DETERMINANTS OF UTILIZATION OF EMERGENCY CONTRACEPTIVE PILLS AMONG FEMALE STUDENTS AT KENYA MEDICAL TRAINING COLLEGE, THIKA, KIAMBU COUNTY, KENYA

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DECLARATION

This thesis is my original work and has not been presented for any award or degree in any other university and all sources used have been acknowledged.

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DEDICATION

This study is dedicated to all my family members, particularly my husband Steve Njoroge for your love and support during these crucial moments of life.

My kids Joseph, Mwaura and Bilha for your understanding .May the Almighty God bless you.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABREVIATIONS

CS	**:**	Caesarean Section
EC	**:**	Emergency Contraception
ECP	**:**	Emergency Contraceptive Pills
ERC	**:**	Ethical Review Committee
HIV	**:**	Human Immune-Deficiency Virus
IUCDs	**:**	Intra-Uterine Contraceptive Devices
IUDs	**:**	Intrauterine Device
KDHS	**:**	Kenya Demographic And Health Survey
KII	**:**	Key Informant
KMTC	**:**	Kenya Medical Training College
LMICs	**:**	Low And Middle Income Countries
MMR	**:**	Maternal Mortality Ratio
PMTCT	**:**	Prevention of Maternal to Child Transmission of HIV

PMR : Perinatal Mortality Rate

SPSS : Statistical Package for Social Sciences

SSA : Sub-Saharan Africa

UoN-KNH : University of Nairobi – Kenyatta National Hospital

VF : Vesico-Vaginal Fistula

WHO : World Health Organization

OPERATIONAL DEFINITIONS

Abortion: Is the deliberate or spontaneous termination of pregnancy by removing a foetus or embryo before it can survive outside the uterus.

Emergency contraception's: A contraception methods that is used as an emergency procedure to prevent and avoid unwanted pregnancy after engaging in unprotected sex.

Emergency Contraceptive Pills: They are small tablets sold as an emergency contraceptive product or a high dose of a daily oral contraceptive pill; the pills consist of a combination of progestin and estrogens or progestin only.

Induced abortion: Is a purposive act of terminating pregnancy using medical procedures or medicines.

Knowledge: In the context of the study, it refers to awareness about ECP utilization, access and side effects.

Miscarriage: Is the spontaneous or unplanned expulsion of a foetus from the womb before it is able to survive independently.

Perceptions/Attitudes: Refers to opinions about the utilization of ECP that may act as catalyst towards use of ECP or work otherwise.

Utilization of Emergency Contraceptive Pills: Refers to proportion of female students who will have ever used ECPs within the last 12 months preceding the study.

Determinant :refers to a factor which decisively affects the nature of outcome of ECPs utilization.s

ABSTRACT

Background

Globally, there are about 210 million pregnancies each year. Approximately 80 million of these pregnancies are unintended, and one in every 10 of the pregnancies ends in an unsafe abortion. Despite increasing availability of emergency contraceptive pills both private and public health facilities and outlets, there is high rate of unintended pregnancies among adolescents and young women. Unintended pregnancy among students has high cost implication for students which include induced and unsafe abortion, reproductive health complications such fistula and attrition from college.

Objectives.

The main aim of the study is to determine factors (social demographic factors, knowledge, attitude and practice,) influencing utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus.

Methods

This was a cross-sectional descriptive study whereby it used mixed method approach. Proportionate sampling method was used to obtain a total number of 220 female students. Three key informants were purposively sampled based on their position, experience and understanding of emergency contraceptive pills use. A self-administered questionnaire was used to collect quantitative data from students while a key informant interview guide was used to collect qualitative data from key informants data was analysed using SPSS 20.0, bivariate logistic

regression analysis were used to analyse quantitative data while qualitative data was analysed thematically , themes coded and analysed with SPSS.The dependent variable was utilization of emergency contraceptive pills and the independent variables were knowledge, attitudes and practices with regard to the use of emergency contraceptive pills.

Results

The study findings showed that there is relatively higher usage of ECP than depicted in other studies. However, the number can still be regarded as low as indicated by unintended pregnancies among youthful students who are sexually active. The study findings further showed that the level of knowledge of ECP, time of first sexual intercourse, history of being pregnant and whether or not one had utilized ECP before were the major predictors of ECP utilization among female students of KMTC. Additionally, results indicated that the level of knowledge about ECP among female students was still low and probably with a lot of misinformation. Attitude was not found to be a significant predictor of ECP utilization

Conclusion:

Socio-demographic and knowledge have significant relationship between on utilization of ECP among female students at Kenya Medical and Training College. Hence the social-demographic and knowledge about utilization of ECP should be well be monitored by key institutions for effective service delivery.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The United Nations Fifth Millennium Development Goal (MDG5) aims at improving maternal health. Maternal mortality still remains a burden to the health care system especially developing world. According to Feyisso *et al.,* (2017b), unplanned pregnancies are responsible for over 50,000 million abortions globally. About 50% of these pregnancies are not planned for which 50% of the terminations occurred due to non-use of contraceptives (Lewandowski & Co-investigator 2013). This is a concern because most abortions are unsafe and linked to about 80,000 maternal deaths globally.

Emergency contraception (EC) refers to any device or drug used to prevent unwanted pregnancy after unprotected sexual intercourse, contraceptive failure or misuse (such as forgotten pills or condom accident), rape or coerced sex (Adeniji, Owonikoko & Tijani 2013). In other words, emergency contraception is a back-up birth control method that is used within 72 hours to 120 hours after unprotected coitus for the prevention of unintended pregnancy or in the event of a known contraceptive failure, such as a condom breaking. However, emergency contraception is not intended for use as a primary and regular contraceptive method although it should not be confused with medical abortion drugs – methotrexate – that terminates an already established pregnancy (Henry, 2004). Emergency Contraceptive Pills (ECPs) serve as Emergency Contraceptives (EC) which are readily available in pharmacies and health facilities (Liambila *et al.,* 2013).

Globally, emergency contraception adds an important option for assisting sexually active adolescents avoid unintended pregnancy. According to a study conducted by Demographic and

Health Surveys (DHS) in different global nations (Ghana, Kenya, Namibia, and Brazil), the proportion of currently pregnant women under the age of 20 years who reported that their pregnancies were mistimed or unwanted was 46%, 50%, 55% and 58% respectively. Generally, young people are not experienced in the use of contraception, and those who initiate a family planning method often lack the requisite skills or motivation to use it correctly and a consistent manner, Afri J Reprod Health (2010).

Globally, rates of emergency contraceptive use vary widely but are generally low, especially as reported from population-based surveys KDHS (2000). Demographic and Health Surveys in different nations from 2000 to today indicate that that fewer than 2% of youth aged 15 to 24 years have ever used emergency contraception in Armenia, Cambodia, Haiti, and Turkmenistan. In Africa, and specifically in Nigeria, among young women who had had previously had concealed abortions, 16% had used ECPsKDHS (2000).

