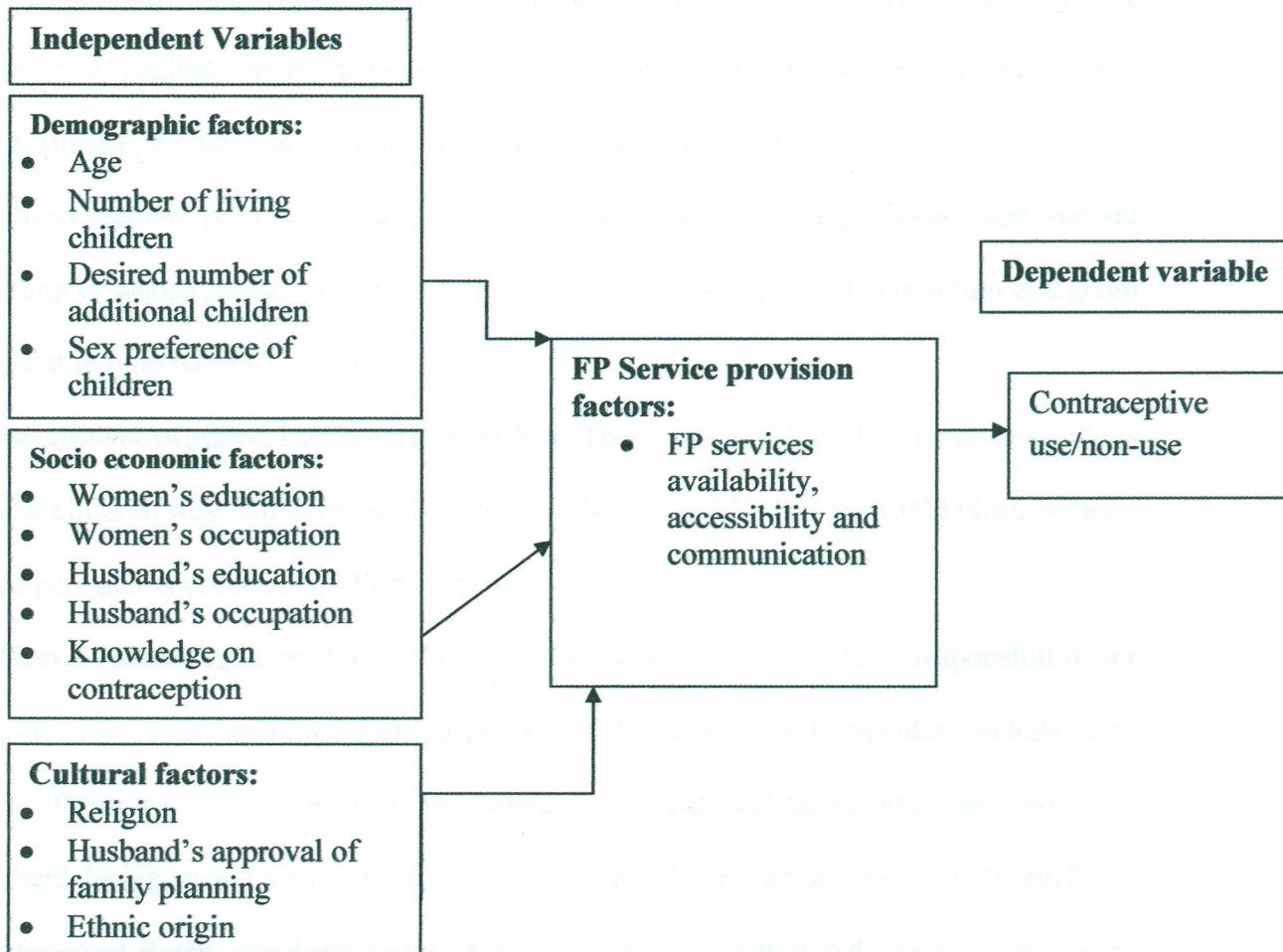


Figure 1.1: Conceptual Framework Source: Constructed from literature review

1.11 Definition of Terms

Abortion is the expulsion or removal of the foetus from the uterus at the stage of pregnancy when it is incapable of independent survival, before 20 weeks gestation with foetus weighing less than 500 grams (WHO, 2008).

A **miscarriage** is natural loss of pregnancy occurring during the first 20 weeks (WHO, 2008).

Contraceptive methods were sterilization - male or female; modern reversible methods-IUD, long-acting hormonal methods - injectables and implants, the pill, the condom, vaginal barrier methods and spermicides; and natural method such as periodic abstinence, withdrawal and other non-modern methods (WHO, 2008).

Contraceptive prevalence rate is the proportion of women of reproductive age who are using or whose partner is using a contraceptive method to prevent conception at a given point in time (IAWG, 2010).

Disability-Adjusted Life Years (DALYs): The number of DALYs lost among infants and children was estimated based on the number of DALYs lost per 1,000 births because of perinatal conditions (UNFPA, 2009).

Family planning provider is the individual who assumes primary responsibility for assessing a client and documenting services in the client record. Providers include those health facility staff that exercise independent judgment as to the services rendered to the client during an encounter such as nurses, clinical officers and doctors (IAWG, 2010).

Maternal death - the death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of the duration and the site of the pregnancy, from any cause

related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (IAWG, 2010). **Maternal death** is subdivided into two groups: **Direct obstetrics death**- those deaths resulting from obstetric complications of the Pregnant state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above (IAWG, 2010).

Indirect obstetric death- those deaths resulting from previously existing disease or disease that developed during pregnancy and which was not directly the result of obstetric conditions, but which was aggravated by the physiologic effects of pregnancy (IAWG, 2010).

Maternal mortality rate - the number of maternal deaths per 100,000 women of reproductive age (15-49 years) (IAWG, 2010).

Neonatal mortality rate - number of deaths in the neonatal period during a given time period per 1,000 live births during the same time period (IAWG, 2010).

Nulliparous is the medical term for a woman who has never given birth to a viable or live infant (IAWG, 2010).

Obstetric emergency is a condition associated with pregnancy necessitating immediate action (IAWG, 2010).

Perinatal period- commences at 22 completed weeks (154 days) of gestation (when birth weight is normally 500 g) and ends seven completed days after birth (IAWG, 2010).

Pre-existing condition is a condition which already exists before the woman becomes pregnant (IAWG, 2010).

Total fertility rate- the number of children who would be born per woman, if the woman was to live to the end of her child-bearing years and bear children at each age in accordance with prevailing age-specific fertility rates (IAWG, 2010).

Unmet need for contraceptive services was defined as women at risk for unintended pregnancy who were using a traditional method or no method (UNFPA, 2009).

Vaginal bleeding- any bloody vaginal discharge (pink, red or brown) that require the use of sanitary protection (pads, cloths or tampons) (IWAG, 2010). Different vaginal bleeding patterns include: Amenorrhea - no bleeding at all at expected bleeding times (IAWG, 2010). Menorrhagia - heavy bleeding that is twice as heavy as woman's usual bleeding (IAWG, 2010).

Women at risk for unintended pregnancy was defined as all women who are sexually active, are able to become pregnant, and either do not want any (more) children (limiters) or do not want a child within the next two years (spacers) (IAWG, 2010).

Women of reproductive age (or women of childbearing age) - refers to all women aged 15 to 49 years (WHO, 2008).

CHAPTER 2: LITERATURE REVIEW

2.0 INTRODUCTION

Family-planning programs are aimed at enabling couples and individuals to decide freely and responsibly the number and spacing of their children and to have the information and means to do so and to ensure informed choices and make available a full range of safe and effective methods (UNFPA, 2009). It is achieved through use of contraceptive methods and the treatment of involuntary infertility (WHO, 2008). The causes of contraceptive use can be classified into two general groups: demand side and supply side (WHO, 2008). These two groups are related and affect each other. Demand refers to the desire for contraception by couples to avoid pregnancy. The level of practising contraception depends on individual background or individual's status including level of education, occupation, and social economic status. Supply refers to all the support in practising contraception including accessibility of family planning services and social and cultural factors related to family planning services (WHO, 2008).

2.1 Global Picture on Family Planning

The Global Policy Forum reported that, worldwide, roughly 125 million women indicate a desire to plan their families but are not currently using any contraceptive method (Global Policy Forum, 2003). Preventing high-risk pregnancies through increasing the availability of family planning services could also save at least 25% of the women's lives and those of their children currently lost through pregnancy and childbirth (Cleland *et al*, 2006). On average a woman in the world now bears just 2.69 children (Longman, 2004) in her reproductive lifetime while a Kenyan woman bears 4.6 children (KDHS, 2009) respectively, and the refugee community 6 children per woman (IRC, 2010).

The 1994 Cairo International Conference on Population and Development (ICPD) recommended that FP programmes must be part of a wider approach to population growth regulation and health development (UNFPA, 2009). In recognition of the family planning importance, the WHO adopted a framework 2005-2014 for accelerated action to reposition family planning on national agenda and in reproductive health services. The framework, calls for increased efforts to advocate the recognition of the pivotal role of family planning in achieving health and development objectives at all levels (WHO, 2008). Family planning is essential in achieving three of the United Nations' Millennium Development Goals: reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria and other diseases (WHO, 2008).

2.2 Family Planning in Sub – Saharan Africa

In sub-Saharan Africa, only 17 % married women of reproductive age use a modern contraceptive, even though a far higher proportion want to avoid becoming pregnant soon or ever (Singh *et al*, 2009). Thirty-nine percent of pregnancies in the region are unintended, ranging from 30 % in Western Africa to 59 % in Southern Africa (Singh *et al*, 2009). Poor health which contributes to high mortality among women and newborns are unacceptably high in the region, for every 100,000 births, 903 women die of complications related to pregnancy and childbirth. The newborn death rate is 38 per 1,000 live births (Singh *et al*, 2009).

The benefits of meeting women's family planning and maternal and newborn health care needs would be dramatic and would include saving as many as 750,000 lives annually in Sub-Saharan Africa, if contraceptive were made available to women (Singh *et al*, 2009).

In addition, increased birth intervals have a positive outcome for both the new-born and the older siblings (Rutstein, 2005). In 2008, about 60 % of women (47 million) in sub-Saharan Africa region who wanted to avoid a pregnancy either were not using family planning or were using a traditional method (Singh *et al*, 2009). These women accounted for 91 % of unintended pregnancies. Meeting women's needs for modern family planning and the recommended standards of maternal and new-born care would result in major immediate health benefits. Unintended pregnancies would drop by 77 %, from 17 million to four million annually. Unsafe abortions would decline from 5.2 million to 1.2 million (assuming no change in abortion laws), and the number of women needing medical care for complications of these unsafe procedures would decline from 2.2 million to 500,000 (Singh *et al*, 2009).

A recent review of demographic health survey for countries in sub-Saharan Africa showed the relationship with the low contraceptive prevalence rate with high unmet need which has led to increased unintended pregnancies and increased maternal, infant and child morbidity and mortality (Fotso *et al*, 2009).

2.3 Family Planning in Kenya

New and far-reaching reforms in the health sector in Kenya are captured in the Second National Health Sector Strategic Plan II; 2005-2010 (MOH, 2005), which provide a framework for addressing reproductive health challenges in the National Reproductive Health Policy of 2007. In the policy, one of the objectives is to reduce the unmet need for FP. This strategy is aimed at reducing the Total Fertility Rate (TFR), scaling up contraceptive prevalence rate, covering the unmet FP needs and reducing the high maternal, infant, child morbidity and mortality respectively by 2012 (MOH, 2007).

