

**INTRAUTERINE CONTRACEPTIVE DEVICE USE
AMONG SERVICE PROVIDERS AND FAMILY
PLANNING CLIENTS ATTENDING SELECTED SITES IN
EMBU COUNTY, KENYA**

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**Intrauterine contraceptive device use among service providers and
family planning clients attending selected sites in
Embu County, Kenya**

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**A thesis submitted in partial fulfillment for the degree of Master of
Science in Public Health in the Jomo Kenyatta University
of Agriculture and Technology**

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DECLARATION

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

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DEDICATION

I dedicate this work to my parents Mr & Mrs Kamunya, husband (TK), brothers and sister whose support and encouragement kept me going and are very special to me.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
APHIA	AIDS Population Health Integrated Assistance
CD	Compact Disk
CI	Confidence Interval
COC	Combined Oral Contraceptive
CPHR	Center for Public Health and Research
DHMT	District Health Management Team
DMPA	Depot medroxyprogesterone acetate
DRH	Division of Reproductive Health
FHI	Family Health International
FP	Family Planning
GOK	Government of Kenya
HIV	Human Immunodeficiency Virus
ITROMID	Institute of Tropical Medicine and Infectious Diseases
IUCD	Intrauterine Contraceptive Device
JHPIEGO	An affiliate of Johns Hopkins University

JKUAT	Jomo Kenyatta University of Agriculture and Technology
KEMRI	Kenya Medical Research Institute
KDHS	Kenya Demographic and Health Survey
LAPM	Long Acting and Permanent Methods
LNG	Levonorgestrel
MEC	Medical Eligibility Criteria
MOH	Ministry of Health
MOPHS	Ministry of Public Health and Sanitation
NET-EN	Norethisterone oenanthate
NFP	Natural Family Planning
OR	Odds ratio
PID	Pelvic Inflammatory Disease
POP	Progestin only pills
SDM	Standard Days Method
SPSS	Statistical Package for the Social Sciences
SRH	Sexual Reproductive Health
STI	Sexually Transmitted Infections
USAID	United States Agency for International Development
UNFPA	United Nations Fund for Population Activities
USA	United States of America
WHO	World Health Organization

ABSTRACT

There is a growing need in developing countries for effective contraception and in particular long acting methods because a large number of young people are in their reproductive age. The intrauterine contraceptive device (IUCD) has been used throughout the world for more than three decades. It has long been recognized as an inexpensive, highly effective, long-acting, reversible method of contraception whose maintenance is low. Despite all these, its uptake is still low especially in sub-Saharan Africa. This has been attributed partly to, Family Planning promotion falling behind in the list of international development priorities where new priorities arose that included: HIV/AIDS, population aging and international migration hence shifting focus away from Family Planning (FP). This was a cross-sectional study that was set out to determine prevalence of IUCD and other family planning methods and look into what factors influence or hinder IUCD use in selected sites in Embu County. Six health facilities were included in the study and a total of 315 interviews conducted out of which 297 were clients and 18 were service providers. The results showed that IUCD use among family planning clients was at 9% and for service providers was at 22% both of which were higher than the reported national level prevalence of 4%. When IUCD prevalence was compared to other FP methods, prevalence of injectables and pills was higher at 43% and 20% respectively. From the results, clients who were above 30 years of age, clients who had previously used a family planning method and those who understood how the IUCD prevents pregnancy were more likely to use the IUCD. The study findings indicated that: there is need to continue with advocacy efforts on IUCD as one of the long acting methods of family planning. The service provider's knowledge and skills on counseling needs to be strengthened so that they are able to provide comprehensible information not just about the IUCD but on all methods of family planning and also to increase family planning method mix. Further studies need to be done to ascertain whether provision of IEC materials would increase uptake of FP.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

The prevalence of IUCD in the world is at 13.9% with developed regions having a prevalence of 8.9% compared with 14.7% in developing regions. In Africa IUCD prevalence is at 4.6% (Sub-Saharan Africa 0.7%, Middle Africa 0.2%, Northern Africa 19.8%, Southern Africa 1.2% and West Africa 0.5%). In other regions, IUCD prevalence is: Asia 17.5%, Europe 11.9%, Latin America and the Caribbean 6.5%, Northern America 4.7% and Oceania 1.8% (United Nations 2013). Asia and Europe have the highest prevalence of IUCD compared to Africa, (United Nations, 2013).

The IUCD has long been recognized as one of the long acting family planning methods and is inexpensive, 99% effective and reversible method of contraception whose maintenance is low. Despite all this, the IUCD is still underutilized in Kenya. According to (Macro, 2010), 61% of women are knowledgeable about the IUCD, 4% have ever used the method and only 1% is currently using the method. Comparing data from the national demographic surveys conducted in Kenya, the use of IUCD drastically reduced from the national mix of modern family planning methods in the late 1990 and early 2003. The proportion of contraceptive users choosing the IUCD decreased from 31% to 8% between 1984 and 2003(Central Bureau of Statistics, 2004). Some of the key factors that have been associated with the decline are misunderstanding how the IUCD works, myths and rumours about the IUCD by both the service providers and the clients and religion. The IUCD is a valuable component of a sustainable contraceptive method mix. The study looked into addressing the question of what factors contribute to IUCD use and what hinders its uptake.

According to the Kenya National Family Planning Guidelines for Service Providers, the most widely used copper-bearing IUCD is Copper T380A (Ministry of Health & Sanitation, 2010). The IUCD has one or two strings/threads which after insertion in the uterus hang through the cervix into the vagina. IUCD use is determined by a wide range of factors. These factors may be behavioural, attitude, perception of the clients and service providers or medical factors. Compared to other regions in the world, across sub-Saharan Africa, there is low uptake of IUCD and some of the factors that may have contributed to this are numerous which include and not limited to neglect of the method at program level, poor infrastructure and low capacity, negative rumours and fear of complications and provider bias (United Nations, 2009).

In 2003, the LAPM share of modern contraceptive use had decreased from 55% to 21% of modern contraceptive use in Kenya (MOH, 2008). In the past five years efforts have been put in place that include reintroduction of the IUCD Task Force under the leadership of the Ministry of Health which helped launch several interventions with the goal of increasing use of IUCDs and, by extension, long-acting and permanent methods of contraception (LAPMs) (MOH, 2010).

Comparing data from the national demographic surveys conducted in Kenya, the use of IUCD drastically reduced from the national mix of modern family planning methods in the late 1990 and early 2003, despite its proven effectiveness, acceptability, and low cost. Some of the key factors that have been associated with the decline are misunderstanding how the IUCD works myths and rumors about the IUCD by both the service providers and the clients and religious groups. The proportion of contraceptive users choosing the IUCD decreased from 31% to 8% between 1984 and 2003(Central Bureau of Statistics, 2004). According to the KDHS 2008-09, around 6 in 10 women have heard of the IUCD and only 4% of all women (currently married and sexually active women) have used the IUCD. The Ministry of Health in Kenya is committed to providing a wide range of contraceptive options and a more balanced sustainable method mix. It has led the process of rehabilitating the IUCD and has focused on consensus-

building and advocacy, building capacity and improving service delivery, demand creation and monitoring and evaluation.

The IUCD is a valuable component of a sustainable contraceptive method mix. Government procurement and service-delivery costs for IUCDs are extremely low compared with those of many other methods. When all program costs (including those of staff time for initial and follow-up visits and for commodities) as well as length of time each method will protect a woman from pregnancy are taken into account, the IUCD proves to be the most cost-effective contraceptive the health care system can provide. (MOH, 2003)

1.2 Problem Statement

Women constitute a vulnerable part of the society and threats posed by unplanned pregnancy results in grave consequences not only to them but to their children and the entire family. By increasing access to and use of Family Planning there will be a reduction in child and maternal mortality. The IUCD has long been recognized as one of the long acting Family Planning methods and is inexpensive, 99% effective and reversible method of contraception whose maintenance is low. Despite all this, the IUCD is still underutilized in Kenya. According to (Macro, 2010), 61% of women are knowledgeable about the IUCD, 4% have ever used the method and only 1% are currently using the method. This study set out to look at utilization in terms of prevalence of IUCD in Embu County and other family planning methods and what factors influence or hinder IUCD use in selected sites. The IUCD is one of the methods that can increase uptake of long-acting methods of family planning method mix given the cost and program benefits of the long acting FP method to the National Family Planning program.

1.3 Justification

In Kenya, reducing the unmet need for Family Planning services can help reduce the costs of meeting five selected MDGs which are: achieving universal primary education, reduction of child mortality, improve maternal health, ensure environmental sustainability and combat HIV/AIDS, malaria and other diseases (MOH, 2010).

The IUCD can be used by nearly all women safely and effectively including those who have or have not had children, women of any age, breastfeeding, those who have just had an abortion or miscarriage in the absence of infection and women who have had pelvic inflammatory disease (PID). It is also a suitable method for women infected with HIV or those on antiretroviral therapy and progressing well. However, dual protection is recommended for women who are HIV positive. When a woman decides to use an IUCD, they can begin the method without STI testing, HIV testing, routine laboratory tests, cancer screening and breast examination. The advantages of the copper bearing IUCD (Copper T-380A) include: it is 99% effectiveness and is a reversible long term method of contraception. The quality or quantity of milk for lactating mothers is not affected and may help protect against endometrial cancer. The use of IUCD was associated with a 47 % lower risk of endometrial cancer and the duration of IUCD use, and age when it was first and last use did not significantly alter the association. Researchers suggest that the protective effect of IUCDs may be prompted by inflammatory actions that eliminate abnormal and precancerous endometrial cells. Once the IUCD is inserted, it has no further costs and most women can use the IUCD safely. Despite all the information that is available about the IUCD, it is one of the methods that is largely underutilized and among the least popular in the method mix. (WHO, 2011)

1.4 Research Question

What proportion of the sample size: clients and service providers use the IUCD and what factors influence IUCD use amongst women attending Family Planning clinics at selected sites in Embu County, Kenya?

1.5 Objectives

1.5.1 General Objective

To determine prevalence of IUCD use among FP clients and service providers in selected sites in Embu County, Kenya.

1.5.2 Specific Objectives

1. To determine prevalence of FP methods and IUCD in particular
2. To identify factors that:
 - a. contribute to uptake of IUCD
 - b. hinder uptake of IUCD

CHAPTER TWO

LITERATURE REVIEW

2.1: History of the IUCD

The IUCD has evolved through time and there are different types of IUCD. There are two broad categories of the IUCDs which are the inert and copper based devices and the hormonal based devices. The Paragard and Mirena are available in the United States and over 10 types are available in the United Kingdom. The Paragard IUCD is wrapped with copper wire creating a surface area of copper of 300mm² on the vertical arms and 40mm² on each transverse arm. The second type is known as Mirena LNG-IUCD which releases levonorgestrel at 20µg per day. A slightly smaller version of it was developed and introduced in 1962 and had a monofilament tail and was known as the Lippes Loop. The stainless steel single ring IUCD was developed in the 1970s and was widely used in China because of low manufacturing costs but was banned in 1993 due to its high failure rates of up to 10% per year (Kaufman, 1993).

The plastic T-shaped IUCD was conceived in 1968 in the USA and the idea of adding copper to the device to improve its contraceptive effectiveness was introduced in Chile. This gave rise to the Dalkon Shield plastic IUCD but was discontinued after three years following concerns after 110 cases of septic spontaneous abortions were reported and seven of the women died. Second generation copper-T IUCDs were introduced in the 1970s and for the first time achieved effectiveness rates of greater than 99%. Most women can use the IUCD safely and effectively including those infected with HIV or are on antiretroviral therapy and progressing well. Most women can start IUCD use without STI testing, HIV testing, routine laboratory tests, cancer screening and breast examination Intrauterine contraceptive device are most appropriate for women who have

achieved their desired family size and who do not prefer sterilization. The IUCD can be used by mothers who are breastfeeding and for those who do not have access to regular supply of contraceptives. IUCD has also been shown to be appropriate for women who would like to keep their form of contraception private and is also suitable for women who are forgetful and are erratic users (Kaufman, 1993).

The IUCD can play a greater role especially in sub-Saharan Africa where, fertility rates, unintended pregnancies and unmet Family Planning needs are high. The unmet need is predominantly for spacing or delaying births rather than for limiting births. In Kenya, knowledge of at least one method of Family Planning is at 94% for women and 97% for men. The most common method known is the male condom (91%), pills (90%) and injectables (89%). 39% of married women use a method of Family Planning and less than a third use a modern method most often the injectables and pills. 19% of unmarried sexually active women use injectables and 16% use condoms. The unmet FP need in Kenya is 25% of married women, 14% with regards to spacing and 10% with regards to limiting. The unmet need is highest in the rural areas (Macro, 2010).