Low and middle income countries (LMICs) bear the highest burden of abortions and unwanted pregnancies. Sub-Saharan Africa (SSA) accounts for the highest proportion of this burden. For instance, it accounts for about 500 maternal deaths for every 100,000 live births (Mumah, Kabiru & Mukiira 2014). This is in addition to millions of women who sustain chronic and at times irreversible health issues such as fertility, infertility, fistula and deformity (Miruts 2014). The East Africa region was ranked second with unintended pregnancies among young women after West Africa. Uganda leads the prevalence of teenage and youth pregnancies at 33% followed by Tanzania with 28% while Kenya reported 26% of the unwanted pregnancies (World Health Organizations [WHO] 2014). In 2015, Uganda reported 1,337,000 million unintended pregnancies; over 50% of these pregnancies were terminated (Sandra 2015).

In Kenya, a study by Mumah *et al.,* (2015) reported that over 40% of unwanted pregnancies are recorded annually; either as unwanted or mistimed. Of these, 14% are aborted with the help of unskilled persons. This accounts for 35% of maternal deaths in the country; higher that the 13% reported worldwide. Youths and students were reported to accounts for the largest proportion of these deaths (Kenya Demographic and Health Survey [KDHS] 2014). This has serious health and socio-economic implications especially on health of the women, and the well-being of their children.

Lack of awareness and knowledge on ECPs use contributes significantly to unwanted pregnancies among women from all economic levels (Adeniji, Owonikoko and Tijani, 2013). A study conducted in USA reported that only 11% of the women had the basic knowledge on ECP (Kavin *et al.,* 2014). A study among students in Nigeria showed that all respondents who had procured an abortion reported that they would have used the ECPs if they had prior knowledge about them (Adeniji *et al.,* 2013). In a college-based study in Cameroon, only 7.4% of the students reported use of ECPs, out of which, only 5% of the students knew the first dose could be taken within 72 hours (Miruts 2014).

Kenya Demographic Health Survey revealed that young people, especially tertiary institutions students, are exposed to risky sexual behaviours linked to being free of parental guidance, peers influence, and indulgent into alcohol and drug substances which provides incentives for risky behaviours (KDHS, 2014). This has contributed too many students procuring abortions, developing pregnancy complications or even stopping their studies due to unwanted pregnancies (Mumah *et al.,* 2015). Risky factors explaining this trend are not well document and understood

in the local context. Increasing utilization of ECPs provides an opportunity for reducing the number of unwanted pregnancies and induced abortions among the youths (Kabara 2013).

In an attempt to address reproductive health and rights, Kenya has developed legal frameworks including reproductive healthcare bill, 2014 which seeks to improve access to reproductive and sexual health services and uphold women rights to reproductive issues (Population Council Policy Brief 2010). As a result, there are spirited efforts to integrate modern contraceptives in formal reproductive and maternal health care services provided in most of the public health and private facilities including pharmacies and clinics (Liambila *et al.,* 2013). Despite these reforms, access to ECs including ECPs among adolescents and youths remains a challenge. For example, only 12% of health facilities actually provide the recommended comprehensive RH services to adolescents (Tumlinson *et al.,* 2016). Furthermore, many Kenyan societies are yet to accept the reality of adolescent pre-marital sexuality, particularly for young girls (Meyer, Gold, & Haggerty 2011). It is on this basis that this study seeks to examine the determinants of students' utilization of ECPs at Kenya Medical and Training College (KMTC), Thika, Kenya.

1.2 Statement of the Problem

The United Nations Fifth Millennium Development Goal (MDG5) aims at improving maternal health. Maternal mortality still remains a burden to the health care system especially developing world. It is documented that 529,000 girls and women die from pregnancy-related causes each year globally, of which 13% are due to unsafe abortions (WHO, 2011). In a study by Magandi (2013) it was observed that Kenya had the highest proportion of unintended child bearing. Unwanted pregnancies constitute a big challenge affecting millions of young women globally and nationally. About 15-30% maternal death due to unsafe abortion brought about by unwanted

pregnancy in young women, which demonstrate low utilization of ECPs. Despite increasing availability of ECPs in both private and public health facilities and other outlets, there is high rate of unintended pregnancies among adolescent and young women (Kabara 2013). This is linked to induced and unsafe abortions increasing reproductive health complications such as Fistula and attrition from college (Feyisso *et al.*, 2017a). In Kenya, the KDHS (2014) revealed that ECPs utilization rate was 4.6% among women aged 20-24 years. This utilization rate was low compared to sexually active one which was 5.5%.Thika Kenya Medical Training College is in Kiambu County which has a high youth population 223,074. Most of the female students in Thika KMTC are sexually active (70.4%). Despite being a medical college and located in a Level – five hospital there is low utilisation of contraceptives. The low utilisation of contraceptives leads to unwanted pregnancies which result to unsafe abortions. Further, about 30.7% of sexually active women aged 20-24 years were not using any contraceptives which increased the risk of unwanted pregnancies.

1.3 Research Justification

Although contraceptives utilisation is well documented for the general population, the situation in tertiary institution is little known. A study in a medical school would capture a near true picture for the general population. Lifestyle change, relocating from parents for study exposes the students to new lifestyle including indulgement in unprotected sex causing unintended pregnancy. Evidence suggests that, about 30.7% of sexually active women aged 20-24 years were not using any contraceptives which increased the risk of unwanted pregnancies.

The high degree of social freedom in tertiary institution allows students to engage in risky sexual activities. High sexual activities and low ECP utilization lead to serious health risk to include unwanted pregnancy, unsafe abortions and attrition from college.

Under - utilization of contraceptives poses a big challenge. Attitude, knowledge and practice on ECPs use are cited as a factor preventing proper utilization of ECP.

Against this background I recognise the need to explore ECP knowledge and practices among tertiary students in KMTC Thika

1.4 Research Questions

1. What are the social demographic characteristics associated with utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus?
2. To what extent do female students in Kenya Medical and Training College Thika Campus have knowledge on utilization of emergency contraceptives?
3. What is the influence of attitudes on utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus?
4. What is the utilization level of emergency contraceptives among female students at Kenya Medical and Training College?

1.5 Research Objectives

1.5.1 Main Objective

The main aim of the study is to determine factors (social demographic, knowledge, attitude and practices.) influencing utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus.

1.5.2 Specific Objectives

1. To examine the influence of socio-demographic factors that influence utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus.

2. To establish the knowledge with regard to utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus.

3. To access the attitudes about utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus.

4. To assess the utilization level of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus.

1.6 Study Hypotheses

1. $\mathbf{H_{01}}$: There is no significant relationship between socio-demographic characteristics and utilization of ECP among female students at Kenya Medical and Training College, Thika Campus.

2. **H_{02}**: There is no significant relationship between knowledge about ECP and utilization of ECP among female students at Kenya Medical and Training College, Thika Campus.