Unmet need for contraception is a rights-based measure of family planning, that is, the degree to which individuals are able to translate their fertility preferences into action by ensuring that births occur by voluntary and informed choice (Muga *et al*, 2005). Reducing unmet need has been a priority in Kenya since the 1994 International Conference on Population and Development (ICPD) in Cairo, and the country has made major gains over time in the use of contraceptives, leading to a large and rapid decline in fertility in the early 1990s. Contraceptive prevalence has increased since 2003, from 39 to 46 % of married women (KDHS, 2009). In Kenya, public facilities provide contraceptives to more than half (57 %) of modern method users, while 36 % are supplied through private medical sources, and 6 % are supplied through other sources. In spite of the high level of knowledge of family planning and increases in contraceptive prevalence, fertility in Kenya remains high. All adult men and women in Kenya are able to name at least one modern method regardless of marital status and sexual experience (KDHS, 2009). Whilst Kenyan women know about family planning, they still lack all the knowledge they need. There is a need for the provision of education on family planning services and how to access them, the use of more effective contraceptive methods, as well as dispelling rumours and myths to reduce barriers. There is evidence that family planning was better understood in the 1990s in Kenya than today (Komme *et al*, 2005).

A quarter of currently married women in Kenya have an unmet need for family planning, which remains unchanged since 2003 (KDHS, 2009). Slightly less than half of married women (46 %) in Kenya are using a method of family planning. Most of them are using a modern method (39 % of married women); while 6 % use a traditional

method. Injectables are by far the most commonly used contraceptive method used by 22 % of married women, while pills are used by 7 % of women (KDHS, 2009).

2.4 Family Planning Methods

The World Health Organisation (WHO) defines Natural Family Planning (NFP) methods as those used for planning and preventing pregnancies through observing naturally occurring signs and symptoms of the fertile and infertile phases of a woman's menstrual cycle. Artificial Family Planning (AFP) are methods which prevent conception by application of any mechanical, chemical, surgical and pharmaceutical methods (WHO, 2008).

NFP methods include abstinence, the cervical mucus method (billings' method), the Basal Body Temperature (BBT) method, the sympto-thermal (multiple indicator) method, the rhythm (calendar) method, the Standard Days method (SDM), the Lactation Amenorrhoea Method (LAM) and coitus interruptus. AFP methods include hormonal methods such as oral contraceptives (Pills), injectable contraceptives often marketed locally as Depo- Provera (DMPA) and Implants. They also include barrier methods e.g. the use of physical barriers like diaphragms, condoms and cervical caps or chemical barriers like spermicides. Of these, the condom is the only method that may prevent sexually transmitted infections (STDs) including HIV/AIDS, if used correctly all the time. Other AFP methods include Intrauterine Devices (IUDs) and Long-Term Permanent Methods (LTPM) for example Bilateral Tubal Ligation (BTL) and Vasectomy (WHO, 2008).

2.5 Side Effects of Contraceptives

Clients who are considering contraceptive methods should be provided with adequate information on the benefits and potential side effects of these methods, along with other details on method initiation, correct use and removal, with their healthcare providers (Blumenthall *et al*, 2011). Thorough knowledge and understanding of the contraceptives' advantages and disadvantages will allow women to make an informed decision about the methods that best suit their individual needs (Frost *et al*, 2004). Common side effect reported with use of hormonal methods include changes in bleeding patterns such as lighter bleeding (spotting) and irregular bleeding. Others side effects include: headaches, dizziness, nausea, breast tenderness, weight changes, mood changes, acne and blood pressure changes. Menorrhagia and amenorrhea are frequently reported within the first year of using hormonal contraceptives (Blumenthall *et al*, 2011). Side effects such as excessive bleeding and pain are reported as the most common reasons for discontinuation of contraceptives (Blumenthall *et al*, 2011).

2.6 Benefits of Contraceptive Use

Family planning is a key intervention for improving the health and wellbeing of women and their families (Cohen, 2008). It provides couples and individuals the means to prevent unwanted pregnancies and time the formation of their families (Cohen, 2008). Family planning has wide-ranging benefits for sexual and reproductive health, including enabling women to exercise choice and control over their fertility; reducing the risk of STIs, including HIV transmission; advancing gender equality, and increasing women's opportunities for education, employment and full participation in society (Cohen, 2008).

In terms of medical benefits, contraceptive use (together with maternal health services) minimizes the adverse health effects of unintended pregnancy and high-risk births, including unsafe abortion, haemorrhage, infection, anaemia, low birth weight and malnutrition (Singh *et al*, 2009).

When women are unable to practise family planning, they have unintended pregnancies. Unintended pregnancies are more likely to end in abortion (Rustein, 2005). In Kenya, where abortion has been illegal under most circumstances, this abortion is likely to be unsafe and extremely risky for women (Komme *et al*, 2005). In Eastern Africa, about one in five maternal deaths is due to unsafe abortion (Singh *et al*, 2009). Each year, an estimated 21,000 women are admitted to Kenyan public hospitals for treatment of abortion complications (Koome *et al*, 2005). Family planning can prevent many of these unintended pregnancies in the first place. Roughly 750,000 lives would be saved annually- 200,000 among women (a 69 % decline in maternal mortality) and 550,000 among new-borns (a 45 % decline in new-born deaths) (Singh *et al*, 2009). The number of healthy years of life lost because of disability and premature death among women and their new-borns would decline by nearly two thirds, from 61 million to 22 million disability-adjusted life years (DALYs) lost (Singh *et al*, 2009). Greater use of condoms for contraception would reduce the transmission of HIV, other Sexually Transmitted Infections (STI) and reduce infertility, thereby helping to curb the AIDS pandemic (Singh *et al*, 2009). Greater integration of HIV prevention, family planning and maternal health services would be even more cost-effective, for example, by helping HIV infected women avoid unintended pregnancies and helping pregnant women living with HIV protect their babies' health (Singh *et al*, 2009).

Women with unintended pregnancies, including those resulting in live births, are also at greater risk of death and morbidity, adverse behaviours such as smoking, drinking and physical violence by their partners (Goodwin *et al*, 2000). Global evidence supports a relationship between unintended pregnancy and insufficient participation in prenatal care, as well as low birth weight (Blumenthal *et al*, 2011). Children born as a result of untimed or unwanted conceptions may suffer from deficits in developmental skills (Blumenthal *et al*, 2011), and be at higher risk for abuse or neglect (Blumenthal *et al*, 2011). In addition, unplanned pregnancies often disrupt parents' life plans, including educational or professional ambitions, limit the resources available for previously born children and compromise the family's current and future financial security (Gaffikin, 2010). Population growth and pressures raise global concerns about the future availability and quality of food and fresh water supplies, energy shortages, land use and environmental degradation. The role of population growth in exhausting these resources and environmental services is an increasingly important global issue (Gaffikin, 2010). If access to family planning services was increased, the unmet need for family planning could be met, thereby slowing population growth rate and reducing the costs of meeting MDGs in terms of universal primary education, which is influenced by the number of children in need of education (Moreland *et al*, 2006). In addition, family planning keeps girls in school, increases female labour participation, lowers infant and child mortality and improves childhood nutrition, reduces public sector spending on health and education, gives potential for higher economic growth, and reduces pressure on natural resources (DFID, 2010).

2.7 Fertility and Family Planning in Refugee Communities

Evidence in respect of fertility desires amongst forced migrants has been equivocal, with both an inclination to replace lost children and a reluctance to assume the burden of parenting within conditions of such extreme uncertainty being reported (McGinn *et al*, 2004). A comparison of fertility levels among two groups of Khmer refugees for six months after their arrival in two camps in Thailand during 1979-1980 showed that, actual and projected birth rates and pregnancy rates differed by refugees' socio-economic and educational status (McGinn *et al*, 2004). The birth rate of those who had lived in urban areas, relatively well-educated and had been economically better-off, was similar to the rate before the war in Cambodia, and remained fairly constant through the six months of observation and was not projected to change substantially in subsequent months (McGinn *et al*, 2004).

Data compiled by the Centre for Research on the Epidemiology of Disasters on Sudanese refugees living in two camps in Ethiopia (Bonga and Fugnido) in response to similar emergencies, also illustrate differing fertility patterns among migrants from the same country (though from different ethnic groups) (McGinn *et al*, 2004). Monthly crude birth rates from February 1993 to July-August 1996 showed an increase in Bonga (from about one to more than four per 1,000 population) and a decline in Fugnido (from more than three to less than one per 1,000) (McGinn *et al*, 2004). The researchers attribute the increase in Bonga to a desire to repopulate following a massacre, as well as to better camp organization and better patient compliance with health advice, and the decline in Fugnido to the harsh environment and to poor facilities and health services (McGinn *et al*, 2004). In summary, these studies, as well as other fertility reviews, suggest that no common fertility pattern emerges among refugees (Howard *et al*, 2008).

The immediacy and severity of an emergency may affect short-term response, but in the long term refugees' fertility appears to be influenced by social and demographic factors long associated with fertility change such as age, socio-economic status, education and urban or rural residence (Howard *et al*, 2008).

2.8 Ethics of Contraceptive Advocacy on Refugee Population

Refugees and those displaced through conflict and natural disasters hold no lesser claim to the fundamental rights to health than those living in stable situations (Austin *et al*, 2008). The 1994 ICPD programme of action specifically included displaced populations in its affirmation of the link between existing human rights treaty provision and reproductive rights (Austin *et al*, 2008). From the earliest stages of an operation, relief organizations should be able to respond to refugees' demand for contraceptives (UNHCR, 2010). As the situation stabilizes a range of safe and effective modern methods of family planning, approved by WHO should be available. Provision of family planning services requires financial resources, appropriately trained staff and a reliable supply of materials (UNHCR, 2010). Providing a full range of family planning services will usually not be feasible until the situation has stabilized. A refugee situation is considered "stabilized" when the crude mortality rate falls below one in 10,000 per day, when there are no major epidemics, and when the "settled" refugee population is not expected to repatriate or relocate within six months (Sphere, 2004). The crude mortality rate and under five mortality rates in KRC is 0.21/1000/month, and U5MR 0.59/1,000/month respectively (IRC, 2010) and thus this is considered a stable camp setting (Sphere, 2004).

2.9 Factors Affecting Contraceptive Use and Non-use

Unintended pregnancies are common among women of all backgrounds regardless of age or socioeconomic, racial, ethnic, religious or marital status. However, some demographic and socioeconomic characteristics appear to influence the prevalence of these pregnancies. In the USA, a greater risk for unintended pregnancy was reported in young women who are aged 18–24 years and in women who had not graduated from high school (Finer *et al*, 2006). According to the most recent demographic and health surveys from 41 countries, unwanted births in the poorest quintile of the populations were more than twice that observed in the wealthiest quintile (Gillespie *et al*, 2007). Domestic violence was also recognized as an important contributor to unwanted pregnancy, as women who experience sexual, physical and psychological abuse may be more prone to risky sexual behaviours and less able to use contraceptives correctly or consistently or negotiate contraceptive use with a partner (de Bruyn, 2000). Four priority factors, namely demographic, socio-economic, cultural, and family planning service provision factors are further reviewed below.

2.9.1 Demographic factors

The demographic characteristics such as number of living children and desire for additional children play an important role in determining the use of contraception. Parity is a factor, as parous women in one refugee study were more knowledgeable about family planning than nulliparous women and the number of living children influenced the use of contraceptive positively (Howard *et al*, 2008). In Kenya, younger women are adopting family planning at lower parities, when they have fewer children than older women (age 45-49). Only 5 % of married women used contraception before having any

children, and 11 % used contraception by parity 1 (KDHS, 2009). The existing literature indicates the various conceptualizations on the preferred number of children including “desired family size”, “ideal family size”, and “expected family size” (Singh *et al*, 2009). The mean ideal family size in Kenya among men aged 15-49 is slightly higher than for women (4.0 versus 3.8, respectively), a pattern that has remained unchanged over time (KDHS, 2009).