2.2 Effectiveness of the IUCD

The IUCD is one of the long acting methods of family planning and is 99% effectiveness (less than one pregnancy occurs per 100 women using an IUCD over the first year (6-8 per 1,000 women). Return to fertility after its removal is immediate and the IUCD (Copper T-380A) is effective up to 12 years (WHO, 2011).

2.3 Mode of Action of IUCD

Several studies have shown that copper IUCDs reduce the number of viable sperm that reach the fallopian tubes where fertilization normally takes place. With regards to the mode of action, the presence of the IUCD in the uterus prompts the release of leukocytes and prostaglandins by the endometrium. These substances are unreceptive to both the

sperm and the eggs and the presence of copper increases the spermicidal effect. However, it does not protect against sexually transmitted infections (Ortiz, 2007).

2.4 Facts on IUCD

2.4.1 Contraceptive benefits, Limitations and side effects of IUCD

The TCu-380A helps protect against risks of pregnancy and may also help protect against endometrial cancer, which is cancer of the lining of the uterus. IUCD does not interfere with intercourse and women who are breastfeeding can use the IUCD. The IUCD also helps prevent ectopic pregnancies. The IUCD requires insertion by a trained service provider to insert and remove the device alongside which infection prevention practices must be observed. Some women may experience a change of menstrual bleeding patterns making it more prolonged and heavy or irregular especially in the first three to six months. Pelvic Inflammatory Disease (PID) may occur if the woman has Chlamydia or gonorrhea at the time of IUCD insertion. The IUCD may in very rare situations cause perforation of the uterus either by the IUCD or an instrument used for insertion. IUCD may lead to a miscarriage, preterm birth or infection in the rare case that a woman becomes pregnant with the IUCD in place. The IUCD does not protect against STIs including HIV and it could be expelled or translocated. (Hatcher, 2004).

2.4.2 Cost implications of using IUCD

The key aspects that a potential FP client looks at when choosing a contraceptive method are, health, domestic circumstances, specific family planning needs, and the safety and effectiveness of the methods available to her. In order to make a fully informed decision, she should also be aware of the affordability of each of her contraceptive options over the long term. Currently, contraceptives in Kenya are provided at a fee. Not only is the IUCD an inexpensive option compared to other short and long acting methods of family planning, for the health care system but also has extremely low costs for clients over

time. Contraceptive pills, for example, may initially appear cheaper than the IUCD because of their low monthly price but over a period of time, the cumulative cost of pills and injectables can be surprisingly high, due to the costs of return visits and resupply of the method. The IUCD, on the other hand, has a higher one-time "start-up" cost for the device and its insertion. Unfortunately, the cost of the IUCD cannot be paid off over time. However, the IUCD proves economical over a period of two or more years comparing the cost of its insertion and the total amount that will have been spent over the period to by pills. If a woman is thinking about medium to long-term reversible contraception, she should consider an IUCD, not just on the basis of safety and effectiveness, but because over time it will result in substantially lower out-of-pocket expenditures (Ministry of Health, 2003).

2.4.3 Kenya national policies and programs on FP and IUCD

The highest prevalence of IUCD use has been recorded in Russia and China (33%), followed by England and Wales (5%). The USA has less than 2% and sub-Saharan Africa has the lowest prevalence of IUCD use in the world despite recurrent scientific evidence of effectiveness, safety, convenience, affordability and low maintenance (Tshivhula, 2007). Contraceptive prevalence is dependent on a number of factors and in Kenya the variables are: level of education where contraceptive use increases with level of education and source of contraceptive method. Both public and private health facilities provide FP methods. Public facilities provide contraceptives to about 53% of users while 41% is supplied through the private facilities and the remaining 6% through other private sources and community based distributors. Another factor is discontinuation rates where almost four in ten women discontinue use within twelve months of adopting a method. Use of modern FP methods varies where 40% of married women are in the urban areas compared to 29% in rural areas. Contraceptive use has increased slightly since 1998 from 39% to 41% among married women excluding the northern districts of Kenya. FP is one of the strategies under the Safe Motherhood Initiative. The initiative was launched by the World Bank in collaboration with World

Health Organization and UNFPA. This initiative aims at reducing the burden of mortality throughout the world, particularly in developing countries. The initiative works towards ensuring that every woman has access to a full range of high-quality, affordable sexual and reproductive health services especially maternal care and treatment of obstetric emergencies to reduce deaths and disabilities. Family Planning is therefore an important strategy in maternal health programs and it plays a vital role in reducing maternal mortality which in Kenya is at a ratio of 488 per 100,000 live births (Macro, 2010). Family Planning has also been proven to reduce infant mortality by reducing the proportion of high risk births. Infants born less than two years after a previous birth have particularly high infant mortality rates (Macro, 2010).

2.4.4 Misconceptions about the IUCD

One of the major misconceptions about the IUCD is that they increase the risk of getting pelvic inflammatory disease (PID). However, the rates of clinical PID are low among IUCD users between 0.6 and 1.6 cases per 1000 women after the first twenty days of use. This means that out of 1000 women receiving an IUCD, 999 do not get PID. When PID occurs in a woman who has an IUCD, it is caused by *Chlamydia trachomatis* and *Neisseria gonorrhoea* or other STIs but not by the IUCD itself (Grimes, 2000). A study conducted by WHO of 23,000 IUCD insertions with 51,000 woman-years of follow-up found modest increased short-term risk of PID in IUCD users, 7 cases per 1000 women in the first 3 to 6 weeks post-insertion. After this time, PID risk appeared comparable to that of women not using an IUCD (Westrom, 1975). These findings are the basis for WHO making the recommendation that only one routine follow-up visit is needed after the first menses or 3 to 6 weeks after IUCD insertion, hence the subsequent routine visits are not needed unless the client/user has concerns.

A study carried out in 1995 by WHO in 12 developing countries found that IUCD users had 2.3 times the relative risk of developing PID compared to women who were using no contraception (Ruminjo, 2002). Having multiple partners which increases exposure to

reproductive tract infections (RTIs) is a PID risk for IUCD users as it is for all women regardless of contraceptive use. If an IUCD user's partner has more than one sexual partner, this would also increase her risk for PID. PID risk can be reduced by good counseling, screening for RTI and through good infection prevention procedures. Another concern is that the IUCD might be associated with infertility. A study conducted in the USA by Family Health International between 1997 and 1999 comparing nulligravid, infertile women with primigravid women found similar patterns of previous copper IUCD use. Tubal infertility was not associated with IUCD use, duration of use, and reason for removal or gynecologic symptoms during use but, the presence of antibodies to *Chlamydia trachomatis* was associated with infertility. There has also been concern about women with HIV/AIDS using IUCD as a method of contraception. Recent evidence suggests that IUCD are generally safe for use among women with HIV/AIDS. Two cohort studies carried out in Kenya found comparably low infectious rates of 7% to 20% and complication rates of 0.2% to 2% after IUCD insertion in HIV infected women. The studies concluded that HIV does not increase the risk of IUCD related adverse events including PID (Sinei, 1998). An additional study found cervical shedding of HIV a proxy for increased infectivity to the male partner, is not increased with IUCD use and concluded that IUCD use by HIV positive women does not appear to increase the risk of acquiring HIV among their HIV negative male partners (Richardson, 1999). In response to this evidence, WHO changed its guidance for IUCD use by women with HIV and AIDS. Previously, IUCD use by HIV infected women was not recommended because the risks outweighed the advantages. The current update is that IUCD can be used in women with HIV or AIDS because advantages outweigh the risks except for a situation where a woman with AIDS and is ill and/or on antiretroviral therapy which in that case the IUCD would not be used.

2.4.5 Myths and Rumours about IUCD

IUCD's do not prevent pregnancy by causing an abortion because, the IUCD is highly effective in preventing fertilization, the risk of causing an abortion is very rare if

pregnancy is ruled out in the client prior to insertion. IUCD's do not cause PID in low-risk couples. The risk is low when the IUCD is inserted using the 'non-touch' technique in women who have no cervical infection. If the client already has *gonorrhoea* or *chlamydia* at the time of insertion, there is a small risk of pelvic infection in the first four weeks after insertion. (Grimes, 2000)

2.4.6 Availability of other Family Planning Methods

Other family planning methods can generally be classified as short-acting or long-acting methods. The short-acting methods are: oral contraceptives, the patch, injectable, barrier methods (condoms, diaphragms, and spermicide), fertility awareness, lactational amenorrhea method (LAM), and withdrawal. They are classified as short acting because their effectiveness is one or two months. Oral contraceptives can either be combined oral contraceptives (COCs) or progestin only pills (POPs) (WHO, 2011).

Long-acting methods include implants, female sterilization (BTL-bilateral tubal ligation) and male sterilization (vasectomy) are appropriate for couples who want to delay their first pregnancy, space pregnancies, or limit pregnancies. Male and female sterilization can be used by men and women who are sure they want no more pregnancies. Informed and voluntary decision making is foundational to family planning (FP) service provision. The importance of this principle, and the informed consent that is a part of this principle, is brought to light especially when providing long-acting contraceptives. LAPMs are by far the most effective (99% and greater) methods of contraception available. They are all clinical methods and thus must be provided by a trained health care provider in a clinical setting. Only one interaction with the health care provider results in years of contraceptive protection, saving clients time, effort, and money while easing the patient load at facilities. (Blumenthal, 1995).

2.4.6.1 Combined Oral Contraceptives (COCs)

Combined oral contraceptives are pills that contain low doses of two hormones - estrogen and progestin. The COCs work by inhibiting the release of eggs by the ovaries. In typical use, about eight out of 100 COC users may become pregnant. COCs may also prevent pregnancy by thickening the cervical mucus so that sperm cannot easily enter the uterine cavity. Advantages of COCs are: they are effective and reversible, safe for almost all women (serious complications are very rare), it can be used by women of any age whether or not they have children, do not interrupt sexual activity and are woman-controlled, can be stopped at any time without a visit to a health care provider, usually cause a predictable bleeding pattern with less blood loss, help prevent certain cancers, anemia, menstrual cramps, and irregular bleeding, and may be used by the breastfeeding mother after the first six months postpartum. Some limitations of COCs include: it should not be used by older (>35 years) women who smoke, requires the woman to remember to take a pill every day, they cannot be taken with certain medicines that decrease COC effectiveness, in the first few months, some users have upset stomach, bleeding between periods or spotting, weight gain or mild headache (But none of these side effects are dangerous) (Ministry of Health and Sanitation, 2010).

2.4.6.2 The patch and vaginal ring

The patch and the vaginal ring contain estrogen and progestin. The patch sticks to the skin so that the hormones are absorbed into the body; the ring is inserted into the vagina so that the hormones are absorbed through the vaginal mucosa. Absorption through the skin or mucous membranes provides continuous action. The patch must be changed once a week. The combined vaginal ring is placed in the vagina and left in place for three weeks. The ring is removed for the fourth week, during which time the woman will have menstrual bleeding. The risk of pregnancy is greatest when the woman is late in changing the patch or in inserting the ring. Although research on effectiveness is limited,

clinical trials of the vaginal ring as well as of the patch suggest that, because they enhance more consistent use, they may be more effective than COCs. (Speroff, 2011)

2.4.6.3 Progestin-Only Pills (POPs)

Progestin only pills contain only progestin and no estrogen. POPs work primarily by thickening cervical mucus, which blocks sperm from reaching the egg and by preventing the release of eggs (ovulation.) Beginning at six weeks postpartum, POPs can be safely and very effectively taken by the woman who is breastfeeding. POPs work in synergy with breastfeeding. Also, the woman who is not breastfeeding may start POPs immediately after giving birth. However, POPs for the non-breastfeeding woman will result in more bleeding irregularities and higher pregnancy rates than will COCs. POPs can be used by women who have problems taking estrogen (e.g., nausea, severe headaches, or breast tenderness). Frequently (as many as 40%) women experience menstrual irregularities when taking progestin-only contraceptives, including POPs. (WHO, 2008)

2.4.6.4 Monthly Injectables

Injectable contraceptives contain hormone progestin. Depo-Provera (DMPA), the more common injectable, is effective for three months; Noristat (NET-EN) is effective for two months. As commonly used, only about three women will become pregnant per 100 women using progestin-only injectables over the first year. Progestin-Only injectable contraceptives work primarily by inhibiting ovulation, require action by the woman only once every three months (for Depo-Provera) or two months (for Noristat), do not interfere with sex, are private: No one else can tell that a woman is using contraception and the injection can be as much as two weeks early or late and still maintain effectiveness. Some limitations to some women are: it may cause spotting or heavier or longer periods for the first few months, after two to three injections, a woman may stop having periods and may cause weight gain (Hatcher, 2004). In Kenya, 35.1% of women have ever used injectables and 67.2% are knowledgeable of the method (Macro, 2010)