3. **H_{03}**: There is no significant relationship between attitudes and utilization of ECP among female students at Kenya Medical and Training College, Thika Campus.

1.7 Significance of the Study

This study may contribute to the body of knowledge in reproductive health, hence identifying gaps in reproductive health services. Moreover, the study findings may be useful to policymakers in developing appropriate empirical evidence-based strategies to prevent unintended pregnancies towards knowledge enhancing and attitude changing activities about the utilization of emergency contraceptives. Also this study will contribute to more research that maybe done on reproductive health.

1.8 Scope of the Study

The study was carried out among female students in Kenya Medical and Training College Thika campus only. In addition, the study examined the following variables (namely; socio-demographic factors, knowledge, attitudes, and practices) with regard to utilization of emergency contraceptives.

CHAPTER TWO: LITERATURE REVIEW

2.1 Uutilization of Emergency Contraceptives

Emergency contraceptives (EC) are effective methods of reducing abortions and the negative maternal health consequences associated with unplanned pregnancies (Adeniji, *et al.,* 2013). To be highly effectively, it is recommended that ECPs should to be taken within the first 24 hours of having unprotected sex, however, they are still effective when taken within 72 hours (Wendwosen *et al.,* 2014). There are two types of the pills - progestin only or combined pill. The ECPs contains oestrogen and progesterone hormones to block or prevent fertilization of the eggs (Wendwosen *et al.,* 2014.). These hormones help to delay release of an egg or ovulation process, meaning that, if the implantation of a fertilized egg occurs, ECPs cannot be effective. Some of the ECPs commonly used include Generic levonorgestrel such as Next Choice, Onde Dose, My Way and Plan B One-Step. The pills are reported to have efficiency of over 90% (Tilahun *et al.,* 2010).

Contraceptives have the potential to prevent induced abortions and maternal deaths associated with unwanted pregnancies (Liambila *et al.,* 2013). ECPs drastically reduce the burden of disease and cost associated with unintended pregnancies. For example, in Ethiopia, unsafe abortions were reported to account for approximately 60% of all gynaecological admissions and 30% of all obstetric admissions (Adinew 2013). This makes ECPs a primary Family Planning (FP) method for prevention of unwanted conceptions (Adinew 2013). In Uganda, out of 69.3% of the pregnant students who procured an abortion, only 14.5% of them had ever used a contraceptive (Adeniji *et al.,* 2013). Lack of proper knowledge on ECP use has been suggested to contribute to low use of the pills among the students (Tilahun *et al.,* 2010).

Emergency Contraceptive Pills (ECPs) have been proven to be effective in reducing a woman's chance of becoming pregnant when taken within three days (72 hours), and to some extent, five days (120 hours). The efficacy of the pills is estimated to be over 80% when properly used within 72 hours after sexual contact (Tennyson 2014). However, the efficacy can reduce to less than 50% depending on knowledge of the user. Their efficacy reaches 99% when combined with intra-uterine contraceptive devices (IUCDs) (Wendwosen *et al.,* 2014). The efficacy of ECP has been said to increase with increase in knowledge and awareness on use (Khatoon *et al.,* 2012).

Studies by Bashir (2015) and Tilahun *et al.,* (2010) have linked ECPs with side effects which have been reported to limit their use. These include delay in conception; bleeding, menstrual cramps and fluctuation, infertility, irritation of the private parts and abdominal pain (Bashir 2015). Other serious side effects and risks of ECPs reported are blood clot, strokes and heart attacks (Tumlinson *et al.,* 2016.). However, the benefits of ECPs prevail over the side effects (Parker 2005). ECPs can allow a student to remain sexually active, finish education and become economically productive by applying the skills learnt.

A study by Miruts (2014) showed that in higher education, students easily form new friendships and alliances including sexual and romantic relationships both random and planned. This increases the risk of unplanned conceptions which is a global public health issue. The pregnancies have a serious detrimental impact on school attendance and student performance. Many students have dropped out of school due to these unwanted pregnancies which affect their educational priorities and future career prospects. To remain in school, many students use ECPs to prevent conceptions (Bwire 2014). Failure to or poor use of ECPs have resulted into increased illegal pregnancy terminations associated with high mortality, infertility and related

complications such as fistula (Liambila *et al.,* 2013). The cost on unplanned pregnancies has been termed as an incentive for use of ECPs among students (Tumlinson *et al.,* 2016.)

2.2 Social Demographic Factors and their influence on use of ECPs

Socio-demographic characteristics have been reported to play an important role in influencing use of contraceptives such as ECPs. In a study by Adinew (2013), induced abortion was associated with women aged less than 30 years. Global studies affirm higher prevalence of sexual activities such as unprotected sex among youthful women (WHO 2014). Young women aged below 20 years have also been cited to possess lower knowledge on use of ECPs when compared to the older counter parts. The younger women are said to have limited experiences with health, and reproductive issues compare to older women (Tumlinson *et al.,* 2016). According to KDHS (2014), ECPs use increased with the age of the woman. Students aged more than 20 years had a 3.48 times more likelihood to use ECPs than those aged 15- 19 years (Bwire 2014),

Education is useful for empowering the decision-making capability of an individual (Tennyson 2014). It facilitates women to make informed decisions on family planning options available and demystify myths and beliefs which impede use of ECPs and other contraceptives (Singh *et al.,* 2018). Educated women including students are associated with a higher likelihood to obtain and understand reproductive and sexual health information and resources than the less educated particularly those who cannot read and/ or write (Meyer *et al.,* 2011). A positive relationship between increase in level of education and use of emergency pills among women. This indicated

that empowering women with education can result in positive improvement in their access to reproductive and sexual health. (Lewandowski 2013)

A study by Tilahun *et al.,* (2010) revealed that married women were more likely to demand and use contraceptives than their counterparts who were not married due to societal expectations and moral values practiced in a society such as prohibition of pre-marital sex. Married women have greater freedom and courage to seek EC options owing to a more receptive and non-judgemental society compared to the single and unmarried girls. According to Miruts (2014) and Tennyson (2014), single and unmarried women experience discomfort and lack of confidence when procuring ECPs due to society values and expectations imposed on sexual services. There is a perception that ECPs and other ECs promote promiscuity which creates psychological barrier to use among the young people (Mir & Malik 2014). Dispelling this perception can create a positive incentive for demand and use of ECPs hence reducing burden of unwanted pregnancies and related complications.

2.3 Knowledge on Utilization of Emergency Contraceptives

Knowledge is an important construct of service utilization in a health care delivery process. Knowledge of ECPs varies considerably among women (Tilahun *et al.,* 2010). Lack of proper knowledge and awareness on the contraceptives and use has been associated with increase in unwanted pregnancies even after use. Perceiving the cost of unwanted pregnancy has been shown to motivate women to use contraceptives (Bashir 2015). A significant proportion of unwanted pregnancies are linked to ignorance and lack of proper knowledge of ECPs (Kavin *et*

al., 2014). Knowledge of ECPs correct use has been associated with increase with utilization (Adeniji *et al.,* 2013).