2.9.2 Socio-economic factors

The reasons for the under-utilization of contraceptives are multifactorial. Access to contraceptive supplies and services continues to be a barrier to use, particularly in low-income areas (WHO, 2007). Women who have access to family planning programs may be unable to obtain contraception due to supply shortages, provider bias, limitations on the type of healthcare worker who can dispense contraceptives, or policies limiting contraceptives in specific groups such as adolescents, nulliparous or unmarried women. Contraceptive non-use has also been attributed to lack of knowledge (myths and lack of/poor sexual education) and the disapproval of spouses and family (WHO, 2007). Comprehensive sexuality education in schools, which provides factual information about a broad range of sex-based topics, is effective in increasing contraceptive use among teens (Kirby, 2007). Although such broad education programs may help avoid unwanted pregnancies, in many areas of the world, they have not yet been introduced, are in early stages of development or are beset by controversy (Kirby, 2007). Negative attitudes toward contraceptives, most notably, fear of adverse health effects, contribute to contraceptive non-use, discontinuation or method switching (WHO, 2007). Cost also plays an important role in suboptimal contraceptive utilization, as specific contraceptives

and attendant healthcare services may be too expensive for some women (Blumenthall *et al*, 2011).

Many studies have documented the relationship of female education to the decline in fertility. It was recognized that education is the primary factor contributing to rise in contraceptive use (UNFPA, 2009). Contraceptive use increases dramatically with increasing level of education. Sixty percent of married women in Kenya with at least some secondary education use a contraceptive method compared with 40% of women with incomplete primary education and only 14% of those who never attended school. When literacy of women improves, fertility rates tend to decrease due to contraceptive use. Similarly, fertility rates tend to be lower where women have access to decent jobs, good health care, and family planning resources which are more available in urban areas than in rural areas (KDHS, 2009). According to a study on reproductive needs of refugees in Guinea, female respondents were almost five times more likely to know about family planning methods than were male respondents (Howard *et al*, 2008). Husband's education is often associated with women's reproductive behaviour and helps to increase family planning awareness and attitudes in the family (Howard *et al*, 2008).

2.9.3 Cultural factors

Societal morals and values are often embedded through socio-cultural experiences like religion that promote chastity and mould attitudes towards contraception for the society. According to a study by ESD project in Daadab Refugee camp in Kenya, adult females viewed modern FP methods such as pills and injectables as "health procedures" and agreed that they don't support family planning because religion prevents them from using family planning (ESD, 2008). In addition, the Roman Catholic Church (RCC)

bases itself on the papal encyclical *Human Vitae* (Pope Paul VI, 1968) to teach that every sexual act of a married couple must remain open to the transmission of life (Nakiboneka *et al*, 2008). A study in Kenya, by the ESD project in Daadab Refugee Camp found that the majority of respondents indicated that while most couples do not discuss FP, the father is the primary decision maker on all issues, including deciding whether or not to practise child spacing. The religious leaders and male youth explained that the Somali culture views men as the head of household because Islam dictates that men have the final say (ESD, 2008).

2.9.4 Family Planning Services Delivery Factors

It is evident that family planning programmes lacking adequate infrastructure, supplies, and trained personnel may not provide good quality of care (RamaRao *et al*, 2003). Factors influencing facility readiness may range from system-wide targeted interventions, such as public and private investments in family planning service delivery; management and training of the required personnel, health system laws, and regulations including standards and guidelines (RamaRao *et al*, 2003). Providers of reproductive health information and services are critical conduits through which clients obtain family planning services and counselling, upon this basis clients may make informed decisions about contraceptive use (Abdel-Tawab *et al*, 2002). Several barriers may also limit providers' ability or willingness to provide quality care. Knowledge gaps, including both community myths and insufficient knowledge and skills among providers, represent one type of barrier (Best, 2002). Other factors include medical barriers and practises based on medical rationales that limit clients' access to contraception (Speizer *et al*, 2000). An examination of quality of care in five African

countries showed that a large proportion of providers imposed restrictions on family planning based on client characteristics such as age, marital status, spousal consent and number of children (Creel *et al*, 2002). On the other hand, some providers may believe that they are in a better position to choose the most appropriate method for the client while others may be biased toward certain methods, and hence preclude the client from choosing his or her own method (Creel *et al*, 2002).

Documented studies have identified that improved family planning service delivery is an important factor related to the increase in contraceptive use and the decline of fertility in the developing countries (UNFPA, 2009). Availability of a wide range of services gives greater room for choice. In KRC contraceptives available include male and female condoms, oral contraceptives (Pills), injectable contraceptives, implants, IUDs, BTL and vasectomy, which are provided free of charge to all refugees (IRC, 2010).

CHAPTER 3: METHODOLOGY

3.0 Introduction

This study was conducted in Kakuma Refugee Camp from March 19th to April 27th 2011. The camp was established in 1992, located in Turkana County in North Western Kenya. The Turkana County borders the countries of Ethiopia, Uganda and Sudan and the Kenyan counties of West Pokot, Baringo, Samburu and Marsabit. Kakuma camp was originally established for the Sudanese people fleeing conflict in their country which is located approximately 127 kilometres from the camp. Since 1992, Kakuma has become home to people from more than eight countries who are also fleeing conflicts and civil strife (UNHCR, 2010). The camp is geographically isolated from the rest of Kenya by rough terrain, barren landscape surrounded by extinct volcanic mountain ranges and Lake Turkana. The camp is divided into 4 main parts: Kakuma 1, Kakuma 2, Kakuma 3 and Kakuma 4, which are further divided into blocks or groups.

At the time of the survey the populations of people residing in Kakuma camp included: Somali, Sudan, Ethiopia, DR Congo, Rwanda, Burundi, Uganda, Eritrea, in addition to less than five people from each of the following countries: Djibouti, Namibia, Tanzania, and Zimbabwe. The International Rescue Committee is the agency providing health care services in camp since 1992. IRC's program primarily focuses on comprehensive and integrated primary health care, which includes nutrition, HIV, TB, sanitation, preventive and curative services.

3.1 Research design

This was a descriptive cross-sectional study, where both qualitative and quantitative methods of data collection were used. Focus Group Discussions (FGDs), key informant interviews and structured questionnaires were used to collect data.

3.2 Variables

Independent variables used in this study comprised demographic factors, socioeconomic factors and cultural factors. The dependent variable was current contraceptive use.

3.3 Location of the study

The study was carried out in the community at the Kakuma Refugee Camp. It is an approximate geographical size of 10.7 square kilometers. The camp has one hospital and three health care clinics providing curative outpatient services, preventative health care services and reproductive health activities such as safe motherhood; ante- and post-natal care and family planning. These services are provided by a team of 3 medical officers for a population of 85,000 people (Sphere Standard is 30,000/1 MO full time equivalent), 4 clinical officers, 2 nurse midwives, 16 general nurses and 105 CHWs.

3.4 Target Population

The target group for this study was refugee women residing in Kakuma Refugee Camp.

3.5 Study Population

The study population was refugee women of reproductive age (15-49 years) meeting the inclusion criteria in Kakuma camp. The total population of women in reproductive age was 18,346 at the time of study, as shown in the table below.

Table 3.1: Kakuma Population - Women

AGE GROUP	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	Grand Total
Sex F	4,151	4,667	3,052	2,243	1,945	1,503	785	18,346

Source: UNHCR updates 2010

3.6 Inclusion criteria

- All eligible sampled respondents were included. These include women of reproductive age 15-49 years who have been resident in Kakuma camp for not less than six months and service providers in health facilities in MCH and maternity units for key informant interview.
- Women aged 15 years but less than 18 years were included in the study with parental consent.

3.7 Exclusion criteria

- Women who are resident in the camp for less than 6 months were excluded. Women aged below 15 years and those above 49 years with children were also excluded and respondents who did not give informed consent.

3.8 Sample Size and Sampling Technique

The researcher used two stage stratified random sampling technique which was grounded on the need to ensure the representativeness of the respondents in this study.

The total population was greater than 10,000 and thus the formula for sample size calculation was taken from (Fisher *et al*, 1998) below;

$$n = \frac{z^2 pqD}{d^2} n = \frac{1.96^2 \times 0.15 \times 0.85 \times 2}{0.05^2} = \text{the total sample } n=392$$

Where: n = the desired sample size; z = the standard normal deviation, which corresponds to 95% confidence level (1.96); p = the proportion with particular characteristic (contraceptive uptake which is 0.15; $q = 1.0 - p$ and d = degree of accuracy desired, set at 0.05 and design effect set at 2 due to homogeneity of strata's, the six strata's identified were homogeneous with similar characteristics.

The study aimed at visiting 392 women in their households in the community using a two-stage stratified sampling, proportional to population size. In the first stage 6 strata's were selected from a comprehensive list of all sections of the camp per nationality. In the second stage women from households were selected proportionate to population size using systematic random sampling approach based on the population of each stratum. The study interviewed 487 respondents based on stratifications. A minimum of 30 respondents per strata were interviewed to ensure it was representative, thus 3 small stratum with a population of less than 5 % had at least minimum of 30 respondents contributing to higher sample size than planned.

Table 3.2: Sample Targeted

Category	Number		
1. Strata at the community	6 strata proportionate to population size (respondents)		
	Total Population (including women in reproductive age (WRA))	% of total camp population	Sampled
	WRA- 10,007 Somali- Total- 43,512	54.3%	212
	WRA- 5,805 Sudan-Total- 25,243	31.5%	123
	WRA- 1,426 Ethiopia- Total - 6,204	7.5%	30
	WRA- 25 Eritrea- Total 111	0.1%	30
	WRA- 117 Uganda-513	0.6%	30
	WRA-1,046 Great Lakes- 4,550	3.7%	30
	Total	100%	455

3.9 Research Instruments

The instruments used in this study were structured questionnaires, with a total of 40 closed and open-ended questions which was developed by the researcher based on extensive review of existing related research and relevant literature to serve the objectives of the study. A total of 10 key informant questions guides were used for key informant interviews with health care workers. FGD discussion guides were used for FGD with women in the community. During the data collection stage of the study, six FGDs were conducted in the community. Participants who attended the FGDs were all women of reproductive age, irrespective of use or non-use of family planning. Each FGD was attended by 10 to 12 participants each time. These groups were selected using simple random sampling. The venues used for the FGDs included hospital premises and community rehabilitation social halls.

3.10 Validity

Validity was ensured through pre-testing of the questionnaire developed with reference to similar tested and validated studies such as KDHS. In addition, three experts: Kenyatta University supervisors, Dr Harun Kimani and Dr Gaudencia Okumbe and UNHCR- Medical Coordinators further reviewed the questionnaire to ensure content validity- accuracy, relevance and language appropriateness before pretest. This panel was selected to check on the quality of questionnaire and UNHCR role and responsibilities, which included ensuring protection and prevention of violations of rights of refugees.

3.11 Reliability

Reliability was ensured through the use of a well-designed questionnaire. In addition, research assistants were trained and supervised during data collection, including daily checking and correction of completed questionnaires. A Pre-test was done two days before the study to 27 respondents in order to test the tool and ensure true and accurate answers. It was revised and adjusted before using with the actual subjects.

3.12 Data collection

An interviewer - administered structured questionnaire was used as the survey tool for the study. Three days of intensive training workshop on survey design and purpose, questionnaire administration and collection was conducted to a team of 5 research assistants and 10 language translators at IRC Hospital in Kakuma. There were five teams, each consisting of one interviewer, two translators, and research assistants who were responsible for coordinating the research team and data collection procedure. The questionnaire was designed in English and pre-tested for any interpretation errors. All

research assistants were professional health care workers, 3 of whom were Nurses and 2 were Water and Sanitation Program Managers.