2.4.6.5 Barrier Methods

With reference to barrier methods the diaphragm is a shallow rubber cup that is filled with a spermicide (sperm-killing substance) and placed deep within the vagina before sexual intercourse. Diaphragms work by blocking the entrance of the sperm into the uterus, and spermicides work by killing sperm upon contact. A spermicide may be used alone; however, when used alone it is one of the least effective contraceptive methods. Some benefits of diaphragms include: they are immediately effective and reversible, do not have the systemic effects of hormones, can be used as a primary or back-up method and can be used during breastfeeding. Some limitations however include: it requires a pelvic exam before use in order to select one (a diaphragm) that fits properly, requires correct use with every act of sex may interrupt sexual activity, may be difficult for a woman to insert and remove, cannot be used by a woman with poor muscle tone or sagging uterus, and may cause irritation of the vagina or urinary tract infection. Diaphragms are available in very few developing countries. (WHO, 2011)

Male condom is a thin sheath of latex or other material that a man puts on his erect penis before entering the woman's vagina. The condom prevents pregnancy by holding the semen so that it does not pass into the woman's vagina. With typical use as many as 15 women become pregnant per 100 couples using a male condom during the first year. A female condom is a thin covering of polyurathene plastic that forms a pouch that covers the outer labia and lines the vagina. As with other barrier methods, the female condom works by blocking the entry of the sperm into the uterus, so that no contact is made between sperm and egg. With typical use as many as 21 women out of 100 become pregnant during the first year while using a female condom. Condoms are generally accepted worldwide. A significant characteristic of the female and latex male condoms is that they offer protection against STIs and HIV. They also do not require a health care provider, are immediately reversible, and do not expose the body to hormones. However, many couples do not like using condoms most common reasons are; lack of availability especially the female condom, reduced sensation, difficult to put on, slips off or breaks,

difficult to persuade partner to use, and allergic reaction around the vagina or penis. (Hatcher, 2009)

2.4.6.6 Fertility Awareness Method

This is a method that is used to identify the days of the month when a woman is most likely to become pregnant in order to refrain from sexual intercourse on those days. Fertility awareness methods include the calendar (rhythm) method, basal body temperature method, the cervical mucus method, the symptothermal method, and the standard days method (SDM). The SDM is a type of calendar method based on the fact that there is an identifiable "fertile window" during the woman's menstrual cycle several days before ovulation and a few hours after when she can become pregnant. To prevent pregnancy, users avoid unprotected intercourse by using a condom or abstaining on days 8 to 19 of the cycle. A formula based on computer analysis of 7,500 menstrual cycles. (Arevalo, 2002) A unique quality of SDM is the use of "CycleBeads" that allow a woman to track her cycle accurately without a calendar. The characteristics of Fertility Awareness Methods are: user-controlled, low cost, free from side-effects and contraindications, require diligence with every act of intercourse, may have high pregnancy rates in typical use, require training, motivation, and commitment and require partner cooperation. In Kenya, 12.9% of women have ever used the method and 61.5% are knowledgeable of the method (WHO, 2013).

2.4.6.7 Lactational Amenorrhea Method (LAM)

LAM is a modern temporary contraceptive method that delays the return of fertility after giving birth. A mother can use LAM effectively if all three of the following criteria are met: her menstrual bleeding has not returned, she is fully or nearly fully breastfeeding and her baby is less than six months old. The optimal pattern is for the baby to be nursed as frequently and as long as the infant wants, both day and night. At night, no interval between feedings should be greater than six hours. LAM works by nipple stimulation to produce natural hormones that prevent the ovary from releasing eggs. For

LAM to be effective, the baby must be breastfed only and on demand. With perfect use of LAM, only two women out of 100 become pregnant in the first six months after childbirth (ACCESS/FP, 2009).

2.4.6.8 Implants

Implants are small, flexible rods or capsules that are placed under the skin of the upper arm. All work by providing slow release of a progestin. Common Types of Implants are: Jadelle (has two rods, effective for five years), Implanon (has one rod, effective for three years) and Norplant (has six capsules, labeled for five years of use, but large studies have found it effective for seven years) A trained care provider is required to insert and to remove the rods. Implants are extremely effective, resulting in fewer unintended pregnancies than IUDs or even sterilization. Implants are one of the most effective and long-lasting methods, with less than one pregnancy per 100 women using implants over the first year (five per 10,000 women,) (Salem, 2010). In Kenya, 2.6% of women have ever used the method and 67.2% are knowledgeable of the method (Macro, 2010)

2.4.6.9 Female Sterilization

Female sterilization is the most widely used modern method of contraception in the world. The most common method of surgical female sterilization is bilateral tubal ligation, generally by mini-laparotomy ("mini-lap"), a procedure in which the fallopian tubes (the tubes between the ovaries and the uterus) are either cut and/or tied. Alternatively, the tubes may be blocked. By disrupting the tube, the egg from the ovary does not come in contact with the sperm. Mini-lap is safe, with few medical restrictions. The use of local anesthesia and light sedation has allowed wider provision of services. Mini-lap is highly effective. Pregnancy rates are very low; only 0.5% of women who have had mini-lap become pregnant within the first year after the surgery. (Salem, 2010). In Kenya, 5% of women are using the method (NCPD, 2013).

2.4.6.10 Male Sterilization (Vasectomy)

Vasectomy is a safe, simple procedure performed under local anesthesia, in which the tube that transports the sperm to the penis (vas deferens) is cut or tied to prevent the sperm from reaching an egg. The risk of pregnancy is very low and commonly quoted as 0.15% to 0.40%, but failures as high as 3-5% have been reported. Vasectomy is not immediately effective and WHO recommends that the couple use alternative contraception for three months after the procedure. Vasectomy has few side effects and complications compared to many contraceptive methods for women. However, some men may have scrotal discomfort and soreness for two to three days following the procedure. (FHI, 2007). In Kenya, 38.1% of women are knowledgeable of the method (Macro, 2010).

CHAPTER THREE

MATERIALS & METHODS

3.1 Study Design

This was a cross-sectional study of six sampled health facilities in Embu County that represent the five administrative divisions in Embu.

3.2 Study Site

The study was conducted in Embu County which is located in Eastern Province of Kenya and is one of eight provinces of the country. Embu is located in the second largest province of Kenya with about 159,891 km. Embu is located approximately 120 kilometres (75 miles) northeast of Nairobi toward Mount Kenya. Embu serves as the provincial headquarters of Eastern Province which has 13 districts. It borders Mbeere district to the East & to the Southeast, Kirinyaga to the West and Meru South to the North. It lies between latitude 0° 8' and 0° 35' South and longitude 37° 19'' and 37°42' East. It occupies a total area of 729 square kilometers and is sub-divided into five administrative divisions which are: Central, Manyatta, Runyenjes, Nembure, and Kyeni. The altitude range is between 1200-4500mm. The district is drained by four major rivers which are; Thuci, Kii, Rupingazi and Ena and the climate is arid to semi-arid. Embu also hosts major public county offices including the main County hospital- Embu. The district has a population of 318,724 (2007) is a cosmopolitan town and the main trading center in Eastern Kenya. The county has 34 Government health facilities divided into: 1 county hospital, 1 sub-county hospital, 6 health centers, 26 dispensaries. (Embu County statistical office 2007)

3.3 Study Population

The study population comprised of women of reproductive age attending family planning clinic and health care providers offering family planning or interacting with women attending FP clinics working in Kibugu health center, Kianjokoma health center, Runyenjes sub-county hospital, Nembure Health center, Karurumo rural health training center and Embu County hospital. The facilities were chosen because they were able to offer IUCD services if a client opted to choose the method.

3.4 Study Sample- Inclusion, Exclusion

Two questionnaires, one for the client's interview and the other for the service provider's interview were used to gather data during the health facility visits (appendix 5 and 6). Each of the tools focused on social and demographic data and sexual and reproductive health (parity and child spacing). Both questionnaires were translated into Kiswahili which is one of the local languages. Public health facilities were selected to represent the five administrative divisions in Embu county and also because they were among those that were providing IUCD services because IUCD insertion is not done at dispensary level. At the same time a sample of the facilities where service providers were able to provide FP services including IUCD. From the selected facilities, 279 clients and 18 service providers were interviewed. The sample of service providers was selected from those who were present at the facility on the days the interviews were being conducted and who were providing FP related services. The clients were selected using purposive sampling. For the sampling frame, Kibugu health center, Kianjokoma health center, Runyenjes sub-county hospital, Nembure Health center, Karurumo rural health training center were estimated to have a client load of an average of 40 clients per day while Embu county hospital an average of 80 clients per day. This is where the sample was drawn from using the formula below.

IUD use in Kenya (KDHS 2003) =2.4%.

Using the formula of sample size

$$n = \frac{Z^2 (1-\alpha/2).P(1-P)}{d^2}$$

where

n=sample size

$Z^2 (1-\alpha/2)$ (Standard errors)= 1.96 of 95% confidence interval

P= estimated proportion 2.4%

d=desired precision 0.02

Therefore

$$n = \frac{(1.96)^2(0.024)(0.976)}{(0.02)^2} = 224.5=225$$

The clients were selected using purposive sampling. The sampling frame below provides estimated population sizes for selected study sites/facilities based on reported daily client loads. Kibugu health center, Kianjokoma health center, Runyenjes sub-county hospital, Nembure Health center, Karurumo rural health training center were estimated to have an average client load of 40 per day while Embu county hospital an average of 80 clients per day. The estimated sample size will be apportioned proportionately among the sites based on this sampling frame.

N values:

Facility		Simple Random Sample
n1 Embu County hospital	80X7	560
n2 Karurumo	40X7	280
n3 Kibugu	40X7	280
n4 Kianjokoma	40X7	280
n5 Runyenjes	40X7	280
n6 Nembure	40X7	280
TOTAL		1960

The inclusion criteria was:

- The health facilities that offered services to a large catchment area and their outpatient attendance for all health services was more than 30,000 clients per facility and the staff were able to provide a wide range of family planning services
- The clients seeking family planning services that consented to participate
- Service providers providing family planning services and had the capacity to insert IUCD's that consented to participate

The Exclusion Criteria was:

- Any person below eighteen years because they are not recognized as adults to give consent.
- Service providers and clients who did not consent.
- Women not seeking family planning services

3.5 Data Collection

Ethical approval was first obtained from KEMRI National Ethics Review Committee (Appendix 2). Prior to the actual data collection the client and service provider

questionnaires were piloted in a different facility to check on flow and content and level of understanding of the questions by the respective respondents. The data collection team was also given an orientation to the data collection tools before proceeding to actual data collection. During the study, there was no risk of injury to the study respondents and participation, was purely on voluntary basis. All respondents interviewed were given the option to discontinue the interview at any time. An informed consent form was read out to the individuals before the interview. Those who gave their consent were asked to sign the individual consent forms before commencement of interviews.

3.6 Data Management

The questions were coded and so as to maintain confidentiality of the clients who were interviewed. The different questions in the client and service provider questionnaires were also assigned codes which were entered into the computer using EPI Info program and SPSS was used to run the different variables. Confidentiality was maintained and to ensure this, data provided was not shared with anyone outside the study. All interviews were conducted in privacy so as to minimize the participant's discomfort. The data was secured and was accessible to only persons entering data and they used a password to access the information. The questionnaires were kept in a locked file cabinet and the researcher was in charge of monitoring the flow of the questionnaires.

CHAPTER FOUR

RESULTS

4.1: Socio-Demographic and Socio-Economic Characteristics of the client respondents

61.5% of the respondents were aged 21 - 30 years, 85.2% of the respondents were ever married and those currently married constituted 82.2%. Those who separated, divorced or widowed were 3%. More than half (53.6%) of the respondents had completed primary level education and 40% had completed secondary level education. A relatively high proportion of the respondents (60.4%) were self-employed while 9.1% were formally employed. Majority of the respondents (72.1%) reported having delivered either one or two children with 4.4% not having a child at the time of interview (Table 4.1).