According to Khatoon *et al.,* (2012), 53.9% of University students had their first sex at the age of less than 18 years out of which 49.5% conceived during their first sexual intercourse encounter. 43.8% of these students had dropped out of the school due to pregnancy. In Nigeria, a study by Wendwosen *et al.,* (2014) showed that 53.3% of the students knew about at least one contraceptive method but only 22.4% knew two or more modern methods. This differed from a study conducted in Ethiopia in which 85.6% of the students were reported to be well knowledgeable on ECs (Bashir 2015). Despite awareness on availability of ECPs among students, their correct use is reported to be poor. According to Kabara (2013), most of the students had obtained their information from leaflets, radio, and TV and health facilities. A significant proportion of the students also received information from their colleges and other peers which may be unreliable and inaccurate. Variation in source of sexual information was associated with variations in knowledge on ECP use (Kabara 2013).

2.4 Attitudes about Utilization of Emergency Contraceptives

According to a study by Khatoon *et al.,* (2012) adolescent and young women associated ECPs with failure and causing infertility. These women reported higher probability of non-use compared to their counterparts. Women who reported benefits as a result of ECPs utilization demonstrated higher chances of seeking, demanding and using the ECPs. This is because negative perceptions create demotivation for use even when the risk is immaterial. Unprotected sex is common among students and youths who engage in alcoholism and drug substance abuse

(Liambila *et al.,* 2013). As a result, young women rely on ECPs to prevent unwanted pregnancies. However, use of ECs does not reduce the risk of communicable diseases such as HIV and Hepatitis which is sexually transmitted which risks them to transmission of the HIV (Tumlinson *et al.,* 2016.). Socially, ECPs have been perceived negatively (Kavin *et al.,* 2014). ECPs are perceived to encourage promiscuity, cause stigma, and protrude stomach (even when they are not pregnant) and death.

Khatoon *et al.,* (2012) reported that students feared the failure of ECPs when consumed. In addition, fear of being judged by providers was also cited to deter their willingness to source contraceptives and family planning options from the clinic. As a result, unintended pregnancies occur because they may not use reliable contraceptive methods or they may resort to an abortion due to practices facing ECPs (Tennyson 2014). A study conducted among university students showed that many students find it difficult to go to a facility or chemist after unprotected intercourse, since they perceived the visit would indicate that unprotected intercourse had occurred. (Kabara 2013)

Perceptions and attitudes are also controlled by religion values and practices. For instance, a study by Miruts (2014) reported that religion, such as Catholics and Muslims, can create barriers to acceptance of modern contraceptives in Africa. Some religious values and practices such as those perceiving contraceptives to promote promiscuity do not permit the use of modern contraceptives even in areas where such methods are available (Meyer *et al.,* 2011). Securing support and encouragement from religious leaders increase willingness and demand for the contraceptives (Tennyson 2014). Societal norms and values which value polygamy and child bearing may bar use of ECPs even when the risk and negative outcomes outweigh the benefits

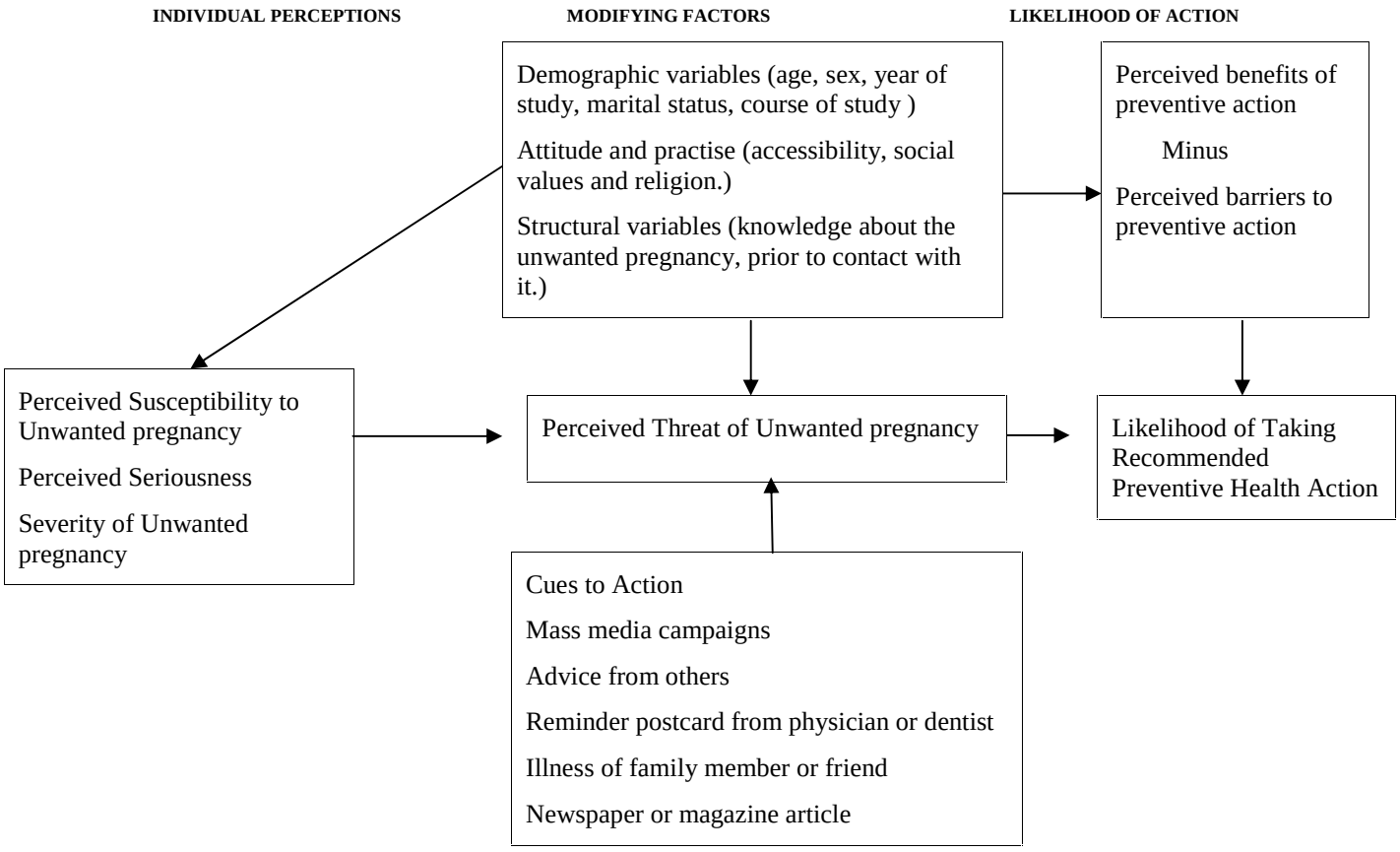
(Maharaj and Rogan 2011). These norms and values may inculcate across the community which discourages young women from these cultures from using ECPs. Although evidence indicates the need for improving education level to improve use of ECs, the prevalence of unwanted pregnancies among youths, especially students in higher learning institutions is alarming (Adeniji *et al.,* 2013).