Information on knowledge of contraception was collected during the survey by asking women to name ways or methods by which a couple could delay or avoid pregnancy. Through the methods they knew of or had heard about. In this manner, information about nine artificial modern methods (female sterilization, male sterilization, the pill, intra-uterine device (IUD), injectables, implants, barrier methods (male condoms and female condoms), and emergency contraception) and three natural methods (rhythm or calendar method, withdrawal and lactational amenorrhoea,) were collected. In this study women who reported using a contraceptive method at the time of the study were asked where they obtained the method the last time they acquired it. Research assistants were instructed to note the full name of the source or facility such as IRC Refugee Hospital, Mission hospital, Government Hospital and private health centre since some women did not know the exact category of their source. This practice was designed to improve the accuracy of source reporting.

3.13 Data analysis and Presentation

The data in the questionnaires were examined at the end of each data collection day, to check for completeness and accuracy. The data sets were then coded and entered into analytical software. The Predictive Analytics Software (PAS) was then used to analyse the data obtained. Descriptive statistics including percentages and means were used to describe the characteristics of the sample. Inferential statistics were used as follows; chi square test used to determine association between independent variables and contraceptive use and logistic regression analysis, which was employed to predict the

probability of contraceptive use with significance level of $p < 0.05$. Logistic regression was used to examine the relationship between independent variables and contraceptive use. In this model the dependent variable was dichotomous (contraceptive use or non-use) with a link with independent variables to investigate associations. The variable entered in the model was current contraceptive use, and tested among other variables. These included age of women, marital status, the level of education and employment status of women, desired number of children, inter-spousal communication, religion, awareness to contraceptive methods and husband's occupation and approval to use contraceptives. Data was presented in forms of tables, figures and narration.

3.14 Ethical Considerations

The proposal was approved by Research and Ethics committee at Kenyatta University. The Ministry of Higher Education, Science and technology, the Department of Refugee Affairs (DRA) and IRC gave consent to conduct the study at the camp Hospital. Informed consent was taken from all study participants and in addition, informed consent was taken from guardians (parents and grandparents) of participants included in the study but were less than 18 years old. Participants who did not give informed consent were not included in the study and information on family planning was provided to them. Names or any other form of identifications were not used to ensure confidentiality.

CHAPTER 4: RESULTS

4.0 Introduction

This chapter presents results and discussion from the study, it is divided into different sections which includes; preparation of data, statistical analysis, results, and the main discussion. This section describes the demographic and socio-economic characteristics of the study participants, general information regarding contraception, knowledge of contraceptives, factors influencing contraceptive use, factors influencing decision on contraceptive use and actual use of contraceptives. In this section also chi square analysis was conducted to explore the factors affecting the current contraceptive use among the study population.

4.1 Socio Demographic Characteristics

A total of 487 women, who were included in the study, completed the questionnaire satisfactorily: 29.4% refugees from Sudan, 46.2% from Somalia, 6.8% from Ethiopia, 6.4% from Eritrea and 11.3% from Great lakes (Uganda, Burundi, DRC Congo and Rwanda). The socio-demographic data are presented in table 4.1. It shows that the largest group of subjects or 25.2% were between the ages of 20-24 years, the second largest were between the ages of 25-29 years old at 21.6%. Only 4.1% were between the ages 45-49 years, the mean age was 24.7 (range = 15-49) years. Majority of the contraceptive users were in the age group 20-29 years (57.2%). However the result of the model reveal that women in the age group 15-19 years old had positive significant effect on contraceptive use ($p < 0.0094$). The logistic coefficient indicates that women in

this cohort are more likely to practise contraception about 1.9 times higher than the other age groups.

Majority (52.4%) of the respondents had attended school with most of them having attended primary level of education (65.7%). This was followed by secondary level, which was about a third (24.2%). Only 1.6% had graduated from middle level colleges. Almost half of the respondents were Muslims (48.9%) and 44.6% were Christians and they were mostly (29.8%) of the protestant denomination and 14.8% were Catholics. It was found that close to three quarters of the subject's or 83.4% were unemployed and 66.6% of their partners were unemployed. The study also found out that 44.9% of respondents had lived in Kakuma Camp for more than five years, at the time of the study.

Table 4.1: Distribution of sample respondents by characteristics

Characteristics	Sub-groups	Frequency (n)	Percentage (%)
Age groups	15-19	72	14.8
	20-24	122	25.2
	25-29	105	21.6
	30-34	68	14.0
	35-39	75	15.5
	40-44	25	5.2
	45-49	20	4.1
	Total	487	100
Marital status	Married	333	68.4
	Single	50	10.3
	Separated	51	10.5
	Widowed	43	8.8
	others	10	2.1
	Total	487	100
Religion	Protestant	145	29.8
	Catholic	72	14.8
	Muslim	238	48.9
	Others	32	6.6
	Total	487	100
Women Education	Primary level	163	33.5
	Post Primary	21	4.5
	Secondary	60	12.0
	College/Middle level	4	1.00
	No education	239	49.0
	Total	487	100
Women Occupation	Unemployed	406	83.4
	Casual job	3	0.6
	Self employed	22	4.5
	Employed	22	4.5
	others	34	7.0
	Total	487	100
Husband Occupation	Unemployed	233	66.6
	Casual job	10	14.6
	Self employed	51	2.9
	Employed	51	14.6
	Others (single without spouses)	142	1.4
	Total	487	100
Nationality	Sudan	143	29.4
	Somalia	225	46.2
	Ethiopia	33	6.8
	Eritrea	31	6.4
	Great Lakes	55	11.3
	Total	487	100

4.1.1 Marital and other characteristics

The findings showed that two thirds (68.4%) of the respondents were married or living with a partner at the time of the study. Some respondents (14.2%) had no children at the time of the interview or had never given birth. Among the total respondents (15-49 years) 31.2% had 1-2 children and 29.8% had more than five children. The mean number of children ever born rise monotonically with the rising age of women as expected in a normal population. The desired family size ranged from 1-10 children, with the mean desired family size of 6 children.

Because the reproductive period is biologically limited (15-49 years), the onset of childbearing has a direct effect on fertility. Majority of the respondents (60.3%) gave birth to their first child between the ages 15-19 years portraying a longer reproductive span. Other findings from the study indicate that women with at least secondary education begin childbearing more than four years after women with no education (21.1 and 16.5 years, respectively), with chi square of 32.895, df 4 and $p < 0.0001$.

Table 4.2: Other characteristics

CHARACTERISTICS	SUB-GROUPS	NUMBER (N)	PERCENTAGE (%)
Age at first birth	<15	25	6.1
	15-19	249	60.3
	20-24	112	27.1
	25-29	21	5.1
	>30	6	1.5
	Total	413	100
Number of children they have given birth to	Pregnant	9	2.0
	Para 1-2	152	36.0
	Para 3-4	112	27.0
	Para 5 and above	145	35.0
	Total	418	100

4.1.2 Cultural Characteristics

Figure 4.1 presents the frequency distribution of the sample population by selected cultural characteristics, such as partner's approval of family planning. Among the total 487 study participants, the findings show that about 28.4% of their partners don't approve use of contraceptives, but a higher proportion of partners (45.4%) approve family planning. Concerning decision making in the family, majority of the respondents 74.9% made decision together on the use or non-use of contraceptives, while 9.9% were mainly their partner's decision and 10.7% was mainly the user decision to use contraceptives. A total of 8.9% of the current users of contraceptive methods reported that their partners did not know they were practising family planning.

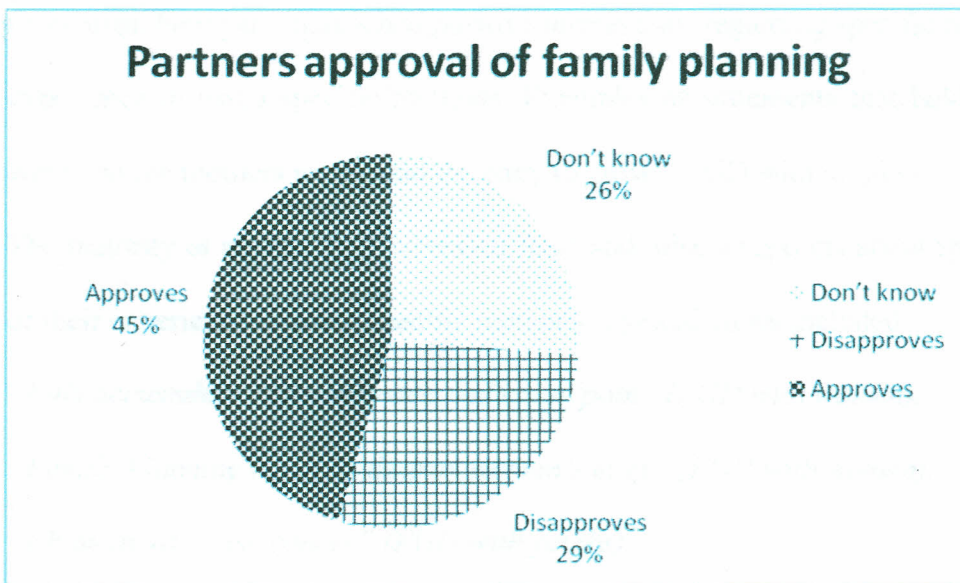


Figure 4.1: Partners Approval of family planning

4.2 Knowledge of Contraceptive Methods

A total of 32.4% of all respondents had not heard or didn't know any method of contraception and 10.7% of all respondents had heard of at least one method, 32.0% had heard of two methods and 24.8% had heard of three or more methods. Findings showed that the most widely known methods of contraception were pills (40.9%) and injectables (36.3%). The least known methods were abstinence, IUD, sterilization for both male and female, rhythm methods and lactation amenorrhea method (LAM).

From FGD, the most commonly known methods were injectables, followed by pills. Other methods that were mentioned in fewer groups were rhythmic, female sterilization, diaphragm and condom. Generally, peoples' views about FP could be divided into two categories. Few participants had positive impressions regarding specific methods or their experience in using specific methods. Examples of statements that held FP positively were: "allow mothers to rest and the baby to grow" (FGD with youths).

The majority of participants expressed fears and misconceptions about specific methods or their experience in using specific methods. Typical views included:

"Pills accumulate in the stomach and cause pain" (FGD with women).

"Family Planning methods destroy woman's eggs" (FGD with women).

"FP methods cause cancer" (FGD with youths).

"Injections and pills usually have serious side effects and that is why husbands do not allow wives to take them" (FGD with women).

Other qualitative findings showed that participants were familiar with the term family planning although they demonstrated limited understanding of the topic when they were asked to define it. Participants were more familiar with the concept of child spacing and

limiting family size for the health of the mother and child and for the welfare of the family. Some examples of what family planning meant included *“Decisions made by couples or individuals on how many children one should have and when to have them according to their capacity to care for them” (FGD with youth)*. *“Family planning is resting from births for 42 days” (FGD with Somali women)*.

Less favourable and skeptical expressions were made by women such as: *“It is a good idea although the majority of people are still opposed” (FGD with youths)* and *“Family planning methods are bad as they cause pelvic infections and goiter” (FGD with women Somali)*. The only advantage that was mentioned for limiting child bearing was *“It enhances parents’ capacity to care for their children.”* No group mentioned the health benefits to the mothers and children as expected. It seems that these are not well known among the participants. Some participants mention that it can cause divorce due to grief and Somali men need more children.

On multivariate analysis, the results showed that women who have heard at least one contraceptive method are predicted to use contraception more than 3.6 times higher than those who have not heard any method $p < 0.001$.