Table 4.1: Selected Socio-Demographic and Socio-Economic characteristics of respondents

Variables	n=297	%
Age (years)		
< =20	19	6.4
21-30	182	61.5
31-40	75	25.3
41-50	13	4.4
50+	7	2.4
No response	1	
Marital status		
Single	44	14.8
Married	244	82.2
Widowed	5	1.7
Divorced	3	1
Separated	1	0.3
Highest educational level completed		
Primary	158	53.6
Secondary	118	40
College/university	19	6.4
No response	2	
Occupation		
Self employed	179	60.4
Formal employment	27	9.1
Casual worker	1	0.3
Farmer	30	10.2
Housewife	43	14.5
Other unspecified	13	4.4
Unemployed	3	1
No response	1	
Parity		
None	13	4.4
1 - 2	214	72.1
3 - 4	51	17.2
>4	19	6.4

4.2: Social-Demographic and Socio-Economic characteristics of the service provider respondents

About 83% (n=18) of the service providers were over 40 years (Table 4.2). All the service providers were married. From the respondents (33%) were Kenya Registered Community Health Nurses (KRCHN) and (33%) were Enrolled Nurse/Midwives (EN/M). Majority of the service providers (67%) reported having three to four children while 11% not having had a child at the time of being interviewed.

Table 4:2 Social-Demographic and Socio-Economic characteristics of service providers

Variables	n=18	%
Age (years)		
31-40	3	17
41-50	8	44
>50	7	39
Marital status		
Married	18	100
Qualification/Cadre		
KRCHN	6	33
EN/M	6	33
EN	4	22
Lab Tech	2	11
Parity		
None	2	11
1-2	4	22
3-4	12	67

4.3 Knowledge and use of Family Planning Methods among Clients

Each client respondent spontaneously mentioned at least one method of FP when asked what FP methods they knew. A greater majority of respondents showed more awareness

of injectables (95.6%) and pills (90.9%) as forms of FP methods. Surgical methods such as Bilateral Tubal Ligation (BTL) and vasectomy were known to 25.3% of the respondents interviewed. Figure 4.1 shows a comparison of knowledge of FP methods among the clients.

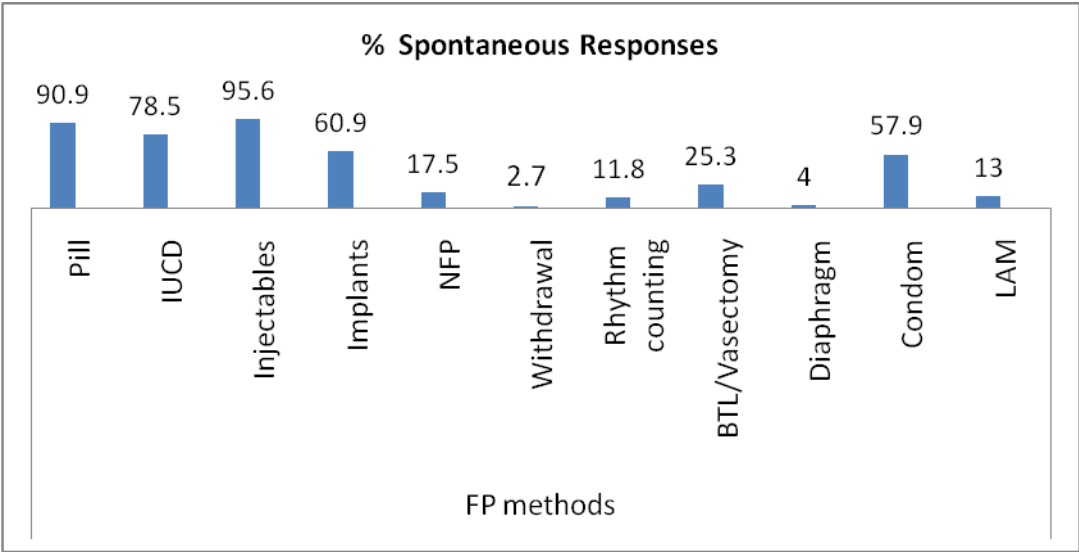


Figure 4.1: Knowledge of specific Family Planning methods among client respondents

4.4 Family planning methods known to clients

Mean combination of specific FP methods mentioned was 6 (+ 2 SD) ranging between 2 and 11. (37.4%) of the respondents were aware of 6 – 7 methods of Family Planning (Figure 4.2). This showed that the clients were aware of more than one method of Family Planning.

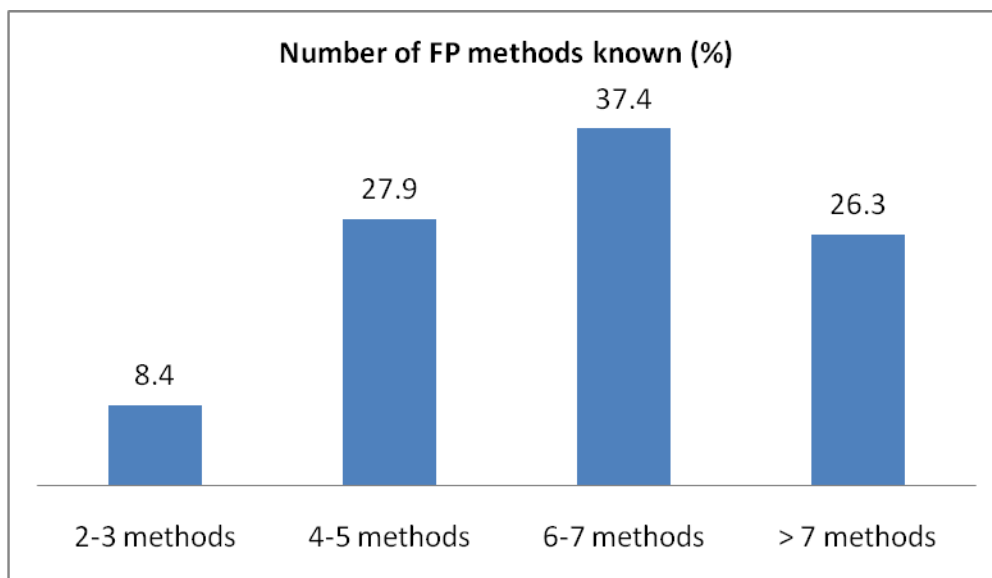


Figure 4.2: Combination of mentioned Family Planning methods as known by the client respondents

4.5 Family planning use among client respondents

Majority of the client respondents (85.5%, n=279) reported using a form of family planning method. The most commonly reported method was injectables (43.4%) followed by pills (19.5%). 8.8% of the client respondents were currently using the IUCD while 7.4% had previously used the IUCD. 61.5% of the client respondents reported to have used family planning methods for 2 years at most while 27.1% had used family planning methods for more than 5 years. Majority of the client respondents (73.8%) started using the family planning methods at age 21 – 30 years. When probed on some of the reasons for changing the family planning method, majority of the respondents (91%) indicated that side effects were the main reason, while the rest cited personal choice. Assessment of previous use of family planning methods revealed high use of pills (38.0%) followed by Injectables (27.3%) while IUCD usage was reported in 7.4% of the respondents (Table 4.3).

Table 4.3: Use of. Family Planning among the client respondents

Variables	n=297	%
Current use of Family Planning method		
Using	254	85.5
Not using	43	14.5
Specific Family Planning methods currently being used		
Pills	58	19.5
IUCD	26	8.8
Injectables	129	43.4
Implants	26	8.8
NFP	2	0.7
Rhythm counting (days)	2	0.7
Tubal ligation	4	1.3
Male condom	4	1.3
LAM	8	2.7
Tying knot to thread with menses blood	1	0.3
None	43	14.5
Specific Family Planning methods previously used		
Female condom	1	0.3
Pills	113	38
IUCD	22	7.4
Injectables	81	27.3
Implants	7	2.4
NFP	7	2.4
Withdrawal	1	0.3
Rhythm counting (days)	4	1.3
Male condom	15	5.1
Other	11	3.7
None	113	38
Duration of using Family Planning method (years)		
<1	109	39.9
1 – 2	59	21.6
3 – 4	31	11.4
>5	74	27.1
Not applicable	24	
Age at start of using Family Planning (years)		
<20	64	23.3
21-30	203	73.8
31-40	8	2.9
Not applicable	22	
Reasons for change of Family Planning method		
Personal choice	84	48
Side effects	91	52
Not applicable	122	

Spontaneous responses from the service providers on the other hand showed that 100% of the service providers were aware of all the eleven methods of Family Planning. This was a good indication that the service providers were aware about the family planning

method mix. More than half (65%) of the service providers had previously used the IUCD as a method of Family Planning and 22% were currently using the IUCD, 17% had BTL and 6% were using injectables. (Table 4.4)

Table 4.4: Use of Family Planning among the service provider respondents

Variables	n=18	%
Current use of Family Planning method		
Using	8	44
Not Using	7	39
No response	3	17
Specific Family Planning methods currently being used		
Bilateral Tubal Ligation (BTL)	3	17
IUCD	4	22
Injectables	1	6
None	7	7
No response	3	3
Specific Family Planning methods previously used		
IUCD	5	28
Injectables	5	28
Pills	8	44
Duration of using Family Planning method (years)		
<1	1	6
1-2	2	11
3-4	1	6
>5	8	44
No response	4	22
Age at start of using Family Planning (years)		
21-30	14	78
31-40	2	11
No response	2	11

4.6 Family planning methods used by clients

Out of 184 client respondents that had a previous history of using a method of family planning, mean combination of specific family planning methods used was 1 (+ 1 SD) ranging between 1 and 4. A relatively high proportion of the respondents (39.4%) used one method while clients who had no history of using a family planning method (0) were 38% (Figure 4.3).

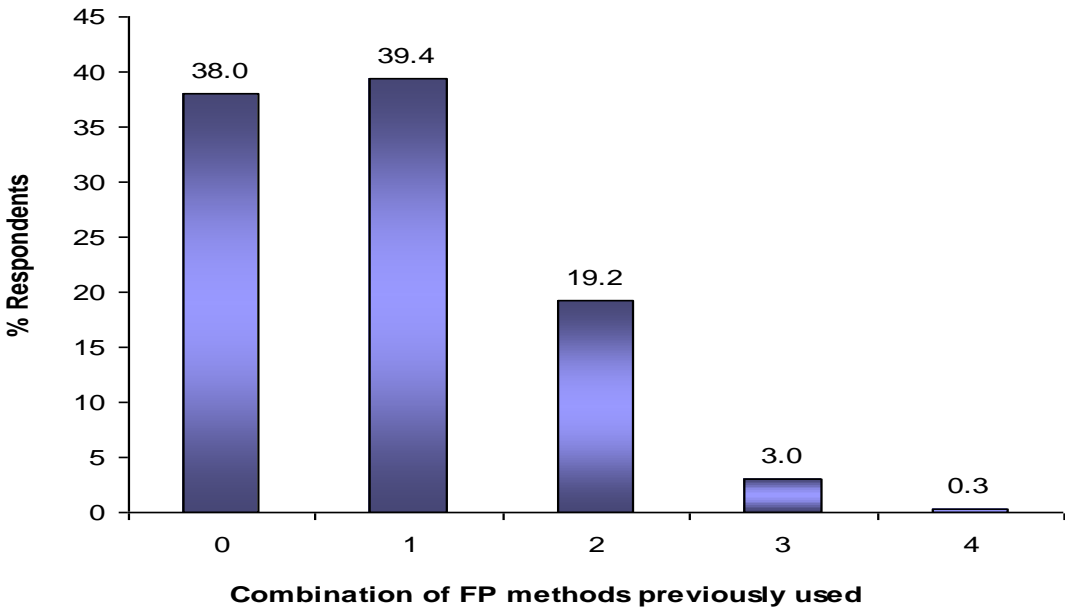


Figure 4.3: Combination of mentioned family planning methods previously used by the client respondents

4.7: Family Planning Accessibility and Source of Information on FP among Client Respondents

A high proportion of the respondents (83.3%) reported that they paid for family planning services, with 89.6% paying less than one dollar for every visit (Table 4.5).

Table 4.5: Accessibility of family planning services among the respondents

Variables	n=297	%
Payment for family planning services		
Pay	240	83.3
No payment	48	16.7
No response	9	
If Payment is done cost of family planning services in dollars		
<1 dollar	215	89.6
1 dollar	19	7.9
3 dollars	4	1.7
>5 dollars	2	0.8
No response	57	

The commonly cited sources of information on family planning include radio (13.1%) and poster (11.1%). Of the respondents only 14.8% reported that they were offered information, education and communication (IEC) materials on family planning methods during counseling. The most commonly mentioned IEC materials being magazines (38.6%), and brochures (27.3%). Out of 44 respondents that accessed IEC materials on family planning during the counseling visits, 88.6% accessed from a single source (Table 4.6).