THEORETICAL FRAMEWORK

The framework used in this study is: Health Belief Model: for behaviour change to explain the use of health service. It was developed by a social psychologist Irwin M. Rosen stock at el in 1950s.

Its constructs are: perceived severity, perceived susceptibility, perceived benefits, perceived barriers, cues to action and self-efficacy.

1. Perceived severity is subjective assessment of Health problem and its consequences. An individual who perceives a given Health problem as serious is more likely to engage in prevention.
2. Perceived susceptibility refers to subjective assessment of health problem. Individuals who perceive that they are susceptible will engage in behaviour to reduce the risk.
3. Perceived benefits intend that individual assess value of efficacy on engagement in good behaviour to reduce risks.
4. Perceived barriers refer to individuals assessment of obstacles to behaviour change.
5. Cues to action trigger engagement in Health promoting behaviour.
6. Self-efficacy which is the competency to perform a behaviour it success.

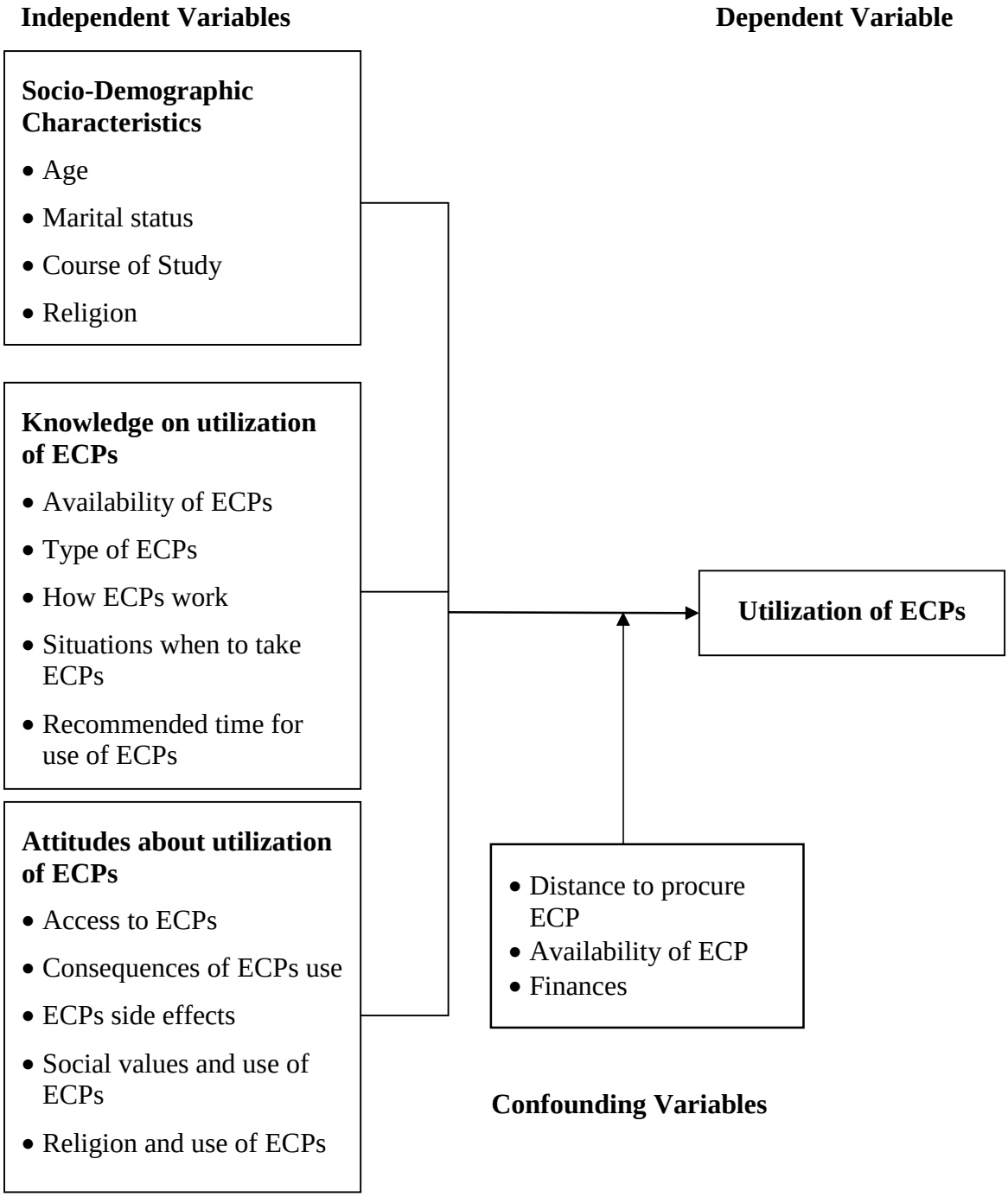


Source: Modified from Becker *et al* (1950's)

Fig 2.1 Theoretical framework for the study

2.5 Conceptual Framework

The conceptual framework illustrated in figure 2.1 shows the relationship between the study independent variables (socio-demographic characteristics, pre-existing knowledge about ECPs, and pre-existing attitudes and perceptions about ECPs), and the dependent variable (uptake of ECP)



Source: Modified from Rosentock (1974)

Figure 2.2 Conceptual Model of the study

CHAPTER THREE: MATERIALS AND METHODS

3.0 Study Design

The researcher used a mixed method research and cross-sectional descriptive study design which aimed at assessing knowledge, attitudes and practices with regard to utilization of emergency contraceptives among female students at Kenya Medical and Training College Thika campus. This design helped the researcher to collect data from many participants at the same time. The design also allowed for inexpensive and quick data collection.

3.1 Study Area

The study was conducted in Kenya Medical and Training College, Thika Campus. Thika is 1420 m to 1550 m above sea level and its location is at 13’0.000″S 374’59.880″E. Thika Town is 39km away from Nairobi City and 440km away from Mombasa City. The town covers an area of 217.6 km^2. As at 2009 Kenya census, the population of Thika was 136,917 people.

Nationally, Kenya Medical and Training College has 67 campuses with an average of 10,000 students, 6,721 of whom are female students. Kenya Medical and Training College Thika campus has a total of 785 students, among which 455 are females (KMTC Thika campus students’ registration records, 2018). In addition, the college draws its students from all over Kenya, hence representative of the entire population.

3.2 Study Sample

The study sample comprised female students at KMTC Thika campus who were selected from a total population of 455 students.