4.3 Ever use of Family Planning Methods

Table 4.3 shows the percentage of all women who had ever used specific methods of family planning. A total of 24.2% of all sampled women reported that they had ever used a method of contraception. The most commonly ever used methods among women were injectables (36.4%) and pills (36.4%), a small percentage reported they had ever used abstinence, condom, implants, rhythm method and sterilization. Some factors such

as married women had association with contraceptive use with chi square of 25.065 with $p < 0.0001$, nationality showed significant association with contraceptive use with chi square of 73.947 and $p < 0.000$. Other factors with association with ever use of contraceptive include religion, employment status, partner occupation and education level as shown in table 4.5 below.

Table 4.3: Chi square statistics for previous use of contraceptives

Dependent Variable	Independent Variables	Chi Square	df	p-value
Ever used a method to delay or avoid pregnancy (n =118)	Age	17.82	6	0.007
	No. of children	18.347	4	0.001
	Mar. status	25.064	4	0.000
	Age 1 st birth	12.428	4	0.014
	Length of stay	14.876	4	0.005
	Nationality	73.947	8	0.000
	Religion	16.735	3	0.001
	Employment	21.848	4	0.000
	Partner occupation	35.262	4	0.000
	Educ. level	23.03	4	0.000

4.4 Current Use of Contraceptive Methods

Table 4.4 shows that slightly less than a quarter of women in the reproductive age (19.2%) are currently using a method of contraception.

Artificial methods of contraception are more commonly used (60.5 %) than natural methods (39.5 %). The artificial methods used were: injectables (23.1%) and the pill

(23.1%), while the rhythm method was the most popular natural method (16.5%). Contraceptive prevalence peaks among women in the 25-29 age-group at (30.7%) and was lowest for women age 40-49 at 3.2%. Female sterilization was used more commonly by women age 40-49, while women at the peak of childbearing age (20-39) were using injectables and pills.

Age Group	Injectables	Pills	Rhythm method	Sterilization	Others	Total
15-19	1.2	0.5	16.5	0.1	1.7	23.1
20-24	15.8	14.9	16.5	0.2	1.3	30.7
25-29	18.2	12.5	16.5	0.3	1.2	30.7
30-34	12.1	10.8	16.5	0.4	1.1	26.9
35-39	8.5	7.2	16.5	0.5	1.0	23.7
40-44	3.2	2.1	16.5	12.4	0.8	25.0
45-49	1.5	1.0	16.5	14.2	0.9	24.1
50-54	0.8	0.5	16.5	15.2	1.0	24.0
55-59	0.5	0.3	16.5	15.7	1.0	24.0
60-64	0.3	0.2	16.5	16.0	1.0	24.0
65-69	0.2	0.1	16.5	16.2	1.0	24.0
70-74	0.1	0.1	16.5	16.3	1.0	24.0
75-79	0.1	0.1	16.5	16.3	1.0	24.0
80-84	0.1	0.1	16.5	16.3	1.0	24.0
85-89	0.1	0.1	16.5	16.3	1.0	24.0
90-94	0.1	0.1	16.5	16.3	1.0	24.0
95-99	0.1	0.1	16.5	16.3	1.0	24.0
Total	100	100	100	100	100	100

Table 4.4: Practice of Contraception

Parameter	Sub-groups	Frequency (N)	Percentage (%)
Ever used a contraceptive	Yes	118	24.2
	No	369	75.8
	Total	487	100
Method ever used	Abstinence	6	5.1
	Condom	4	3.4
	Implant	4	3.4
	Injection	43	36.4
	Pills	43	36.4
	Rhythmic method	1	0.9
	Sterilization	2	1.7
	Others not specified	15	12.7
	Total	118	100
Reasons for non- use(132 respondents in this category were non response)	Not married	71	28.3
	Not having sex	42	16.7
	Infrequent sex	5	2.0
	Menopausal	3	1.2
	Infertile	5	2.0
	Breastfeeding	62	24.7
	Respondent opposed	9	3.6
	Husband opposed	5	2.0
	Religious prohibition	22	8.8
	Lack of knowledge	24	9.6
	Others(Traditional Medication)	3	1.2
	Total	251	100
Present use	Yes	91	19.2
	No	383	80.8
	Total	487	100
Methods currently used	Female Sterilization	5	5.5
	Male Sterilization	1	1.1
	Pill	21	23.1
	Injectables	21	23.1
	Implants	3	3.3
	Condom	4	4.4
	Lactational amenorrhea	13	14.3
	Rhythm method	15	16.5
	Withdrawal	5	5.5
	others	3	3.3
	Total	91	100

4.5 Factors affecting contraceptive use

The findings depicts that some women are more likely to use contraceptives than others. The uptake of contraceptive varies with nationality with highest in Ethiopian stratum, with 57.6% of the total sampled respondents using contraceptives at the time of the study. This was followed by Great lakes with 36.4%, Eritrea at 29.1%, Sudanese at 13.2% and the lowest in the Somali strata at 11.4%. Nationality affected uptake of contraceptive with significant association, with a chi square of 77.294 with $p < 0.0001$ as shown in table 4.4.

On contraceptive uptake and socio economic status, it was found that women occupation have negative effect on contraceptive use, revealing that women who are not employed were 2 times more likely to use contraceptive that those who were engaged in employment. This means that choice to use contraceptive is related to other factors and not employment or occupation status of women. On occupation, a total of 17.1% of contraceptive users were unemployed. For those whose partners where employed, 17.6% of them were using a contraceptive, with a chi square of 35.745, $p < 0.0001$ and df 4.

In comparison of nationality and the type of contraceptive use; Sudanese stratum were using condoms, lactational amenorrhea method, rhythmic method and injectables, whereas the Somali strata were using the pill and injectables. Ethiopians were using the injectables, rhythmic method and withdrawal method. The Eritreans were using pill, injectables and withdrawal method. The great lakes were using the permanent method – female sterilization, the pill and injectables.

The proportion of women using artificial methods increased with the number of living children, peaking at three to four children and then dropping for those with five or more

children. The numbers of living children among the respondents from the study is significant factor with contraceptive use with chi square of 34.304 and $p < 0.0001$.

The study revealed a clear tendency for current contraceptive use rise with the increase in the level of education. The percentage of using contraception increased from 14 % for women with no education to 40.3 % for women who had primary level of education, and about 49 % for those who had higher than primary education, with a chi square of 32.895 with $p < 0.0001$. The pill was widely used among all levels of education.

It was found that married women had negative association of using contraceptives than the unmarried persons such as single, separated and divorced with significance , OR 0.238 and $p < 0.001$. Other findings reveal that married refugee women with two or more children were 1.77 times less likely to use contraceptives than those married females who had one child.

Table 4.5: Chi square statistics of current contraceptive use

Dependent Variable	Independent Variables	Chi Square	df	p-value
Currently using a method to delay or avoid pregnancy (n= 91)	Age	12.509	6	0.052
	No. of children	34.304	4	0.000
	Marital status	29.424	4	0.000
	Age 1 st birth	24.732	4	0.000
	Length of stay	25.496	4	0.000
	Nationality	77.294	8	0.000
	Religion	15.997	3	0.001
	Employment	26.376	4	0.000
	Husband/Partner occupation	35.745	4	0.000
	Education level	32.895	4	0.000
	IRC Speak to you?	34.601	1	0.000
	Partner communication	37.959	2	0.000

4.5.1 Evaluation of the Logistic Regression Model

Overall model evaluation was examined in this study by the use of one inferential statistical test: the Wald tests, this was done to predict if the logistic model provided a better fit to the data if it demonstrates a positive improvement over the null model. The inferential goodness-of-fit test yielded positive values with $p > 0.001$ (Table 4.6), suggesting that the model was a fit to the data.

In addition among the three variables with positive significant association with contraceptive use on logistic regression model were analysed further through linear regression model to get the R^2 values i.e. the proportion of the variation in the dependent variable that can be explained by predictors in the model. The variables included in the linear regression model were: age of women, knowledge of family planning and husband dis-approval to use contraceptives methods. The linear regression model had R^2 indices of 0.122 predicting the current contraceptive use is influenced by these variables. Among three variables, two of them were found to be significant on regression analysis. Age was not significant, method use had a b-value of -0.187 and $p = 0.003$; meaning if someone does not know a method they are 18.7 times less likely to be using a method currently. Husband approval, with beta value = -0.221 and $p < 0.001$, meaning if husband dis-approves they are 22.1 times less likely to be using a method currently.

Table 4.6: Logistic Regression coefficient of current use of Contraceptives by Variables

VARIABLE	n=91	B	S.E	Wald χ^2	df	Exp(B)	sig
Age of Women	15-19	0.662	0.396	2.797	1	1.939	0.094
	20-24	-0.09	0.266	0.113	1	0.914	0.736
	25-29	-0.612	0.261	5.447	1	0.542	0.019
	30-34	-0.322	0.314	1.055	1	0.724	0.304
	35-39	0.246	0.339	0.527	1	1.28	0.468
	40-44	1.05	0.747	1.979	1	2.859	0.159
	45-49	1.436	1.036	1.922	1	4.203	0.166
Education of women	No education	0.984	0.249	15.579	1	2.674	0.000
	Primary education	-0.256	0.243	1.109	1	0.774	0.292
	Post Primary	0.786	0.755	1.085	1	2.195	0.298
	Secondary education	-1.358	0.296	21.091	1	0.257	0.000
	Post-secondary	-1.454	1.007	2.086	1	0.234	0.149
Occupation	Not employed	0.732	0.282	6.556	1	2.061	0.01
	Employed	-0.723	0.282	6.556	1	0.485	0.01
Knowledge of FP	Have heard of method	1.286	0.246	27.338	1	3.619	0.000
	Have not heard of method	-1.286	0.246	27.338	1	0.276	0.000
	Not employed	-0.374	0.235	2.534	1	0.688	0.111
	Employed	0.374	0.235	2.534	1	1.453	0.111
Husband approval	Disapproves	1.594	0.360	19.608	1	4.924	0.000
	Approves	-1.594	0.360	19.608	1	0.203	0.000
Religion	Catholic	-0.163	0.318	0.263	1	0.85	0.608
	Protestant	-0.323	0.247	1.706	1	0.724	0.192
	Muslim	0.760	0.244	9.716	1	2.138	0.002
Desired number of children	Two children	-0.693	0.758	0.837	1	0.500	0.360
	Three children	0.492	0.612	0.648	1	1.636	0.421
	Four children	-0.209	0.582	0.129	1	0.812	0.720
	Five and more children	0.154	0.519	0.088	1	0.767	1.167
Discuss or not discuss with Husband	Discuss	-1.561	0.268	33.923	1	0.210	0.000
	Do not Discuss	1.571	0.268	33.923	1	4.764	0.000
Marital status	Unmarried	-1.945	0.407	22.785	1	0.143	0.000
	Married	-1.945	0.407	22.785	1	0.143	0.000
Husband characteristics	Not employed	-0.374	0.235	2.534	1	0.688	0.111
	Employed	0.374	0.235	2.534	1	1.453	0.111

4.5.2 Source of Contraceptives

Information on where women obtain their contraceptives is useful for family planning program managers and implementers for logistic planning. The findings indicate that IRC Refugee Health facilities provided contraceptives to 90.9 % of users, while 9.1 % of users were supplied through private medical sources (such as private clinics), and less than 1 % were supplied through the community-based distribution system. The IRC health facilities provided a larger proportion of users with long-term methods, such as female sterilization, pill, and injectables. Almost a third of women who are sterilized got that procedure from a private source, such as mission hospital.