Table 4.6: Information on family planning among the client respondents

Variables	n=297	%
Sources of information on family planning		
Brochure	2	0.7
TV	17	5.7
Radio	39	13.1
Posters	33	11.1
Newspapers	3	1
Magazines	22	7.4
Job aids	1	0.3
None of the above	216	72.7
Accessibility of IEC materials on family planning methods during counseling		
Provided	44	14.8
Not provided	253	85.2
IEC materials on FP methods offered during counseling		
Brochure	12	27.3
Magazines	17	38.6
Newsletters	8	18.2
Other	13	29.5
Not applicable	253	
Combination of IEC materials offered during counseling		
1	39	88.6
2	3	6.8
3	2	4.5
Not applicable	253	

There were various sources of information provided by the service providers to the clients. Less than half (44%) of the service providers gave IEC materials on family planning to the clients during counseling (Table 4.7).

Table 4:7: Source of information provided by service providers

Variables	N=18	%
Sources of information on FP available to clients		
Brochure	2	11
Booklets	1	6
Manufacturers literature	4	22
Other	2	11
None provided	9	50
Service providers who offered IEC materials to clients		
Provided	8	44
Did not provide	9	50
Not applicable	1	6

4.8: Awareness of the IUCD among the Client Respondents

Majority of the respondents (86.9%, n=279) reported to have heard of Intrauterine Contraceptive Device (IUCD), 14.8% had ever used IUCD as a family planning method, 38.0% knew of someone that uses IUCD as a family planning method, 40.1% agreed to the fact that IUCD can be used by a lactating woman, 4.0% understood that IUCD does not protect against sexually transmitted infections, whereas 13.1% understood the mechanism of the IUCD in preventing pregnancy. Overall, 40.7% of the respondents were not sure of the effectiveness of IUCD whereas 33.7% perceived it to be an effective method (less than 5 pregnancies per 100 women). Only 14.5% noted that it was very effective (less than 1 pregnancy per 100 women). When probed on some of the disadvantages of using IUCD as a family planning method, the most commonly cited disadvantages were side effects (13.8%), and conceiving when using the IUCD (13.8%) (Table 4.8).

Table 4.8: Awareness and use of IUCD as a Family Planning method among the respondents

Variables	n=297	%
Ever heard of Intrauterine Contraceptive Device (IUCD)		
Yes	258	86.9
No	39	13.1
Ever used IUCD as an FP method		
Yes	44	14.8
No	253	85.2
Knowledge of someone who uses IUCD as an FP method		
Yes	113	38.0
No	184	62.0
IUCD can be used by a lactating woman		
Yes	119	40.1
No	22	7.4
Not sure	156	52.5
IUCD protect against Sexually Transmitted Infections		
Yes	12	4.0
No	188	63.3
Not sure	97	32.7
Understand the mechanism of the IUCD in preventing pregnancy		
Yes	39	13.1
No	258	86.9
Effectiveness of IUCD		
Very effective	44	14.8
Effective	100	33.7
Not effective	32	10.8
Not sure	121	40.7
Disadvantages of using IUCD		
Side effects	41	13.8
Men feel the strings	18	6.1
Predisposes to PID	8	2.7
Can conceive	41	13.8
It can come out	13	4.4
It can disappear inside	27	9.1
Perforation	6	2.0
Other	24	8.1
Don't know	46	15.5
None	110	37.0
Disadvantages of using IUCD		
1 Disadvantage	112	37.7
2 Disadvantages	23	7.7
3 Disadvantages	6	2.0
Don't know	46	15.5

4.9: Service provider training on FP and commodity supply to the health facilities

General training on family planning had been done by 83% of the service providers and 89% of them had received training on IUCD insertion and the average number of IUCD insertions ranged between 6-15 insertions per month. 94% said that they understood the mechanism of the IUCD in preventing pregnancy. With regards to effectiveness of the IUCD, 39% of the service providers were certain that the IUCD is 99% effective while 5% were not sure about its effectiveness.

Family planning commodities including IUCD were supplied to the health facilities from the central store which is Kenya Medical Supplies Agency (KEMSA). Generally, the supply of pills, IUCD, injectables, implants and condoms was continuous. Supply of IUCD was adequate (stock-out has occurred only once in the last six months) and continuous (no stock-out in the last one year), (57%). The only commodities that were noted to have erratic supply were the injectables, implants and diaphragm. (Figure 4.4)

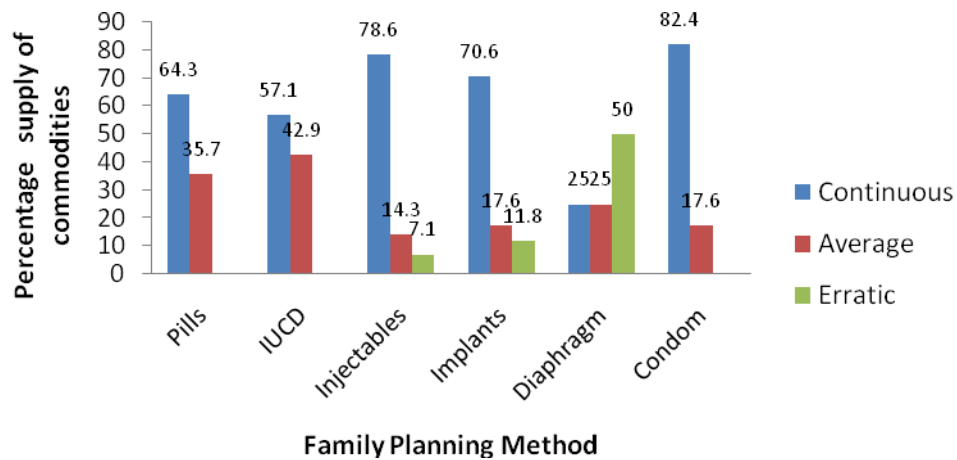


Figure: 4.4: Supply of Family Planning commodities to the health facilities

4.10: Male Involvement in FP services

Assessment of male involvement was done by identifying the male partners who accompanied their partners to the clinic to seek FP services. The assessment revealed only (3.8%) accompanied their partners. Though most of the respondents (52.7%) failed to give any reason why they were not accompanied by their partner during the visit to the clinic, (28.3%) gave work related reasons for not going to the clinic with their partners (Table 4.9).

Table 4.9: Male involvement in Family Planning among the client respondents

Variables	N=297	%
Partner accompanied the participant during the visit to the clinic		
Yes	11	3.8
No	279	96.2
Not applicable	7	
If no, Reason why		
Comfortable when I come alone	1	0.4
Deceased	2	0.7
Divorced	5	1.8
Don't know	4	1.4
Don't like it	7	2.5
Not available	11	3.9
Not necessary	1	0.4
No reason given	147	52.7
Separated	2	0.7
Single	20	7.2
Working	79	28.3
No response	18	

4.11: Use of IUCD in relation to different characteristics of the client respondents

Three socio-demographic characteristics namely, age, marital status, and parity were analyzed to ascertain if they have any effect on the use of IUCD as a family planning method among the respondents. Respondents who were above 30 years of age were more likely to use the IUCD (OR=4.23; 95% CI: 2.02-8.86; p<0.001), compared to those less than 20 years of age. Respondents who had delivered four or more children were more likely to use IUCD as a family planning method (OR=10.21; 95% CI: 3.73 – 27.95; p<0.001) (Table 4.10).

Table 4.10: Use of IUCD as a FP method in relation to selected socio-demographic characteristics among the respondents

Variables	Ever used IUCD (n=44)		Never used IUCD (n=253)		OR ^ψ	95% CI ^φ		P value*
	n	%	n	%		Lower	Upper	
Age in years								
<=20 yrs	15	7.5	186	92.5	Reference			
31-40 yrs	19	25.3	56	74.7	4.23	2.02	8.86	<0.001*
>40 yrs	10	50	10	50	12.47	4.49	34.65	<0.001*
Marital status								
Single	1	2.3	43	97.7	Reference			
Married	41	16.8	203	83.2	8.68	1.16	64.87	0.035
Widow/divorced/separated	2	22.2	7	77.8	12.29	0.98	154.21	0.052
Parity								
None	0	0	13	100	UD ^θ	UD ^θ	UD ^θ	0.999
1 – 2	21	9.8	193	90.2	Reference			
3 – 4	13	25.5	38	74.5	3.14	1.45	6.82	0.004*
>4	10	52.6	9	47.4	10.21	3.73	27.95	<0.001*

*Significant at p<0.05 bolded; ^ψ Odds ratio; ^φ 95% Confidence Interval; ^θ Undefined

4.12: Use of IUCD in relation to other specific factors among the client respondents

Seven factors: duration in years of using family planning method, combination of specific family planning methods previously used, and accessibility of IEC materials on family planning methods during counseling were statistically significant with use of IUCD as a family planning method among the respondents. Use of family planning method for more than five years was significantly associated with increased level of use of IUCD as a family planning method (24.3%) OR=3.18; 95% CI: 1.37 – 7.37; P=0.007) compared to <1 year (9.2%). Analysis on use of IUCD as a family planning method in relations to combination of specific family planning methods previously used showed that, use of IUCD as a family planning method was high in previous use of one (12.0%), (OR=2.94; 95% CI: 1.02 – 8.44; P=0.046), two (31.6%), (OR=9.97; 95% CI: 3.47 –

28.67; P<0.001), and more than two (70.0%), (OR=50.40; 95% CI: 9.95 – 255.36; P<0.001) combinations of specific Family Planning methods compared none use (4.4%). Non-accessibility to IEC materials on family planning methods during counseling did not reduce the uptake of IUCD as a Family Planning method, (16.6%), (OR=4.18; 95% CI: 0.97 – 17.94; P=0.038) as compared to those who had access to IEC materials (4.5%) (Table 4.11).

Table 4.11: Use of IUCD as a Family Planning method in relation to current and previous use of Family Planning among the respondents

Variables	Ever used (n=44)		Never used (n=253)		OR ^ψ	95% CI ^φ		P value *
	n	%	n	%		Lower	Upper	
Current use of Family Planning method								
Yes	40	15.7	214	84.3	1.82	0.62	5.38	0.271
No	4	9.3	39	90.7	Reference			
Duration of using Family Planning method (years)								
<1	10	9.2	99	90.8	Reference			
1-2	7	11.9	52	88.1	1.33	0.48	3.71	0.582
3-4	7	22.6	24	77.4	2.89	1	8.37	0.051
>5	18	24.3	56	75.7	3.18	1.37	7.37	0.007*
No response	2		22					
Age at start of using Family Planning (years)								
<20	12	18.8	52	81.3	Reference			
21-30	27	13.3	176	86.7	0.66	0.31	1.4	0.284
31-40	4	50	4	50	4.33	0.95	19.84	0.059
No response	1		21					
Combination of specific Family Planning methods previously used								
None	5	4.4	108	95.6	Reference			
1	14	12	103	88	2.94	1.02	8.44	0.046*
2	18	31.6	39	68.4	9.97	3.47	28.67	<0.001
>2	7	70	3	30	50.4	9.95	255.36	<0.001
Payment for Family Planning services								
Yes	36	15	204	85	0.88	0.38	2.04	0.77
No	8	16.7	40	83.3	Reference			
No response	0		9					
Sources of information on Family Planning encountered								
At least one source	12	14.8	69	85.2	1	0.49	2.05	1
None	32	14.8	184	85.2	Reference			
Offered IEC materials on FP methods during counseling								
Yes	2	4.5	42	95.5	Reference			
No	42	16.6	211	83.4	4.18	0.97	17.94	0.038*

*Significant at $P < 0.05$ bolded; ^ψ Odds ratio; ^φ 95% Confidence Interval;

Six factors: ever heard of Intrauterine Contraceptive Device (IUCD), knowledge of someone who uses IUCD as a family planning method, understanding that IUCD can be used by a lactating woman, understanding that IUCD does not protect against sexually transmitted infections, effectiveness of IUCD, and understanding the mechanism of the IUCD in preventing pregnancy were significantly associated with use of IUCD as a family planning method among the respondents. From the respondents who indicated that they had previously heard of Intrauterine Contraceptive Device, (17.7%) used IUCD as a Family Planning method compared to none (0.0%) that had never heard ($P = 0.005$) (Table 4.12)

Knowledge of someone who uses IUCD as an FP method was significantly associated with increased level of use of IUCD as a family planning method (24.8%), (8.7%), (OR=3.46; 95% CI: 1.77 – 6.74; $P < 0.001$) compared to not knowing anyone using the IUCD (8.7%). Understanding that IUCD can be used by a lactating woman was significantly associated with increased level of use of IUCD as a family planning method (33.6%), (OR=22.03; 95% CI: 7.62 – 63.68; $P < 0.001$) compared to understanding otherwise (2.2%) (Table 4.12).