3.2.1 Inclusion Criteria

- Registered female student in all programmes at KMTC Thika campus.
- 18 years and above and willing to provide a written consent to participate in the study.

3.2.2 Exclusion Criteria

- Unregistered female students who are at the campus at the time of survey,
- Female students below 18 years
- Those who did not provide a written consent to participate in the study were also being excluded.

3.3 Sample Size Determination

The sample size for this study was computed using a one-sample population proportion formula. Supposing the proportion of students who are aware of emergency contraceptive is 80% and assuming a 10% non-response rate, the required sample was calculated using Fisher, Laing and Stoeckel (1998) formula:

$$n = \frac{Z^2 pq}{e^2}$$

Where**:**

n = the desired sample size if the sample size is greater than 10,000

Z= the standard normal deviate, which corresponds to 95% confidence level = (1.96)

p= proportion of female students aged 18 years or above and aware of EC.

q = 1-p

e= the margin of error at 95% confidence limit = 0.05

$$n = \frac{(1.96)^2(0.5)(1-0.5)}{(0.05)^2} = 384.16$$

Adding a 10% non-response rate, (384.16 + 10%) = 423 study participants. However, the total population of female students is > 10,000 therefore a population correction formula was used.

$$nf = \frac{ni}{[1 + \frac{ni}{N}]}$$

Where**:**

nf = final sample size after population correction

ni = opening sample size before population correction

N = total population of female students enrolled for a full time programme in KMTC, Thika campus

$$nf = \frac{423}{[1 + \frac{423}{455}]} = 219.21$$

Therefore, the required sample size was 220 female students from KMTC Thika campus with additional of 3 in-depth interview respondents.

The following table indicates the respective proportionate sampling as per strata based on year of study:-

YEAR OF STUDY	STRATIFIED SAMPLE SIZE
22	31
105	112
69	77

3.4 Sampling Technique

Kenya Medical Training College Thika campus was selected purposively because it is the main student college campus in Thika Sub-County. The selection and placement of students is centrally done at the KMTC headquarters in Nairobi, and this ensures random distribution of students across the campuses in the country without considering area of residence. A stratified sampling method was used to select a total of 220 respondents. The strata were based on the three (3) groups of students based on year of study: 1st, 2nd and 3rd years i.e. 31,112 and 77 number of students respectively. A list of all registered female students, including their contact details (phone numbers, year of study, age (birth dates), course and department) meeting the selection criteria of the study were obtained from the college registrar's office. Of all 455 females' students, 15 are below 18 years and therefore were excluded from participation, leaving 430 eligible to participate in the study. The respondent was accrued until a sample of 220 respondents was attained. Key informants were selected purposively to provide in-depth information on the study parameters. Three (3) key informants, college nurse, college counsellor and matron female hostels were selected for interview.

3.5 Research Instruments

Data for the study were collected using questionnaires and interview schedules. Structured self-administered questionnaire were used to collect quantitative data and were administered to selected female students. The study instruments were formulated to collect data on socio-demographics of students, knowledge on ECPs, attitude and towards ECP use, and practices with regard to ECP utilization. Key informant guide was used to collect data from the key informant.

3.6 Pre-Testing

A pre-test of the questionnaire with female students meeting the inclusion criteria of the study was conducted at KMTC Gatundu campus in order to assess the soundness of the instrument for the purpose of data collection. A 10% proportion of the total study sample size corresponding to 22 students was used for the pre-test exercise. The pre-test data was used to fine tune final questionnaire before the actual data collection exercise. In addition, pre-testing exercise was used to inform on the time it would take a respondent to complete the questionnaire, thus helped in planning for the data collection exercise.

3.7 Data Collection Methods

The thesis proposal was submitted to the University of Nairobi -Kenyatta National Hospital (UON-KNH), Ethical Review Committee (ERC) for clearance and approval. Using email accounts, prospective students were emailed and requested to participate in the study. Upon consenting, selected participants were briefed about the purpose of the study – its objectives and procedures. The researcher with the help of two trained research assistants requested the prospective participants to meet at their convenient places in the college during their free time

for data collection. This ensured privacy of each participant and actually made they feel comfortable to participate in the study rather than conducting the study by congregating all the prospective participants in one hall to simultaneously complete the questionnaires. Questionnaires were administered at the time of meeting and the researcher/trained research assistants were in place to clarify just in case the participants required more explanation. The purpose of this was to reduce the non-response rate. A face-to-face interview were administered to the three selected key informants using an interview guide. The researcher sought interviewees' consent to participate in the study.

3.8 Data Management and Analysis

After data collection, the raw data collected was systematically organised, i.e data cleaning,data entry and coding, to facilitate analysis. Completed questionnaires were cross examined for completeness and consistency. Descriptive statistics was used in data analysis. Qualitative data was categorized according to themes relevant to the study and was presented in narrative form using descriptions. Analysis of data employed Statistical Package for Social Science (SPSS).

Subsequently, the data was analysed using odd ratios with 95% confidence intervals to measure the statistical significance of socio-demographic, knowledge, and attitude towards utilization ECPs. Content analysis was used for the qualitative data. Table 3.1 presents the study data analysis plan.

Table 3. 2. Data analysis plan

Objective	Variable and Measurement	Method of data analysis
1	Socio-demographic characteristics	▪ Descriptive statistics (frequencies and percentages) ▪ Odd ratios to measure the statistical significance towards use of EC
2	Knowledge on utilization of ECPs	▪ Descriptive statistics (frequencies and percentages) ▪ Odd ratios to measure the statistical significance towards use of EC
3	Attitudes and practises about utilization of ECPs	▪ Descriptive statistics (frequencies, means, standard deviations) ▪ Odd ratios to measure the statistical significance towards use of EC
Qualitative data from interview guides		▪ Content analysis of patterns and themes

3.9 Ethical Considerations

The thesis proposal was submitted to University of Nairobi-Kenyatta National Hospital (UON-KNH) research and ethical committee for clearance and approval. Institutional authorization was sort from the campus director before data collection allowing the researcher access to the campus (gate keeper permission). Written permission was provided by the campus director with the express provision that participating students would be guaranteed the freedom to refuse participation without fear of prejudice. In keeping with this, prospective participants were required to fill an informed consent stipulating clearly the purpose and objectives of the study. Participation was voluntary and right of the participant to withdraw at any stage of the study was upheld. To ensure privacy, interviews were conducted in neutral and private rooms located within

the campus. Privacy and confidentiality were maintained both during and after the administration of the questionnaire using anonymous questionnaire and keeping the data in secured place.

3.10 Dissemination Strategy

The study findings were disseminated using several methods. First, a copy of thesis will be submitted to the school of nursing of University of Nairobi for publication in the repository. Second, the findings of the study will be published in an internationally peer refereed journal which provides wide audience. Third, the findings will also be presented in scientific seminars and workshops organized locally. Lastly, a copy of thesis will be presented to KMTC Thika college management to help them improve provision of reproductive and sexual health education and also address gaps identified in the study.

a. Limitations of the Study

Informative bias

The survey was carried out among female students in KMTC Thika campus. Thus, prudence must be exercised when generalizing the results of the study to other colleges as it was based on one college only.