4.5.3 Informed Choice

Users of various contraceptive methods were asked whether, at the time they were adopting the particular method, they were informed of possible side effects or problems and what to do if they experienced them. The results showed that the five women who had undergone tubal ligation were informed that they would not be able to have any more children. Others contraceptive users (58.5%) were informed of other methods available that could be used, while 69.5% were informed of the side effects or health problems of the method they were provided, and 65.4% were informed of what to do if they experienced side effects.

4.5.4 Future use of Contraception

An important indicator of the changing demand for family planning is the extent to which non-users of contraception plan to use family planning in the future. In this study, women between ages 15-49 years, who were not using a contraceptive method were asked about their intention to use family planning in the future. The results showed that

46.3% of non-users said they intended to use family planning in the future and 53.7% did not intend to use. The proportion of those who intended to use contraception increased slightly with number of living children, from 2.8% for those without children to a peak of 34.1% for those with one or two children. Those who did not intend to use contraceptives in the future were concentrated among those with four or more children.

4.5.5 Reasons for non-use of Contraception

As mentioned above, 80.8% of women in Kakuma were not using contraceptives. Consequently, the reasons why they were not using any family planning method were of interest to program managers. Table 4.6 presents the distribution of non-users who were not using a contraceptive method by the main reason of non-use. In this category, the study recorded a non-response rate, a total of 132 women (26.6%) were not able to provide a reason why they were not using contraceptives. The commonly cited reasons for not using family planning were not married (28.3%), not having sex (16.7%) and breastfeeding (24.7%). Other reasons for not using contraceptives, such as religious prohibitions, opposition to use, menopause, infertile, lack of knowledge were cited by 10% of women as the main reason for non-use of family planning method.

4.5.6 Contact with Family Planning Providers

The results showed that only small proportions (16.4%) of women were visited by a health worker to discuss family planning issues. Only 31.6% who visited health facilities in the last 6 months, before the study discussed issues of family planning with the FP providers. This implied that many opportunities were lost when potential users could have been educated on the benefits of family planning.

From FGDs discussion, women stated that providers were good, friendly and helpful. However, some of the participants complained that the staff provided the method without conducting examination or screening clients such as taking blood pressure. They related lack of screening to subsequent side effects that occurred to them like weight loss. The family planning services were provided free of charge. Suggestions made on how to improve FP services included training, refresher courses for service providers and involvement of men.

“Involvement of men should be emphasized because some of the women cannot decide on their own to use FP without support from their partners” (FGD with women Sudanese). “Train and improve the skills of providers so that they improve service delivery on family planning” (FGD with women Ethiopians).

4.5.7 Husband /Partners knowledge of Women’s contraceptive use

The finding showed that 45.6% of current users reported that their partners knew that they were using a method of family planning, while 8.9% reported that their husband or partner did not know. According FGDs participants, some partners were supportive of family planning because they thought it could help them to provide better care to the family. However, the number and spacing of children was often not discussed and decided among couples. Some partners still considered family planning a responsibility of the women. *“Family planning is women’s business” (FGD with women).*

Multivariate analysis showed that the probability of using contraception among women who did not discuss family size with their partners was 4.7 times higher compared to those who discussed, $p < 0.0001$.

The findings showed that the odds of using contraceptive was 4.9 times higher among those whose partners disapproved family planning compared with those whose husband approved ($p < 0.001$).

4.5.8 Fertility Preferences

Information on fertility preferences is of considerable importance to family planning programs because it allows planners to assess the need for contraception, whether for spacing or limiting of births, and also to assess the extent of unwanted and untimed pregnancies. Data on fertility preferences may also be useful as an indicator of the direction that future fertility efforts of a given population. Data on desire for more children can indicate future reproductive behaviour, provided that the required family planning services are available, affordable, and accessible to allow people to realize their fertility preferences. The findings indicated that there is a widespread desire among women to control the number of births they have. Among all women, 21% did not want to have more children, while out of this only 6% were using a contraceptive method indicating 15% unmet need.

The level of unmet need for spacing and limiting of children varied by background characteristics. Married women with incomplete primary education had the highest unmet need for family planning (21%) compared with those who had completed primary education (17%), no education (26 %), secondary and higher education (11 %). Total demand for family planning increased with age, from 15-19 years to 40-44 years, after which it declined.

Religion was also a significant factor with contraceptive use. The odds that Muslims were more likely to use contraceptives than other religions was higher, OR 2.1, chi square of 10.137 and $p < 0.002$.

In this study, women's education was found to have a significant relationship with contraceptive use ($p < 0.001$). The odds that women who had secondary school education was 0.2 times more unlikely to use a contraceptive method than lower levels of education. However, women with no education were 2.6 times more likely to use contraceptives.

4.6 Discussion

4.6.1 Contraceptive Prevalence Rate

The contraceptive prevalence rate was 19.2% in Kakuma Refugee Camp according to the findings from this study, this figure is lower compared to the Kenya national figure at 46 % (KDHS, 2009). Contraceptive effectiveness is a measure of the success of typical use of a method. It incorporates efficacy (how well a method works when used consistently and correctly) with ease of compliance (Tsui *et al*, 2010). No modern contraceptive approach is 100% perfect in reducing unwanted pregnancies but in general, long-acting methods are the most effective (>99% protection against pregnancy over a year of use) (Tsui *et al*, 2010). An advantage of these methods is that they are independent of the user once initiated, and are the most effective contraceptives between 3 and 60 times more effective than short acting methods during a year of typical use. Yet, despite these advantages, they are often difficult for clients to access and are not used as widely as other methods, particularly in Africa (Singh *et al*, 2009).

The findings from the study indicated that among the AFP methods, injectable and the pills were the most known and used methods. In general, artificial FP methods have been widely marketed in the camp as convenient, effective and safe, and the required commodities made widely available through social marketing (IRC, 2010). These findings are consistent with the results from (KDHS, 2009) which showed that injectable and pills were the most used methods (KDHS, 2009). Condoms and oral contraceptive pills are available in health facilities. Condoms are not widely used despite being the most widely available in the community. Refugee community members seem to take condom for HIV prevention and not a method of contraceptive. The injectable and pills contraceptive hormone were the most preferred method, this could partly be linked the secrecy and convenience it affords the women. In addition, DMPA is highly effective and a generally well-tolerated contraceptive. For DMPA, cumulative pregnancy rates of 0.1–0.7% have been reported at 1 year and 0.2% at 2 years (Blumenthall *et al*, 2011).

A total of 8.9% reported that their partners did not know they are using family planning method, and thus injectables were preferred since they do not have to take them in the presence of their partners, and therefore allowed the women to exercise their right to decide, without undue pressure or lack of cooperation from the partner, on when or whether to have children. In addition, this could also be attributed to the low risk of forgetting to take it since it is given once every three months, and administered by a qualified health worker. Moreover, the injectable method is also more effective than condoms and natural methods. Other factors contributing to the use of injectables could be the low literacy level especially among women, their commonly weak domestic position in making decisions over childbearing and weak economic power and the

injectable hormone is a very opportune method for them. Other artificial methods like oral pills, spermicides and condoms require overt actions that require the acceptance and cooperation of the partners. This also applies to NFP methods, which require a lot of understanding and cooperation from the partner.

4.6.2 Factors influencing contraceptive use

The result indicate that only six variables had positive significant association with contraceptive use among women in reproductive age in Kakuma Camp namely; women with no education/not employed, knowledge of family planning, husband disapproval to use contraceptives and women who do not discuss family planning with partners. Other variables with negative significant association include: women with secondary education, women who have not heard about family planning, husband approval of family planning and married women.

4.6.3 Marital status

The results showed that unmarried women had higher odds of using contraceptives than the married ($p < 0.001$). The possible explanation is that, there is a strong pressure on married women to bear children in the existing norm that favour an early establishment of family and discourage the use of contraceptives in marriage. A similar finding was in another study which showed the number of living children influenced the use of contraceptive positively (Howard *et al*, 2008). The same study also found out that the single, socio-economically dependent women were more likely to adopt contraceptive practice as a wise precaution against STI, pregnancy and their associated implications than her married counterpart (Howard *et al*, 2008).

Marriage is a primary indication of the exposure of women to the risk of pregnancy. Populations in which age at first marriage is low tend to have early childbearing and high fertility (KDHS, 2009). From the KDHS 2009, a similar pattern is replicated for currently married women, except that only slightly more than one-third (36 %) of married women age 15-19 had not given birth to a child. This proportion diminishes rapidly, to 4 % or less for married women aged 25 and above. These differences in childbearing can be explained by the presence of many young and unmarried women in the 'all women' category who are less exposed to the risk of conception than married women and exhibit lower fertility. On average, currently married women age 45-49 had given birth to 6.7 children each (KDHS, 2009). Findings from the qualitative data among the youth stated that they use family planning more because they do not want to get pregnant before marriage, which also supports the findings of the quantitative study. High parity was significantly associated with contraceptive non-use. However, a study by Howard *et al*, found out that parous women in one refugee study were more knowledgeable about family planning than nulliparous women and the number of living children influenced the use of contraceptive positively (Howard *et al*, 2008).

4.6.4 Religion

The findings derived from the bivariate analysis between religion and contraceptive use was found significant. Muslims were more likely to use contraceptives than other religions, OR 2.1, chi square of 10.137 and $p < 0.002$. Similar findings were also identified by another study done in the informal settlement in Kenya (Okech *et al*, 2011). In the same study, religion was identified as the most important determinant of contraceptive use, it indicated that the probability of a woman using family planning

services if she is a Catholic was 28% lower compared to others with different religious background such as Protestant and Muslims. This is because Catholic faith discourages its members from using contraceptives as birth control measures. Catholics are instead encouraged to rely more on observation of menstruation cycles and natural safe days of a woman (Okech *et al*, 2011). This finding indicated a significant difference in the use of family planning services between Muslims and other religions.

4.6.5 Education

In general, education is recognized as the vehicle by which people learn about the family planning, which may lead to demand for fewer children. The educated women were found to desire fewer children compared with women with low education (KDHS, 2009). However, women with no education were 2.6 times more likely to use contraceptives in this study meaning that women were using contraceptives regardless of whether they are educated. It implied that so long as women are exposed to family planning information, they are able to use contraceptive regardless of education status.

Substantial differences in fertility preferences among women by levels of education are apparent, the comparison of the desired number of children with education level also indicated that those with no education desired 6 children on average in total compared to 4 children for those with secondary education. This meant that women with higher level of education desired less number of children than women with little or no education. Regression coefficient shows that the desired number of children decreased respectively among those with secondary level of education and above.

Many studies have documented the relationship of female education to the decline in fertility; it was recognized that education was the primary factor contributing to rise in contraceptive use (UNFPA, 2009). Contraceptive use increased dramatically with increasing level of education. Sixty percent of married women in Kenya with at least some secondary education used a contraceptive method compared with 40 % of women with incomplete primary education, and only 14 % of those who never attended school. When literacy of women improves, fertility rates tend to decrease as a result of contraceptive use (Oketch *et al*, 2011). Similarly, fertility rates were lower in setting where women have access to decent jobs, good health care, and family planning resources which are more available in urban areas than in rural areas (KDHS, 2009).

4.6.6 Age groups

The result of the model revealed that women in the age group 15-19 years old had a positive significant effect on contraceptive use ($P < 0.0019$). The logistic coefficient indicated that women in this cohort were more likely to practice contraception than the other age groups. The oldest group of women in reproductive age were less likely to use contraceptive when compared to the youngest age group. The result here suggested that most of the younger generation women preferred to use contraceptive when compared to the older cohort. A study by Okech *et al*, revealed that once the teenage women and newlyweds had a child, contraceptive prevalence rose to a level comparable to that of women in their twenties (Okech, 2011). It also means that the oldest generation were less likely to use contraception because their ability to conceive was decreasing as they reach the end of their reproductive age. Similar findings were also reported in KDHS (2009) which indicated that younger women were adopting family planning at lower

parities when they had fewer children than older women (age 45-49). Only 5% of the married women used contraception before having any children and 11% used contraception by parity 1 (KDHS, 2009).