Not being sure whether use of IUCD can protect oneself against sexually transmitted infections was associated with reduced level of use of IUCD as a family planning method (5.2%) compared to understanding that it cannot protect (20.2%). Use of IUCD as a family planning method was lower in those who indicated that it is effective (20.0%), not effective (12.5%), and not sure of its effectiveness (0.8%), compared to those who indicated that IUCD is very effective (43.2%). Understanding how the IUCD prevents pregnancy was associated with increased level of use of IUCD as a family planning method 48.7%, (OR=8.85; 95% CI: 4.18 – 18.77; $P < 0.001$) (Table 4.12).

Table 4.12: Use of IUCD as a Family Planning method in relation to current and previous use of FP among the respondents

Variables	Ever used (n=44)		Never used (n=253)		OR ^ψ	95% CI ^φ		P value*
	n	%	n	%		Lower	Upper	
Ever heard of Intrauterine Contraceptive Device (IUCD)								
Yes	44	17.1	214	82.9	UD ^θ	UD ^θ	UD ^θ	0.005*
No	0	0	39	100	Reference			
Knowledge of someone who uses IUCD as an FP method								
Yes	28	24.8	85	75.2	3.46	1.77	6.74	<0.001*
No	16	8.7	168	91.3	Reference			
IUCD can be used by a lactating woman								
Yes	40	33.6	79	66.4	22.03	7.62	63.68	<0.001*
No	4	2.2	174	97.8	Reference			
IUCD protect against Sexually Transmitted Infections								
Yes	1	8.3	11	91.7	0.36	0.04	2.87	0.334
No	38	20.2	150	79.8	Reference			
Not sure	5	5.2	92	94.8	0.21	0.08	0.56	0.002
Effectiveness of IUCD								
Very effective	19	43.2	25	56.8	Reference			
Effective	20	20	80	80	0.33	0.15	0.71	0.005*
Not effective	4	12.5	28	87.5	0.01	<0.01	0.09	<0.001*
Not sure	1	0.8	120	99.2	0.19	0.06	0.63	0.007
Understand the mechanism of the IUCD in preventing pregnancy								
Yes	19	48.7	20	51.3	8.85	4.18	18.77	<0.001*
No	25	9.7	233	90.3	Reference			
Number of mentioned disadvantages of using IUCD								
None/Don't know	21	13.5	135	86.5	0.65	0.22	1.92	0.439
One	7	20.6	27	79.4	1.09	0.3	3.92	0.896
Two	11	13.6	70	86.4	0.66	0.21	2.11	0.484
Three or more	5	19.2	21	80.8	Reference			
Partner accompanied the participant during the visit to the clinic								
Yes	2	18.2	9	81.8	1.29	0.27	6.19	0.75
No	41	14.7	238	85.3	Reference			
No response	1		6					

*Significant at $P < 0.05$ bolded; ^ψ Odds ratio; ^φ 95% Confidence Interval; ^θ Undefined

4.13 Independent predictors of IUCD use among the respondents

Multivariate analysis was performed to identify independent predictor(s) of use of IUCD as a family planning method among the respondents attending MCH/FP clinic in six health facilities in Embu County. Eleven factors associated with use of IUCD as a family planning method at $P < 0.05$ during bivariate analysis were considered for multivariate analysis. They include; (1) age in years, (2) marital status, (3) parity (4) duration of using family planning method in years (5) combination of specific family planning methods previously used, (6) offered IEC materials on FP methods during counseling (7), knowledge of someone who uses IUCD as a family planning method, (8) perception that IUCD protects against sexually transmitted infections, (9) effectiveness of IUCD, (10) understanding the mechanism of the IUCD in preventing pregnancy, and (11) understanding that IUCD can be used by a lactating woman. Upon fitting the factors using binary logistic regression and specifying ‘backward conditional’ method with removal at $P < 0.05$, seven iterations were performed. The first iteration yielded the estimates as shown by the full model (Table 4.11).

The predictors that showed significant ($P < 0.05$), influence on use of the IUCD included combination of more than two specific family planning methods previously used, knowledge of effectiveness of the IUCD, understanding the mechanism of the IUCD in preventing pregnancy and knowledge that the IUCD can be used by a lactating mother. Variables such as age, marital status, parity, provision of IEC materials on family planning and knowledge that IUCD does not protect against sexually transmitted infections showed not to have any influence on use of the IUCD (Table 4.13).

Table 4.13: Ever using IUCD as a Family Planning method in relation to different factors (Full model)

Variables	AOR ^ψ	95% CI ^φ		p value*
		Lower	Upper	
Age in years				
<=20	Reference			
31-40	0.93	0.23	3.71	0.918
>40	4.64	0.45	48.11	0.198
Marital status				
Single	Reference			
Married	1.78	0.14	22.78	0.656
Widow/divorced/separated	0.86	<0.01	209.06	0.957
Parity				
None	UD ^θ	UD ^θ	UD ^θ	0.999
1 – 2	Reference			
3 – 4	1.92	0.38	9.65	0.43
>4	1.73	0.21	14.52	0.612
Duration of using Family Planning method in years				
<1	1.14	0.24	5.41	0.869
1-2	Reference			
3-4	2.41	0.47	12.33	0.292
>5	0.65	0.14	2.95	0.575
Combination of specific Family Planning methods previously used				
None	Reference			
1	2.77	0.62	12.28	0.181
2	8.33	1.63	42.47	0.011*
>2	248.46	5.18	11917.2	0.005*
Offered IEC materials on FP methods during counseling				
Yes	Reference			
No	3.06	0.53	17.78	0.214
Knowledge of someone who uses IUCD as an FP method				
Yes	0.8	0.27	2.43	0.7
No	Reference			
IUCD protect against Sexually Transmitted Infections				
Yes	0.21	0.01	7.49	0.394
No	Reference			
Not sure	1.32	0.28	6.22	0.724
Effectiveness of IUCD				
Very effective	Reference			
Effective	0.22	0.06	0.74	0.015*
Not effective	0.04	<0.01	0.44	0.009*
Not sure	0.74	0.12	4.38	0.736
Understand the mechanism of the IUCD in preventing pregnancy				
Yes	5.77	1.64	20.28	0.006*
No	Reference			
IUCD can be used by a lactating woman				
Yes	10.86	2.32	50.82	0.002*
No	Reference			

*Significant at $P < 0.05$ bolded; [¶] Adjusted Odds ratio; [®] 95% Confidence Interval; [°] Undefined

Four factors were retained in the final analysis: (1) combination of specific family planning methods previously used, (2) effectiveness of IUCD, (3) understanding the mechanism of the IUCD in preventing pregnancy, and (4) understanding that IUCD can be used by a lactating woman (Table 4.14).

Respondents over 40 years were statistically significantly associated with use of IUCD as a family planning method ($P=0.015$). A participant aged >40 years was 8.04 times more likely to have ever used IUCD as a Family Planning method compared to one aged ≤ 20 years.

High combination of specific family planning methods previously used was associated with use of IUCD. Previous use of more than 2 combinations of Family Planning methods was significantly associated with use of IUCD as a family planning method ($P=0.002$) compared to none. Similarly, previous use of 2 combinations of family planning methods contributed to use of IUCD as a family planning method ($P=0.004$).

Effectiveness of IUCD contributed to increased use of IUCD as a family planning method. A respondent who indicated that use of IUCD is effective ((less than 5 pregnancy in 100 women) was 76% less likely to have used IUCD as a family planning method ($P=0.013$) compared to one who indicated that use of IUCD is very effective (less than 1 pregnancy in 100 women). A respondent who indicated that use of IUCD is not effective was 95% less likely to have used IUCD as a family planning method ($P=0.008$) compared to a respondent who indicated that the IUCD is very effective.

Respondents who understood how the IUCD prevents pregnancy were five times more likely to use IUCD as a family planning method ($P=0.003$). Respondents who also understood that the IUCD can be used by a lactating woman were also more likely to use the IUCD as a family planning method ($P=0.001$).

Table 4.14: Predictors of ever using IUCD as a Family planning method (Reduced model)

Variables	AOR ^ψ	95% CI ^φ		P value*
		Lower	Upper	
Age in years				
<=20	Reference			
31-40	1.13	0.4	3.2	0.821
>40	8.04	1.5	43.07	0.015
Combination of specific Family Planning methods previously used				
None	Reference			
1	3.03	0.76	12.1	0.118
2	9.2	2	42.26	0.004
>2	105.47	5.9	1885.94	0.002
Perceived effectiveness of IUCD				
Very effective	Reference			
Effective	0.24	0.08	0.74	0.013
Not effective	0.05	<0.01	0.46	0.008
Not sure	0.58	0.11	3.07	0.521
Understand the mechanism of the IUCD in preventing pregnancy				
Yes	5.21	1.73	15.66	0.003
No	Reference			
IUCD can be used by a lactating woman				
Yes	8.82	2.38	32.69	0.001
No	Reference			

*Significant at P<0.05 bolded; ^ψ Adjusted Odds ratio; ^φ 95% Confidence Interval

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1: Prevalence of Family Planning methods

Family planning method mix awareness was low among the clients and was more biased towards injectables (43%) and pills (19.5%). The clients were able to mention at least one method of family planning and would mention more methods if prompted. Service providers were aware of all the different methods of family planning. The use of IUCD among the clients was much lower than the use by the service providers. The service providers using the IUCD were slightly more than double the number of clients using the IUCD. Clients were more biased towards short acting methods of family planning such as pills and injectables while service providers were using long acting methods of family planning. The findings are similar to the trends that have been documented in the national demographic survey conducted (Macro, 2010).

Narrowing down to the IUCD, spontaneous knowledge of IUCD among the clients was at 79%. These findings are similar to those of the exploratory study conducted in Tanzania (Ruminjo, 2002) that indicated spontaneous knowledge of IUCD was at 80%. While taking into account the guiding principles of voluntarism and informed choice (USAID 2006), the family planning method mix was still poor. In this study, there was a slight change in uptake of IUCD compared to the national data which is at 2%. The IUCD was still ranked third in uptake after the pills and injectables which reflect a similar trend as was noted in the results of (Macro, 2010).

5.2: Factors contributing to IUCD uptake among respondents

IUCD delivery and uptake is mostly influenced by the setting, (socioeconomic and infrastructure conditions that influence access to services) and program (shared commitment to the IUCD at policy, provider and facility level, resource allocation for training, information, education and marketing). In many African countries, the simple ratio of providers to women is so low hence the question of easy access. In addition, there are other competing issues that affect provider motivation. Looking at the time and caseload pressure, the temptation may exist to suggest the simpler injectables or pill (Macro, 2010).

Respondents who were married were associated with increased level of use of IUCD compared to those who were single. Some factors that had a positive impact towards increasing the use of IUCD are having previously used family planning method for more than five years ($p=0.007$) or previous use of more than two methods of family planning was significantly associated with use of IUCD ($p=0.002$). Respondents who had delivered four or more children were more likely to use IUCD ($p=0.001$). Understanding how the IUCD prevents a woman from getting pregnant was also associated with increased level of use of IUCD ($p=0.001$). Other factors that contributed to uptake of the IUCD is having knowledge of someone who had previously used the method ($p<0.001$) and understanding that it can be used by a lactating woman because it non-hormonal therefore it does not interfere with milk production and what side effects to expect because some women may experience a change in menstrual bleeding patterns making it more prolonged and heavy or irregular especially in the first three to six months ($p<0.001$). Respondents over 40 years were statistically significantly associated with use of IUCD as a family planning method ($P=0.015$). A participant aged >40 years was 8.04 times more likely to have ever used IUCD as a Family Planning method compared to one aged <20 years. The results support the findings from a comparative study that was conducted in Kenya (MOH, 2008), where uptake of IUCD is influenced by a number of

factors that include age, marital status and parity. The IUCD is seen to be a method most appropriate for older married women who are likely to have at least one child.

5.3: Factors hindering IUCD uptake

Service providers were aware of the various methods of family planning but were not able to give comprehensible information to the clients hence a gap on the client's awareness and knowledge on family planning. Only 39% of the service providers were certain the IUCD is 99% effective (one pregnancy per 100 women) and yet 83% of the service providers had received general family planning training with 89% being trained on IUCD insertion. This supports evidence provided that one of the medical barriers to access to services is provider bias where the providers often impose their own barriers either they are unaware of evidence-based guidelines or they misinterpret or even ignore them when they contradict established understanding, practices, or beliefs (Stanback, 2007). The same applies to many African countries where the ratio of service providers to women is low and there is also the distraction of competing burdens that can affect provider motivation (Pollack, 2006).

Some of the misconceptions that were noted were: 13.8% of the respondents believed that you could conceive while using the IUCD, 9.1% said it can disappear in the body, 6.1% mentioned that their partners would feel the strings during sexual intercourse and 2.7% said that the IUCD predisposes one to get infections such as pelvic inflammatory disease. The findings are similar to previous research conducted in Tanzania (Ruminjo, 2002). Provision of IEC materials during counseling did not increase uptake of IUCD as a method of Family planning. These results are also supported by findings that at the individual level, potential IUCD users may be influenced by their level of knowledge of the method, its risks and benefits, and the acceptability of family planning within their community (D'Arcangues, 2007).