Selection bias

The study examined the following variables (namely; socio-demographic factors, knowledge on utilization of ECPs, attitudes and practices with regard to utilization of ECPs. Therefore, results of the study need to be interpreted in the light of these variables and not any other whereby there may be other factors that may affect utilization of contraceptives and are not considered.

CHAPTER FOUR: RESULTS

4.0 Introduction

This section covers response rate, tests of hypothesis, institutional information, descriptive statistics and analysis of determinants of utilization of emergency contraceptive pills among female students at Kenya Medical Training College, Thika, and Kiambu County, Kenya. This chapter presents and interprets the results of the data analysis. Results were presented using tables and figures. The results were interpreted based on the output of the analyzed data. Hypothesis is also tested.

4.1 Response rate

The sample for the study was 220 respondents and 220 questionnaires were given to the participants. In the 220 questionnaires given, only one hundred and ninety six (196) questionnaires were successfully administered while twenty four (24) had missing data and therefore were discarded. Three in-depth interviews were successfully conducted using the interview guide. This gave a response rate of 89% for the questionnaires; this is high and adequate rate for this study. According to Tomaskovic- Devey, Leiter, and Thompson, (1994) any response rate of about 70 % is considered as yielding a relatively high response rate considering demands of participants in this institutions. Also three in-depth interview guides were distributed to college counsellor, college nurse and matron female hostel.

4.2 Socio-demographic Characteristics of the Participants

Participants were asked to respond on their socio-demographic characteristics and they responded as based on their age,year of study, marital status, religion and course they pursue. They were analysed, presented, and interpreted as follows.

4.2.1 Age Of The Respodent

Results of the analysis of respondents' age are presented as in figure 4.1. Respondent's age was between 18-25 years. Majority (27%) of respondents were 20 years of age while the least were the participants with 23 years of age with less than 7% of the participants.

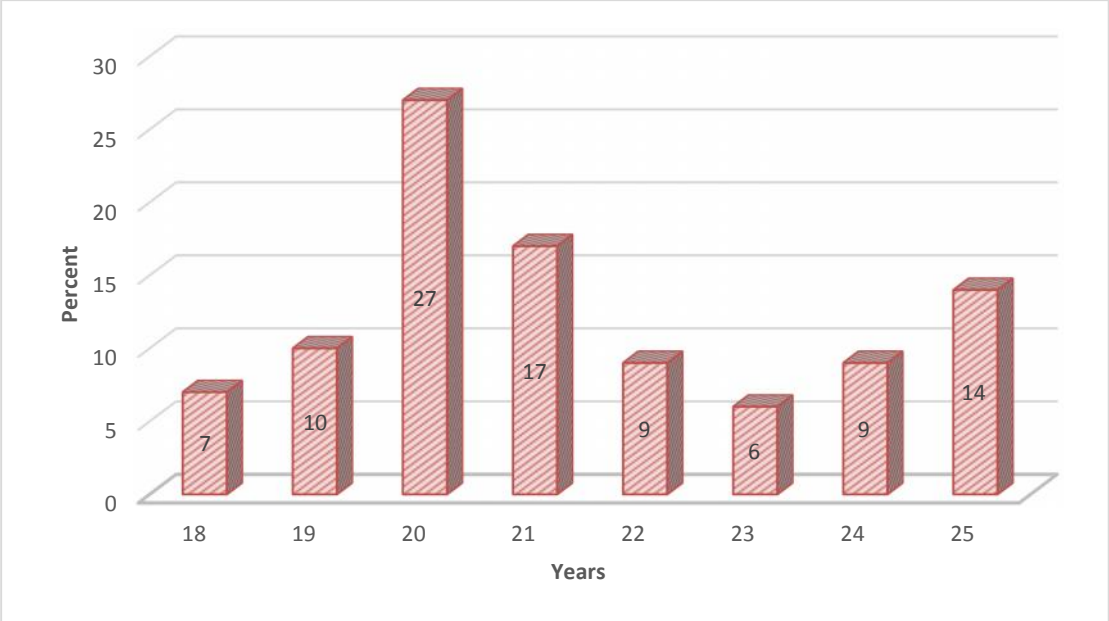


Figure 4.2. Respondents Age

4.2.2 Year of study

Participants' response were summarized and presented in table 4.1. For the year of study, the majority respondents were in second year of study who were slightly over half of the respondents (53.1%). While the least were in their first year of study with 22 participants (11.2%).

Variable	N	Percent
Year of study		
First	22	11.2%
Second	105	53.7%
Third	69	35.7%

4.2.3 Marital status

As for marital status, majority (72%) were cohabiting with partner, single and married had the same number of participants.

Variable	N	Percent
Marital status		
Married	27	14%
Single	27	14%
Cohabiting with partner	142	72%

4.2.4 Religion

The majority were Christians with 90% of the respondents.

Variable	N	Percent
Religion		
Christians	176	90%
Muslim	20	10%

4.2.5 Nature of Courses Pursued

Results of the analysis of the nature of courses pursued by the study respondents are illustrated in figure 4.2. Majority of the respondents (86%) were pursuing health sciences courses while only 14% were pursuing non-science related courses.

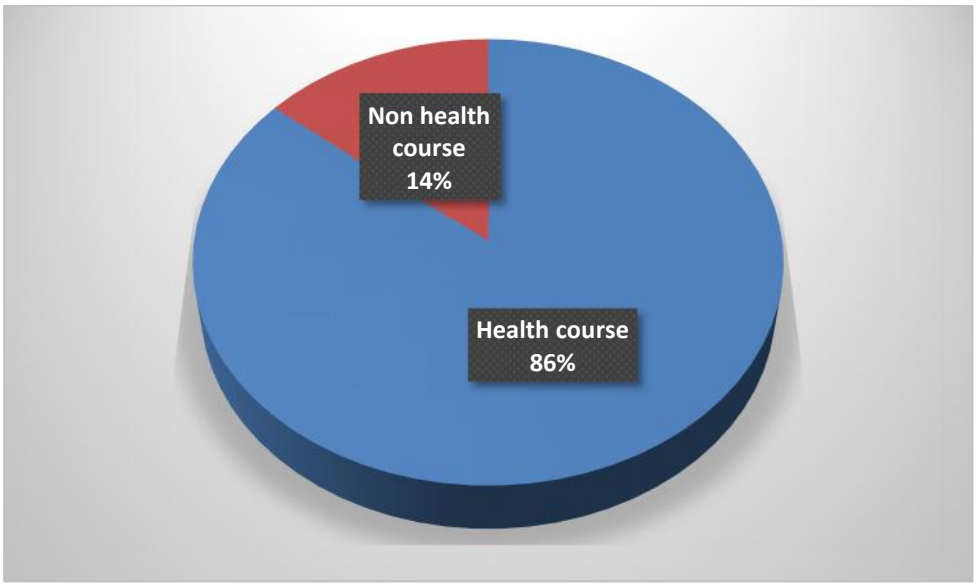


Figure 4.2 Nature of course pursued by respondents

4.2.6 Information on Respondents Sexual Relationship

Results of the analysis of respondents on their sexual relationships was analysed and presented in the table 4.2. Majority of participants (81.6%) reported to have been in female-male sexual relationships. In addition, Majority (79.6%) was currently in a serious female-male sexual relationship. However, less than 10% of the respondents could not substantiate their nature of relationship. Moreover, majority (37.8%) were living with their parents, followed by those who were living alone in rented hostels within the college premises (n=44, 22.4%).