The age of women also influenced contraceptive use at different stages of a women's reproductive life (KDHS, 2009). First, the young women were less likely to have ever-used or to be currently using a contraceptive method. In addition, the younger the respondent during the first sexual experience, the lesser the probability of using a contraceptive method, and the older the respondent at first marriage the greater the probability of contraceptive use (KDHS, 2009).

4.6.7 Occupation

From the study, it was found out that women's occupation had negative effect on contraceptive use, revealing that women who were not employed were 2 times more likely to use contraceptives than those who were in employment. This could be attributed to the choice of contraceptive use was related to other factors and not employment or occupation status of women. In other studies, cost played an important role in suboptimal contraceptive utilization, as specific contraceptives and attendant healthcare services may have been too expensive for some women (Frost *et al*, 2007). However, in the Kakuma Refugee Camp services are offered free of charge to refugees (IRC, 2010).

4.6.8 Inter-spousal communication

Inter-spousal communication is often found to be an important predictor of using contraception among women, especially married women in developing countries where

men are dominant (UNFPA, 2009). This study found out that there was negative significant association with contraceptive use and inter-spousal communication on contraceptive use. However, partner's discussion does not necessarily mean an increase in knowledge of a partner's contraceptive attitudes (DeRose, 2004). The results showed that the probability of using contraception among women who did not discuss about family size with their partners were 4.7 times higher than those who discussed about family size with their husbands. This could be attributed to women's fearing objection by their partners, thus preferring to use family planning method in secret. Husbands and wives' knowledge on family planning have statistically significant association with couple's current contraception use (Haile, 2006).

4.6.9 Husband's Approval of Family Planning

The findings derived from the bivariate analysis between husband's disapproval of family planning were significantly associated with high contraceptive use. The odds of using contraceptives were 4.9 times higher, among those whose partners disapproved of family planning compared to those who had partner's approval, $p < 0.001$. These findings were not consistent to findings of a study on empirical analysis of determinants of demand for family planning services in Kenya's city slums found out that the most important determinant of the likelihood of respondents in the slums using family planning services was partner's approval (Okech, 2011). Similar findings were found by a study on factors influencing use of modern contraceptives among rural women in Kenya. Women whose husbands approved of family planning were twice more likely to have ever used a modern contraceptive compared to those whose husbands disapproved of it (Ndungu *et al*, 2001). Ghana and Indonesia showed male partners' influence on

couples fertility decision-making as well as the need to target male partners for the successes of family planning programmes (Haile, 2006).

According to the most recent demographic and health surveys from 41 countries including Kenya, unwanted births in the poorest quintile of the populations were more than twice that observed in the wealthiest quintile (Gillespie *et al*, 2007). Domestic violence is recognized as an important contributor to unwanted pregnancy, as women who experience sexual, physical and psychological abuse may be more prone to risky sexual behaviours and less able to use contraceptives correctly or consistently or negotiate contraceptive use with a partner ((Blumenthall *et al*, 2011).

4.6.10 Knowledge of contraceptive

Development of a profile regarding knowledge of family planning methods was one of the major objectives of the study, because knowledge of methods is a prerequisite for making a decision to initiate contraceptive use. The awareness to contraceptive methods, which is measured as the knowledge about contraception, had a positive strong significant effect on contraceptive use in Kakuma. Women who had heard at least one contraceptive method were predicted to use contraception more than 3.6 times higher than those who had not heard any method $P < 0.001$. This meant that women who are aware of contraceptives are able to choose the contraceptive method that is suitable to them and explain the higher use among those with knowledge of contraceptives. The results also showed that 53.4 % knew a place where they can access family planning methods whereas 45.8 % didn't know of a place to obtain contraceptives. This implied

that even though women may have had intention of using contraceptives they were not aware of a place to get FP services.

Women who do have access to family planning programs may be unable to obtain contraception due to supply shortages, provider bias, limitations on the type of healthcare worker who can dispense contraceptives, or policies limiting contraceptives in specific groups (e.g. adolescents, nulliparous or unmarried women). In another study, contraceptive non-use was attributed to lack of knowledge (myths and lack of/poor sexual education) and the disapproval of spouses and family (Blumenthall *et al*, 2011).

Comprehensive sexuality education in schools, which provides factual information about a broad range of sex-based topics, is effective in increasing contraception use among teens (Kirby, 2007). Although such broad education programs may help avoid unwanted pregnancies, in many areas of the world, they have not yet been introduced, are in early stages of development or are beset by controversy. Negative attitudes toward contraceptives, most notably, fear of adverse health effects, contribute to contraceptive non-use, discontinuation or method switching. The result from logistic regression analysis indicates that some of the factors assumed to effect contraceptive use among women in reproductive age in refugee settings, are statistically significant, related to contraceptive use such as level of education and religious beliefs. In conclusion, the result shows that there is an association between demographic factors, socio-economic factors and cultural factors with contraceptive use among women of reproductive age in Kakuma Refugee Camp and thus the null hypothesis is rejected.

CHAPTER 5: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Summary

The purpose of this chapter is to summarize the major findings derived from the study and to make recommendations for policy formulations and thereby take appropriate interventions for increasing the level of contraceptive use among women in reproductive age in Kakuma camp. In addition, this chapter will give suggestions for further research on this subject.

This study included independent variables categorized into demographic, socioeconomic and cultural factors. The demographic variables such as age, and desired number of additional children, socio-economic variables such as women's education, women's occupation and husband's occupation. Other independent variables included cultural variables, religion, husband's approval of family planning use and family planning service delivery variables such as field worker's visit and knowledge on contraception. The dependent variable was current use of contraceptives.

5.1 Summary of findings

5.1.1 Contraceptive Prevalence Rate

The study findings indicate that contraceptive prevalence rate was low at 19.2% despite average knowledge of at least two methods by the over a quarter of the sample population 32 %. Among the AFP methods, injectable and the pills were the most known and used methods.

5.1.2 Knowledge of Contraceptives

The awareness of contraceptive methods, which was measured as the knowledge on contraception had a positive strong significant effect on contraceptive use in Kakuma Camp. The results of the study revealed that women who had heard of at least one contraceptive method were 3.6 times more likely to use contraceptives, higher than those who had not heard of any method $p < 0.001$. High use of contraceptives was found out among those who had knowledge on contraceptives. The results of the study also revealed that women who had heard at least two contraceptive methods were predicted to use contraceptives 5 times more than those who did not know any method.

5.1.3 Factors Affecting Uptake of Contraceptives

The results in the analysis revealed that religion, in particular the Muslim, had a positive significant effect on contraceptive use. Higher education level, the unmarried, lower age group and awareness of FP methods also had positive effect on contraceptive use. The factors associated with low and poor contraceptive use were: low level of knowledge about contraceptives; including lack of awareness on facilities providing family planning services, low literacy levels and extremes of parity with desire for more children. Others factors include religious prohibition and lack of spousal consent. Effective educational and counselling interventions are likely to improve consumers' knowledge and subsequent uptake of contraceptive usage.

5.2 Conclusion

Unintended pregnancies are common among women of all backgrounds in Kakuma. However, some demographic and socioeconomic characteristics from this study influenced the prevalence of these pregnancies, with the current contraceptive uptake at 19.2% with majority using the pill and injectable methods. The result of logistic regression analysis revealed that all independent variables investigated in the model had positive and negative statistically significant association on contraceptive use. The variables identified as the factors which had positive significant effect on contraceptive use were: age of the women, women's literacy levels, awareness on contraceptive methods, Muslim religion and partner's disapproval of family planning. The main obstacle to the use of family planning was lack of knowledge. The health worker's perceptions had strong implications on the uptake of contraceptives since they were the service providers. Any effort to increase the uptake of the FP methods must therefore involve training the health workers and providing them with the knowledge, skills, facilities and support to enable them to be more confident to provide all range of FP methods. This also involves providing them with the necessary research evidence of the effectiveness of FP methods, in order to match the volume and quality of available information about artificial FP.

5.3 Recommendations

In light of the research findings, demand for family planning services in Kenya in general and among women in the Refugee Camp in particular is affected by various factors. In order to enhance the uptake of family planning services as a bold step towards meeting the challenges envisaged in the Kenya's Vision 2030 and the realization of the

MDGs, the following are recommended to improve contraceptive uptake in Kakuma Refugee Camp:

- I. Establishment of sustainable informal education activities and organizing a short-term training to improve the level of knowledge on contraception.
- II. Introduction of a variety of other contraceptive methods especially the long term methods and provision of adequate information about variety of contraceptive methods to the women and their partners.
- III. Development of information and educational materials about contraceptive methods and benefits to be used in the health facilities and in the community to raise awareness.
- IV. Establishment of small behaviour change communication programs focused on the benefits of FP and giving information about contraceptive methods to the community in general starting in school through adulthood.
- V. Community health workers need to make greater efforts to extend their service to include household level discussion on family planning.

5.4 Further Research

- I. There is need to conduct further research to examine other factors such as maternal and child health service delivery systems to determine their effect on decision to use contraceptives.
- II. Men were not included in this study, therefore there is need to target men and establish the role of men and how they influence contraceptive use.

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APPENDIX 2: INFORMED CONSENT

This was read out to the respondents before the interview so that their verbal consent was sought.

My name is Milka Cherotich Choge. I am carrying out a study together with a team of research assistants, to find out the factors affecting contraceptive use among women of reproductive age (15-49 years old) in Kakuma refugee camp. I will ask you a few questions on family planning and contraceptive use. The survey will take between 20 to 25 minutes to complete. Whatever information you provide, will be kept confidential. Participation in this survey is voluntary, and if we should come to any question you don't want to answer, just let me know and I will go on to the next question, or you can stop the interview at any time. However, we hope that you will participate in this survey since your views are important. The information given is confidential and will be useful in improving contraceptive use and reproductive health services for women and families in Kakuma Refugee camp.



Thank you.

APPENDIX 3: QUESTIONNAIRE**Strata no: HH no:****Date:** _____**Kakuma 1,2,3,4 Zone:****Group/block:** _____

You have been carefully selected to take part in this research. The purpose of this questionnaire is to get your views on some of the factors affecting contraceptive use in Kakuma Refugee Camp. If you have any questions about the survey, you can ask me or my survey research assistants who are with the survey team. At this time do you have any questions about the survey?

Respondent agreed to be interviewed?

- a) Yes b) No

SOCIO - DEMOGRAPHIC DATA (CIRCLE THE CORRECT ANSWER)

1. How old are you?

- a) 15-19 b) 20-24 c) 25-29 d) 30-34
 e) 35-39 f) 40-44 g) 45-49

2. How many children have you had?

- a) Primigravida b) Para 1-2 c) Para 3-4 e) Para 5 and above f)
 Other (specify)

3. What is your current marital status?

- a) Married b) Single c) Separated d) Widowed e)
 Other (specify)

4. How old were you when you gave birth to your first child?

- a) Below 15 b) 15-19 c) 20-24 d) 25-29
 e) 30 and above

5. How long have you been living continuously in the current residence?

- a) Less than 1 year b) 1-2 years c) 2-3 years d) 4-5 years e) above 5
 years

6. What is your nationality?

- a) Sudan b) Somali c) DRC Congo d) Uganda e) Ethiopia
 f) Tanzania

- g) Burundi h) Rwanda i) Djibouti j) Eritrea k) Namibia l) Zimbabwe
- m) Other (specify)

7. From the list of religions provided indicate your religion:

- a) Protestant b) Catholic c) Muslim d) Other (specify)

8. What do you do for a living?

- a) Unemployed b) Self-employed c) Casual job d) employed
e) Others (specify)

9. What does your Husband/partner do for a living?

- a) Unemployed b) Self-employed c) Casual job d) employed
e) Others (specify)

10. Have you ever attended school? (*If no, skip to Q12*)

- a) Yes b) No

11. What is the highest level of school you attended?

- a) Primary b) Post-primary/Vocational c) Secondary/'A' Level d) College (middle level)

CONTRACEPTION

Now I would like to ask a few questions concerning contraceptive - the various ways or methods that a couple can use to delay or avoid a pregnancy.