5.4 Conclusions

- The prevalence of IUCD among clients was 8.8% and 22% among the service providers
- Prevalence of other family planning methods among clients and service providers was:
 - Clients: injectables (43.4%), pills (19.5%), implants (8.8%), LAM (2.7%), male condom and BTL (1.3%) and NFP (0.7%)
 - Service providers: BTL (17%) and injectables (6%)
- Only 3.8% of the clients were accompanied to the family planning clinic by their partners.
- Factors that contributed to increased uptake of IUCD were:
 - Women over 30 years of age
 - Women who had three or more children
 - Understanding how the IUCD works to prevent pregnancy
 - Knowledge of someone who had used the IUCD
 - Previous use of a family planning method for more than five years
 - Previously use of two or more family planning methods
- Factors that hindered uptake were lack of knowledge on:
 - Effectiveness of the IUCD
 - The IUCD does not protect against STIs
- Other factors that did not have any significance towards use or non-use of the IUCD as a family planning method included cost for services, sources of information be it one or multiple sources and partners accompanying them to the facility and level of education.

5.5 Recommendations

- There is need to continue with advocacy efforts on IUCD as one of the long acting methods of family planning
- The service providers knowledge and skills on counselling needs to be strengthened so that they are able to provide comprehensible information not just about the IUCD but on all methods of family planning and also to increase family planning method mix
- There is need to promote use of “champions”, persons already using the IUCD as a family planning method who can speak about it within the community to demystify the myths and misconceptions about the IUCD.
- More studies need to be done to ascertain whether provision of IEC materials is adequate to increase uptake of family planning methods.
- There is need to look for innovative ways to increase male awareness of family planning and sensitization amongst them like utilizing workplace programs, chief barazas and other male oriented gatherings.
- There is need to encourage the facilities to link with the community health workers who would assist the service providers to provide FP messages within the community

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APPENDICES

Appendix 1: National ethics review committee clearance letter



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KEMRI/RES/7/3/1

6 MAY 2009

TO: Ms. JOYGRACE MUTHONI (PRINCIPAL INVESTIGATOR)

THROUGH: DR. Y. KOMBE,
THE DIRECTOR, CPHR,
NAIROBI

*Forwarded
7/5/09*

RE: SSC PROTOCOL No. 1550 (*REVISED*): MPH RESEARCH PROPOSAL ON
"PREVALENCE OF IUCD USE AMONG FAMILY PLANNING CLIENTS
ATTENDING SELECTED SITES IN EMBU DISTRICT"

Dear Madam,

Make reference to your letter dated 30th April 2009.

We acknowledge receipt of the revised English ICD and the Kiswahili translation of the same.

The Committee is satisfied with your response to the issues raised at the meeting of 14th April 2009. The study is hereby granted approval for implementation effective this **6th day of May 2009**, for a period of twelve (12) months.

Please note that authorization to conduct this study will automatically expire on **Tuesday, 5th May 2010**. If you plan to continue with data collection or analysis beyond this date, please submit an application for continuing approval to the ERC Secretariat by **Thursday, 25th March 2010**.

You are required to submit any amendments to this protocol and other information pertinent to human participation in this study to the SSC and ERC prior to initiation. You may embark on the study.

Respectfully,

ROTki-hungu

R. C. KITHINJI,
FOR: SECRETARY,
KEMRI/NATIONAL ETHICS REVIEW COMMITTEE

Appendix 2: Informed consent form

My name is Joygrace Muthoni a postgraduate student, from Jomo Kenyatta University of Agriculture and Technology, Institute of Tropical Medicine and Infectious Diseases (ITROMID). I am carrying out research to determine the Prevalence of IUCD Use among Family Planning Clients Attending Selected Sites in Embu District. 225 study respondents will be selected randomly from clients seeking Family Planning Services from six health centers. The study respondents will be of reproductive age and over 18 years of age.

You will be taken through a questionnaire for approximately 20-30 minutes to get feedback from you with regards to Family planning and specifically the IUCD. I will be writing on this form which does not have your name on it. Some of the questions may be of a personal nature and may make you feel uncomfortable. Participation in this study is voluntary. You may refuse to answer any question, and you may choose to stop the interview at any time. Refusing to participate will not affect your or your family's access to services at this health centre or any other centre.

The benefit is that you will contribute to the good of your community. What you say is important and valuable, and will help the health authorities to plan better services with regards to IUCDs and Family Planning services. I will keep the information confidential. This form will be kept under lock and key. At the end of the study, the results of all the answers will be compiled together. You will not receive money or reward of any kind if you agree to be interviewed.

As part of the monitoring program, someone may ask to talk with you again so I will request you to provide me with some personal information which will be filled in a different form so as to be able to contact you in future if need be. If an interview is requested, you have the option of accepting the interview or declining the interview.

Do you have any questions?

Yes ____ No ____

If yes, note the questions

If you have any concern, contact Joygrace Muthoni on 0720-702-609 or

The Secretary, KEMRI/National Ethics Review Committee on 020-2722541/2713349

Respondents Statement

I have read or have been read to the above considerations regarding my participation. I have been given a chance to ask any questions I may have and my questions have been answered to my satisfaction. I agree to participate in this study as a volunteer. I agree to allow someone to contact me again if need be to request for another interview.

Signature of Respondent

Date

I, the interviewer, have explained to the volunteer in a language she or he understands the procedures to be followed in this study, and the risks and benefits involved.

Signature of Interviewer

Date

Appendix 3: Cheti cha kutoa idhini

Kwa majina naitwa Joygrace Muthoni, mwanafunzi kutoka Chuo Kikuu cha Jomo Kenyatta University of Agriculture and Technology, Institute of Tropical Medicine and Infectious Diseases (ITROMID.) Nafanya uchunguzi wa kutambulisha asilimia ngapi ya wanaohudhuria kliniki ya kupanga uzazi wanafahamu kitanzi/IUCD na wametumia ama wanaitumia. Uchunguzi utafanywa katika wilaya ya Embu na itahusisha zahanati sita zinazotoa huduma za kupanga uzazi kwa wakaaji wake. Watu miambili ishirini na tano watahojiwa kutoka zahanati za kiserikari sita zinazotoa huduma ya kupanga uzazi za kiserikari. Watakaohojiwa watakuwa wametimu miaka kumi na nane.

Ningependa tuwe na kikao kwa muda kati ya dakika ishirini na nusu saa. Nitakuhoji kuhusu upangaji uzazi nikilenga njia ya kitanzi/IUCD. Chochote utakachoniambia nitaandika kwenye fomu hii ambayo haina jina lako. Maswali mengine utakayoulizwa yatakuwa ya kibinafsi na yanaweza kuzua wasiwasi. Kushiriki kwako katika utafiti huu ni kwa hiari yako. Unakubalishwa kukataa kujibu au kusimamisha katika majadiliano. Utafiti huu hautaathiri uwezo wako wa kupata huduma katika kituo hiki cha afya.

Faida ni kuwa kwa kushiriki katika utafiti huu utachangia katika kuendeleza jamii. Kuchangia kwako ni kwa muhimu na dhamani na utasaidia wahudumu wa afya kupanga huduma bora zaidi za afya kuhusu kupanga uzazi. Utakayo niambia yatakuwa siri na nakuhakikishia kuwa yatatumiwa kwa madhumuni ya utafiti huu. Baada ya mahojiano haya majibu yako na ya wengine yatawekwa pamoja. Hautapatiwa pesa au zawadi yoyote ukikubali ama ukikataa kuhojiwa.

Ili kusaidia kuendeleza huu uchunguzi, inaweza hitajika uhojiwa tena na nitachukua habari inayokuhusu ili niweze kuwasiliana nawe tena kama itahitajika. Una uhuru wa kukubali au kukataa kuhojiwa.

Je, una maswali?

Ndio_____ La_____

(Andika maswali ambayo muhusika atauliza)

Kama una shaka ama swali lingine tafadhali wasiliana na Joygrace Muthoni kwa nambari 0720-702-609 ama,

The Secretary, KEMRI/National Ethics Review Committee on 020-2722541/2713349

Zulio la Mshiriki

Nimesoma/nimesomewa kuhusu masharti ya kushiriki kwangu. Nimepewa nafasi ya kuuliza maswali ambayo yamejibiwa kikamilifu. Nakubali kushiriki katika utafiti huu kwa hiari na pia kukiwa na haja ya kushiriki tena katika mahojiano mengine wakati ujao.

Sahihi ya Mshiriki

Date

Appendix 4: Facility information

Questionnaire No.....

FACILITY INFORMATION

Facility Identification

Embu Provincial General Hospital – 1

Runyenjes Sub-District Hospital - 2

Karurumo Rural Health Training Centre – 3

Kibugu Health Centre – 4

Kianjokoma Health Centre – 5

Nembure Health Centre - 6

Name of Health Facility (Use Facility Identification Number): _____

Name of Interviewer: _____

Date of Interview: _____ (Day/Month/Year)

Time Interview Started: _____ (Use 24 Hour Clock)

Time Interview Ended: _____ (Use 24 Hour Clock)

Supervisors Name:

Signature:

Date:

Appendix 5: Client questionnaire

DEMOGRAPHIC DETAILS OF THE RESPONDENT

TAARIFA YA KIBINAFSI

(Instructions: Tick appropriate box or fill in as required)

Q1. Gender

Jinsia

Male/Mwanaume) Female/Mwanamke

Q2. Age

Umri

< 20yrs 21-30yrs 31-40yrs 41-50yrs 50years +

Q3. Marital status

Hali ya ndoa

Single/Kapera Married/Olewa Widow/Mjane Divorced/Mtaliki

Others/Mengineyo

Q4. Highest educational level completed

Ni kiwango gani cha juu zaidi umehitimu katika masomo

Primary/ Shule ya msingi Secondary/ Shule ya sekondari

College/University/Chuo kikuu

Q5. Occupation

Kazi/Amali

Self-employed/ Kujiajiri Employed/ Kuajiriwa Businessperson/ Mwana
biashara Others/ kazi ingine

Q6.a) Please tell me how many babies you have given birth to?

Je, umezaa watoto wangapi?

Q6.b) How old are your children?(Fill in the table below)

Je, watoto ambao umezaa wako na miaka ngapi kila mmoja?(Jaza jedwali lifuatalo)

Child/Mtoto	Age/Umri	Child/Mtoto	Age/Umri
1st born		4th born	
2nd born		5th born	
3rd born		6th born	

KNOWLEDGE, AWARENESS AND USE OF FP METHODS

MAARIFA, UHAMASISHA NA MATUMIZI YA NJIA ZA KUPANGA UZAZI

7. a) What Family Planning methods are you aware of? (Don't probe. Tick in the appropriate row)

Je, ni njia gani za kupanga uzazi unazozijua? (weka alama kwa sehemu inayostahili)

FP METHOD AINA ZA KUPANGA UZAZI	Spontaneous/ Anataja bila kusita	Prompted/ Anataja na usaidizi
None/Hatumii njia yeyote		

FP METHOD AINA ZA KUPANGA UZAZI	Spontaneous/ Anataja bila kusita	Prompted/ Anataja na usaidizi
Pills/Tembe		
IUCD/Kitanzi chenye madini ya shaba		
Injectables/Sindano		
Implants/ Kipandikizi		
Natural Family Planning/Njia ya kienyeji		
Withdrawal/Azili		
Rhythm counting of days Mpangilio wa tarkimu ya kalenda		
Tubal ligation/vasectomy Kufunga kizazi wanawake /Vasektomi		
Diaphragm with Spermicide		

FP METHOD AINA ZA KUPANGA UZAZI	Spontaneous/ Anataja bila kusita	Prompted/ Anataja na usaidizi
Kiwambo chenya dawa ya povu na jeli		
Condom(Male or female) Kondomu(ya kiume ama ya kike)		
Lactational Amenorrhea Method (LAM) Njia ya kunyonyesha		
Other (specify) Zinginezo(Fafanua)		

7. b) Which FP method are you currently using?

Je, ni njia gani unayotumia kwa sasa kupanga uzazi?

8. How long have you used the Family Planning method?

Je, umeitumia kwa muda gani?

<1yr 1-2yrs 3-4yrs >5yrs

9. How old were you when you started using Family Planning?

Ulikuwa na miaka mingapi ulipoanza kutumia njia ya kupanga uzazi?

<20 years 21-30 years 31-40 years

10. a) Which other FP method/s have you used previously? List

Je, ni njia zingine gani za kupanga uzazi ambazo umetumia hapo awali?

10. b) What was the reason for the change of FP method?

Je, sababu ya kubadilisha njia ya kupanga uzazi ilikuwa ipi?

11.a) Do you pay for FP services?

Je, unalipa kupata huduma za kupanga uzazi?

Yes/Ndio No/La

b) If yes, how much do you pay?

Kama unalipa, inakugharimu pesa kiasi gani?

<100 Ksh 100Ksh 200 Ksh 300Ksh >400Ksh

INFORMATION ON FAMILY PLANNING

HABARI KUHUSU KUPANGA UZAZI

12. What sources of information on Family Planning are available/ have you encountered? List

Je, unaweza taja asili za maelezo kuhusu kupanga uzazi unazo fahamu?

13. a) Are you offered IEC (magazines, newsletters, brochures, etc) materials on Family Planning methods during counseling?

Je, unapewa kijitabu, jarida ama karatasi kuhusu kupanga uzazi wakati wa mashauriano?

Yes/Ndio

No/La

b) If yes, which ones?

Ikiwa unapewa, taja aina gani.

AWARENESS AND USE OF INTRAUTERINE CONTRACEPTIVE DEVICE (IUCD)

UHAMASISHI NA MATUMIZI YA KITANZI

14. a) Have you heard of Intrauterine Contraceptive Device (IUCD)?

Umewahi kusikia kuhusu kitanzi chenye madini ya shaba?

Yes/Ndio

No/La

b) If yes, what have you heard about the IUCD

Kama ndio, taja yale umeyasikia kuhusu kitanzi chenye madini ya shaba

c) How did you get to hear about the IUCD?

Ulijua kuhusu kitanzi chenye madini ya shaba aje?

15. a) Have you used IUCD as an FP method?

Umewahi kutumia kitanzi chenya madini ya shaba kama njia ya kupanga uzazi?

Yes/Ndio

No/La

b) If no, what made you not to take up IUCD as an FP method?

Kama hujawahi, ni nini ilisababisha usichague kutumia kitanzi chenye madini ya shaba kama njia ya kupanga uzazi?

c) Do you know of someone who uses IUCD as an FP method?

Je, unafhamu mtu yeyote ametumia kitanzi chenye madini ya shaba?

Yes/Ndio

No/La

16. Can it be used by a lactating woman?

Je, Kitanzi chenye madini ya shaba inaweza tumiwa ma mama anayenyonyesha?

Yes/Ndio

No/La

Not Sure/Sina uhakika

17. Does it protect against Sexually Transmitted Infections?

Je, inazuia kupata magonjwa ya zinaa?

Yes/Ndio

No/La

Not Sure/Sifahamu

18. How effective do you think IUCD is?

Je, kitanzi chenye madini ya shaba kama njia ya kupanga uzazi ni bora kwa kiwango gani?

Very effective/Murwa Kabisa

Effective/Murwa

Not effective/Haizuii kupata mimba

Not sure/Sifahamu

19. a) Do you understand the mechanism of the IUCD in preventing pregnancy?

Je, unaelewa jinsi kitanzi chenye madini ya shaba huzuia mimba?

Yes/Ndio

No/La

b) If Yes, explain

Ikiwa unaelewa, fafaua.

20. What are some of the advantages of using IUCD that you know of?

Kuna manufaa gani ya kutumia kitanzi chenye madini ya shaba ambayo unajua?

21. What are some of the disadvantages of using IUCD that you know of?

Kuna madhara gani ya kutumia kitanzi chenye madini ya shaba ambayo unajua?

22. Did your partner accompany you during this visit to the clinic?

Je, mwenzi aliandamana na wewe ukija kliniki?

Yes/Ndio

No (Why not)

23. Do you have any comment to make on the uptake of IUCD?

Je, una maoni yoyote kuhusu matumizi ya kitanzi ?

Thank you for your time

Asante sana kwa kunipa muda wako

Appendix 6: Service providers questionnaire

DEMOGRAPHIC DETAILS OF THE RESPONDENT

TAARIFA YA KIBINAFSI

(Instructions: Tick appropriate box or fill in as required)

Q1. Gender

Jinsia

Male/Mwanaume) Female/Mwanamke

Q2. Age

Umri

< 20yrs 21-30yrs 31-40yrs 41-50yrs 50years +

Q3. Marital status

Hali ya ndoa

Single/Kapere Married/Olewa Widow/Mjane Divorced/Mtaliki

Others/Mengineo

Q4. Highest educational level completed

Ni kiwango gani cha juu zaidi umehitimu katika masomo

Primary/Shule ya msingi Secondary/Shule ya sekondari

College/University/ Chuo Kikuu

Q5. Service provider cadre

Kada ya muuguzi

Medical Officer Clinical Officer KRCHN EN/M EN

Q6.a) Please tell me how many babies have you delivered?

Je, umezaa watoto wangapi?

Q6.b) How old are your children?

Je, watoto ambao umezaa wako na miaka ngapi kila mmoja?

Child/Mtoto	Age/Umri	Child/Mtoto	Age/Umri
1st born		4th born	
2nd born		5th born	
3rd born		6th born	

FAMILY PLANNING BACKGROUND & COMMODITIES

VIFAA VYA KUPANGA UZAZI

Have you received Family Planning training?

Je, umepata masomo yanayohusiana na kupanga uzazi?

Yes/ Ndio

No/La

How long was the training?

Masomo hayo ilichukua muda gani?

<1 month/Chini ya mwezi moja

3 months/Miezi tatu

6 months/Miezi sita

> 6 months/Kupita miezi sita

What year were you trained?

Ulipata masomo hayo mwaka gani?

Which organization/institution conducted the training?

Ni shirika/taasisi gani lililowapatia hayo masomo?

MOH/ La serikali

NGO(specify)/ La kibinafsi

Other (Specify)/ Zinginezo

How is the supply of the following FP commodities at your facility?

Je, akiba ya njia za kupanga uzazi zifuatazo kwa zahanati yenu iko aje?

(1=continuous, 2=average, 3=erratic)

FP METHOD	RATE	FP METHOD	RATE
Pills/Tembe		d. Implants/Kipandikizi	
IUCD/Kitanzi chenya madini ya shaba		e. Diaphragm & foaming tablets/Kiwambo chenye dawa ya povu na jeli	
Injectables/ Sindano		f. Condom/ Kondomu	

How often do you request/order for FP commodities?

Je, mnaagiza dawa za kupanga uzazi baada ya muda gani?

- Weekly/Kila wiki
- Monthly/Kila mwezi
- Quarterly/ Mara moja kwa miezi tatu
- Annually/Mara moja kwa mwaka

What is the source of your FP commodities?

Je, shina ya hizi dawa ni gani?

AWARENESS AND USE OF INTRAUTERINE CONTRACEPTIVE DEVICE (IUCD)

UHAMASISHI NA MATUMIZI YA KITANZI

14. a) Have you heard of Intrauterine Contraceptive Device (IUCD)?

Umewahi kusikia kuhusu kitanzi chenye madini ya shaba?

Yes/Ndio

No/La

b) If yes, what have you heard about the IUCD?

Kama ndio, taja yale umeyasikia kuhusu kitanzi chenye madini ya shaba

15.a)Have you been trained on IUCD insertion?

Je, umepata mafunzo ya kuingiza kitanzi chenye madini ya shaba?

Yes/ Ndio

No/La

b)If Yes, how many IUCD on average do you insert in a Month?

Kama umepata masomo hayo, unaingiza vitanzi vingapi kwa mwenzi?

0

1-5

6-10

11-15

>15

16. a) Have you used IUCD as an FP method?

Umewahi kutumia kitanzi kama njia ya kupanga uzazi?

Yes/Ndio

No/La

b) If no, what makes you not to use IUCD as an FP method?

Kama hujawahi, ni nini inasababisha usitumie kitanzi kama njia ya kupanga uzazi?

17. Can it be used by a lactating woman?

Je, kitanzi inaweza kutumiwa na mama anayenyonyesha?

Yes No Not Sure

18. Does it protect against Sexually Transmitted Infections?

Je, inazuia kupata magonjwa ya zinaa?

Yes No Not Sure

19. How effective do you think IUCD is?

Je, kitanzi kama njia ya kupanga uzazi ni bora kwa kiwango gani?

Very effective/ Murwa kabisa

Effective/Murwa

Not effective/Haizuii kupata mimba

Not sure

20. a) Do you understand the mechanism of the IUCD in preventing pregnancy?

Je, unaelewa jinsi kitanzi chenye madini ya shaba huzuiza mimba?

Yes/Ndio No/La

b) If Yes, explain

Ikiwa unaelewa, fafanua

21. What are some of the advantages of using IUCD that you know of?

Kuna manufaa gani ya kutumia kitanzi chenye madini ya shaba ambayo unajua?

22. What are some of the disadvantages of using IUCD that you know of?

Kuna madhara gani ya kutumia kitanzi chenye madini ya shaba ambayo unajua?

23. Does your facility have adequate IUCD insertion kits?

Je, zahanati yenu ina ala za kutosha kutoa huduma ya vitanzi vyenye madini ya shaba?

Yes/Ndio No/La

24. How many IUCD insertion kits do you have at the facility?

Je, mna ala ngapi za kuweka vitanzi vyenye madini ya shaba

1

2

3

4

>5

KNOWLEDGE, AWARENESS AND USE OF FP METHODS

25 a) What other Family Planning methods are you aware of? (Don't probe. Tick in the appropriate row)

Je, ni njia gani za kupanga uzazi unazofahamu?

FP METHOD AINA ZA KUPANGA UZAZI	Spontaneous/ Anataja bila kusita	Prompted/ Anataja na usaidiza
Pills/Tembe		
IUCD/Kitanzi chenye madini ya shaba		
Injectables/Sindano		
Implants/Kipandikizi		
Natural Family Planning/Njia ya kienyeji		
Withdrawal/Azili		
Rhythm counting of days Mpangilio wa tarkimu ya kalenda		
Tubal ligation/vasectomy Kufunga kizazi wanawake/Vasektomi		
Diaphragm with spermicide		

FP METHOD AINA ZA KUPANGA UZAZI	Spontaneous/ Anataja bila kusita	Prompted/ Anataja na usaidiza
Kiwambo chenye dawa ya povu na jeli		
Condom (Male or female) Kondomu (ya kiume ama ya kike)		
Lactational Amenorrhea Method (LAM) Njia ya kunyonyesha		
Other (specify) Zinginezo (fafanua)		

b) Which FP method are you currently using?

Je, ni njia gani unayotumia kwa sasa kupanga uzazi?

26. How long have you used the method?

Je, umeitumia kwa muda gani?

<1yr 1-2yrs 3-4yrs >5yrs

27. How old were you when you started using Family Planning?

Ulikuwa na miaka mingapi ulipoanza kutumia njia ya kupanga uzazi?

<20 years 21-30 years 31-40 years

28. a) Which other FP method/s have you used previously? List

Je, ni njia zingine gani za kupanga uzazi ambazo umetumia hapo awali?

29. b) What was the reason for the change of Family Planning method?

Je, sababu ya kubadilisha njia ya kupanga uzazi ilikuwa ipi?

30. a) Do you pay for FP services?

Je, unalipa kupata huduma ya kupanga uzazi?

Yes/Ndio

No/La

b) If yes, how much do you pay?

Kama unalipa, inakugharimu pesa ngapi?

<100 Ksh 100Ksh 200 Ksh 300Ksh >400Ksh

INFORMATION ON FAMILY PLANNING

HABARI KUHUSU KUPANGA UZAZI

31. What sources of information on Family planning are available to the clients? List

Je, kuna asili gani za maelezo kuhusu kupanga uzazi katika zahanati?

32. a) Do you offer IEC (magazines, newsletters, brochures, etc) materials on Family Planning methods during counseling?

Je, wakati wa kushauriana unapatiana jarida ama karatasi zenye maelezo ya kupanga uzazi?

Yes/Ndio

No/La

b) If yes, which ones?

Ikiwa unapeana, taja aina gani

33. Do you have any comment to make on the uptake of IUCD?

Je, una maoni yoyote kuhusu matumizi ya kitanzi chenye madini ya shaba?

Thank you for your time

Asante sana kwa kunipa muda wako

Appendix 7: Respondent contact tracing

Client’s Code No

Names of the client (3).....

Telephone No.....Office.....

Social Name e.g. Mama Jane.....

Family Name.....

Next of kin/partner/friend Tel No (preferably mobile).....

Physical/ residence address.....

.....

.....

Place of work.....

Nearest school.....

Church.....

Shopping centre.....

Health facility.....

9. Division.....

10. Location.....

11. Sub location.....Assistant chief.....

12. Village.....Village elder.....