12. Which ways or methods have you heard about? Probe/List

- a) Female Sterilization b) Male Sterilization c) Pill d) IUDs
e) Injectables
- f) Implants g) Condoms h) Female Condom
- i) Lactational Amenorrhea (LAM- exclusive breastfeeding) j) Rhythm Method
- k) Withdrawal l) Other (specify) _____

13. Have you ever used anything or tried in any way to delay or avoid getting pregnant? (*If no, skip to Q18*)

- a) Yes b) No

14. What have you used or done?
15. When was the last time you used a method? Which method was that?
16. How long did you use the method then?

Now I would like to ask you about the first time that you did something or used a method to avoid getting pregnant.

17. How many living children did you have at that time, if any?
18. Do you want to have more children?
 - a) Yes b) No
19. Do you know of a place where you can obtain a method of family planning?
 - a) Yes (specify) b) No
20. Are you currently doing something or using any method to delay or avoid getting pregnant? (*If no skip to Q27*)
 - a) Yes b) No
21. Which method are you using?
 - a) Female Sterilization b) Male Sterilization c) Pill d) IUDs e) Injectables
 - f) Implants g) Condoms h) Female Condom
 - i) Lactational Amenorrhea (LAM- exclusive breastfeeding) j) Rhythm Method
 - k) Withdrawal l) Other (specify) _____
22. Where did you obtain (current method) when you started using it?
 - a) IRC Hospital b) IRC Health Clinic c) Private Clinic
 - d) Other (specify)
23. Where did you obtain (current method) the last time?
 - a) IRC Hospital b) IRC Health Clinic c) Private Clinic
 - d) Other (specify)

24. Were you ever told by a health or family planning worker about side effects or problems you might have with the method?

- a) Yes b) No

25. Were you told what to do if you experienced side effects?

- a) Yes b) No

26. Were you ever told by a health or family planning worker about other methods of family planning that you could use?

- a) Yes b) No

27. In the last 6 months, were you visited by a community health worker who talked to you about family planning?

- a) Yes b) No

28. Did any staff member at the IRC health facility speak to you about family planning methods? a) Yes b) No

FERTILITY PREFERENCES

29. Now I have some questions about the future, would you like to have another child or prefer not to have any (more) children? a) Yes b) No

30. Are using a contraceptive method?

- a) Not currently using b) Currently using

31. If yes you do not want to have another child soon, but you are not using any method to avoid pregnancy, can you tell me why you are not using a method?

FERTILITY RELATED REASONS

- a) Not married b) Not having sex c) Infrequent sex d) Menopausal
e) Infecund f) Breastfeeding

OPPOSITION TO USE FAMILY PLANNING

- g) Respondent opposed h) Husband/partner opposed

- i) Religious prohibition

LACK OF KNOWLEDGE

- j) Knows no methods k) Knows no source l) Lack of access m) other (specify)

32. Do you think you will use a contraceptive method to delay or avoid pregnancy at any time in the future? a) Yes b) No
33. If yes which contraceptive method would you prefer to use?
- a) Female Sterilization b) Male Sterilization c) Pill d) IUDs e)
 Injectables f) Implants g) Condoms h) Female Condom
- i) Lactational Amenorrhea (LAM- exclusive breastfeeding) j) Rhythm Method
- k) Withdrawal l) other (specify) _____

PARTNER COMMUNICATION

34. Do you discuss with your partner about family planning?
- a) Yes b) No
35. How often have you and your husband talked about family planning in the past year?
- a) Yes b) No
36. Have you and your husband ever discussed the number of children you would like to have? a) Yes (specify) b) No
37. Do you think your husband wants the same number of children that you want, or does he want more or fewer than you want?
- a) Yes b) No c) Don't know
38. Does your husband/partner know that you are using a method of family planning?
- a) Yes b) No c) Don't know
39. Do you think that your husband/partner approves or disapproves of couples using a method to avoid pregnancy?
- a) Approves b) Disapproves c) Don't know
40. Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision, or did you both decide together?
- a) Mainly your decision b) Mainly your partner decision c) Decision by both
 d) Other (specify).

APPENDIX 4: QUESTION GUIDE

PART A, KEY INFORMANT INTERVIEWS

1. How many clients are regular users of contraceptives?
2. What do you think are the motivating factors for the current clients using contraceptives?
3. What is your view on the current family planning services in the camp?
4. What are the main factors affecting use of contraceptives?
5. How equipped are you to provide family planning services?

PART B, FOCUS GROUP DISCUSSION

1. What is the average number of children one should have?
2. What are your views on the current family planning services available?
3. What is the role of the men and women in the family planning?
4. What are the factors affecting use of family planning?
5. What can be done to improve the use of contraceptives?

APPENDIX 5: CHI SQUARE RESULTS TABLES

Dependent Variable	Independent Variables		Chi Square	df	p-value
Currently using a method to delay or avoid pregnancy (n= 91)	Age of Women	15-19	2.883	1	0.090
		20-24	0.113	1	0.736
		25-29	5.583	1	0.018
		30-34	1.062	1	0.303
	Education of women	35-39	0.529	1	0.467
		40-44	2.158	1	0.142
		45-49	2.265	1	0.132
	Education of women	No education	16.297	1	0.000
		Primary education	1.112	1	0.292
		Post Primary	1.139	1	0.286
		Secondary education	23.330	1	0.000
		Post-secondary	2.467	1	0.116
	Occupation	Not employed	6.750	1	0.009
		Employed	6.750	1	0.009
	Religion	Catholic	0.263	1	0.608
		Protestant	1.715	1	0.190
		Muslim	9.978	1	0.002
	Marital status	Unmarried	7.243	1	0.007
		Married	1.774	1	0.183
	Partner/Husband occupation	Not employed	2.550	1	0.110
Employed		2.550	1	0.110	

Dependent Variable	Independent Variables		Chi Square	df	p-value
Ever use of currently using a method to delay or avoid pregnancy (n= 118)	Age of Women	15-19	6.427	1	0.011
		20-24	1.921	1	0.166
		25-29	7.215	1	0.007
		30-34	1.206	1	0.272
		35-39	0.993	1	0.319
		40-44	2.158	1	0.142
		45-49	2.265	1	0.132
	Education of women	No education	11.328	1	0.001
		Primary education	2.125	1	0.145
		Post Primary	2.585	1	0.108
		Secondary education	13.603	1	0.000
		Post-secondary	1.459	1	0.227
	Occupation	Not employed	8.680	1	0.003
		Employed	8.680	1	0.003
	Religion	Catholic	0.018	1	0.894
		Protestant	0.040	1	0.841
		Muslim	4.183	1	0.041
	Marital status	Unmarried	7.995	1	0.005
		Married	23.499	1	0.000
	Partner/Husband occupation	Not employed	0.107	1	0.744
Employed		6.750	1	0.009	

**APPENDIX 8: APPROVAL LETTER OF MINISTRY OF HIGHER
EDUCATION, SCIENCE AND TECHNOLOGY**

REPUBLIC OF KENYA



NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213123.
Fax: 254-020-2213215, 318245, 318249
When replying please quote

P.O. Box 30623-00100
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Website: www.ncst.go.ke

Our Ref:

NCST/RRI/12/1/MED-011/53

Date:
13th May, 2011

Milka Choge Cherotich
Kenyatta University
P.O Box 43844
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "Factors affecting contraceptive uptake among women of reproductive age in Kakuma Camp, Turkana County" I am pleased to inform you that you have been authorized to undertake research in Turkana North District for a period ending 30th June, 2011.

You are advised to report to the District Commissioner and the District Education Officer of Turkana North District before embarking on the research project.

On completion of the research, you are expected to submit one hard copy and one soft copy of the research report/thesis to our office.

A handwritten signature in black ink, appearing to read 'P.N. Nyakundi'.

**P.N. NYAKUNDI
FOR: SECRETARY/CEO**

Copy to:

The District Commissioner
Turkana North District

The District Education Officer
Turkana North District

APPENDIX 9: APPROVAL LETTER FROM MINISTRY OF STATE FOR IMMIGRATION AND REGISTRATION OF PERSONS



**OFFICE OF THE VICE PRESIDENT
MINISTRY OF STATE FOR IMMIGRATION &
REGISTRATION OF PERSONS**

DEPARTMENT OF REFUGEE AFFAIRS

Website: www.refugees.go.ke
Tel: +254-020-2093675
Fax: +254-020-315012

Castle House, James Gichuru Rd
Lavington Green
P.O. Box 42227 -00100
Nairobi, Kenya

When replying please quote:

RFG/ADM/7/VOL.13/(208)

25th February 2011

The Country Director
International Rescue Committee
P.O. Box 62727-00200
NAIROBI

(Att: Milka Jerotich Choge)

RE: AUTHORITY TO VISIT KAKUMA REFUGEE CAMP

Refer to your letter dated 22nd February 2011 on the above subject.

Permission has been granted to **Milka Cherotich Choge**, Maternal Health Coordinator to undertake a study on factors affecting contraceptive uptake in Kakuma refugee camp with the objective of assessing and determining the current contraceptive prevalence rate, knowledge and uptake of contraceptives.

We would appreciate it if you would share the information with us on completion of the study.

On arrival she is asked to pay courtesy call to the Camp Manager for briefing before proceeding for the mission.

OMAR A. DHADHO
FOR: COMMISSIONER FOR REFUGEE AFFAIRS

cc: Camp Manager
KAKUMA REFUGEE CAMP

For: **COMMISSIONER FOR
REFUGEE AFFAIRS**
P. O. Box 42227-00100,
NAIROBI.

APPENDIX 10: APPROVAL LETTER FROM INTERNATIONAL RESCUE COMMITTEE



INTERNATIONAL RESCUE COMMITTEE

Kenya Program
P.O. Box 62727, 00200.
Nairobi, Kenya.
TEL: (254-020)2719236 / 22727730 •FAX: (254-020) 2717763 •e-mail: ircnbi@kenya.theirc.org

Date: January 05, 2011

Dear Milka Choge,

REF: STUDY ON FACTORS AFFECTING CONTRACEPTIVE UPTAKE AMONG WOMEN OF REPRODUCTIVE AGE IN KAKUMA REFUGEE CAMP, TURKANA COUNTY

Reference to your request dated 15th December 2010, I wish to inform you that permission has been granted for you to conduct the above mentioned study in Kakuma Refugee camp with the following specific objectives;

1. To assess and determine the current contraceptive prevalence rate.
2. To assess and determine the knowledge of contraceptives.
3. To assess the factors affecting uptake of contraceptives.

Reproductive health including family planning has been identified as a key strategic priority area for improving the quality of life of refugees by IRC. This study will therefore inform the design of interventions aimed at improving contraceptive prevalence rate and consequently the quality of life of refugees.

In view of the above, the IRC health program staff will support you throughout the data collection period. Kindly ensure that you share the findings of this study with our offices here in the field and Nairobi.

Regards,

Dr. Mwiti Mungania
Project Coordinator
Kakuma Refugee Camp.