Table 4.2. Information on respondents' sexual relationship

Variables	**N**	**Percent**
Ever had sexual intercourse		
Yes	160	81.6%
No	36	18.4%
Whether currently in female-male intercourse relationship		
Yes	156	79.6%
No	40	20.4%
Nature of the relationship		
Casual	26	13.3%
Serious	116	59.2%
Don't Know	14	7.1%
Living with : Parents		
Female peers	74	37.8%
Cohabiting with a male partner	24	12.2%
Legally married partner	26	13.3%
Alone in rented hostels within the	16	8.2%

college premises Alone in rented hostels outside the college premises	44 12	22.4% 6.1%

4.3 Pregnancy History of Participants

Results of the respondents' pregnancy history are presented in Table 4.3. , majority (89.0 %) had sexual intercourse before joining the college for their study. With regard to age at first sex, the mean age at first sex is 19 years.

Table 4.3.Pregnancy history

Variables	**N**	**Percent**
Sexual intercourse in lifetime Yes No	 160 36	 81.6% 18.4%
Mean age at first sexual intercourse 19 years		
Ever had pregnancy while in college Yes No	 54 106	 27.6% 54.1%
Cause of pregnancy Unintended Intended	 42 12	 21.4% 6.1%

4.4 Knowledge about Emergency Contraceptive Pills

The results of the participants' knowledge about emergency contraceptive pills were analysed and displayed as shown in the table 4.4. Majority of the respondents (83.6%) reported to have ever heard about ECP. Likewise, results indicated that majority (23.5%) had gotten the information about ECP from school lecturers and (20.4%) from health care providers. Moreover, majority (83.7%) reported combined oral contraceptives as the type of drugs used as ECP. Participants were also requested to indicate the source of ECPs and majority (42.9%) indicated that they could obtain them from health care providers in hospitals. A total of (71.4%) respondents believed that ECPs were not effective even if taken early.

In addition, majority (38.8%) indicated that ECPs should only be used if condom raptured during sexual intercourse. However,(8.2%) did not know the existence of ECPs. Moreover, majority (85.7%) indicated that ECPs should be taken within 72 hours after unprotected sex, though (6.1%) did not know the period one should take for the ECPs to be effective. Majority (51.0%) of the respondents indicated that ECPs were highly effective (>95%).

Table 4.4.Knowledge on Emergency Contraceptive Pills (ECP)

Variables	**N (%)**
Ever heard about emergency contraception	
Yes	164 (83.6%)
No	32 (16.3%)
Source of ECP information	
School lecturers	46 (23.5%)
Health care provider	40 (20.4%)
Family clinic	24 (12.2%)
Books/published journals and articles	22 (11.2%)
Pharmacist	20 (10.2%)

Friends and student colleagues	8 (4.1%)
Mass Media	4 (2.0%)
Internet	2 (1.0%)
Drugs used as ECP	
Combined oral contraceptive	164 (83.7%)
I do not know	24 (12.2%)
Progesterone only and IUD	8 (4.1%)
Places to obtain ECP	
Health care provider in hospital	84(42.9%)
Chemists	56(28.6%)
Family planning clinics	44(22.4%)
Fellow students	10(5.1%)
Partner	2(1.0%)
Effectiveness of ECP if taken early	
No	140 (71.4%)
Yes	46 (23.5%)
I do not know	10 (5.1%)
Situations where ECP should be used	
If condom raptured during intercourse	76 (38.8%)
Rape	64 (32.7%)
Missed pill	34 (17.3%)
I do not know	16 (8.2%)
Failure of contraception	6 (3.1%)
Recommended maximum time limit to take ECP	
Within 72 hours after sex	168 (85.7%)
Within 24 hours after sex	14 (7.1%)
I do not know	12 (6.1%)
Within 5 days after sex	2 (1.0%)
Effectiveness of ECP in preventing pregnancy	
Highly effective (>95%)	100 (51.0%)

Effective (75-89%)	64 (32.7%)
I do not know	14 (7.1%)
Not effective at all	10 (5.1%)
Less effective (<10%)	8 (4.1%)

4.5 Attitudes towards Emergency Contraception by Female Students

Table 4.5 clearly shows that most of the respondent, 78.6% agreed that provision of ECPs after unwanted sex prevent unwanted pregnancy,73% agreed that all female students have the right to access ECPs. While also most of the respondents, 53.1% disagreed that ECP promote promiscuity, 62% disagreed that ECPs may cause infertility, 66.3% did not believe that ECP is one way of abortion, 65.3% agreed that their culture does not allow use of ECPs in any situation. Likewise, 55.1% disagreed that religion does not allow use of ECPs.

Table 4. 5. Knowledge, attitude and culture towards ECP use

	Disagree	Neutral	Agree	Mean	SD
ECP after unprotected sex can prevent unwanted pregnancy	18.4%	3.1%	78.6%	3.16	0.839
Females have the right to access ECP	23.5%	3.1%	73.5%	3.5	0.912
ECP promotes promiscuity	53.1%	9.2%	38.1%	2.85	0.431
ECP is one way of abortion	66.3%	8.2%	25.5%	2.59	0.571
It is sinful act to use ECP	65.3%	8.2%	26.5%	2.59	0.223

ECP use may cause infertility in a woman	62.2%	19.2%	28.6%	2.66	0.812
ECP will affect ongoing regular methods of contraception negatively	52.0%	11.2%	36.7%	2.84	0.423
My culture does not allow use of ECP	65.3%	8.2%	26.5%	2.59	0.691
My religion does not allow use of ECP	55.1%	7.1%	37.8%	2.75	0.814

4.6 Utilization of Emergency Contraceptives

Results of the analysis of respondents' utilization of emergency contraceptives are shown in table 4.6. Most of the respondents (70.4%) indicated that they had sexual intercourse in the last one year. Of these participants, 65.3% revealed they had used contraception as 43.9% revealed they used ECPs to prevent pregnancy.

Table 4. 6 Utilization of ECP among female students

Variables	N (%)
Had female-male sexual intercourse in the last 12 months	
Yes	70.4%
No	29.6%
Use of ECP if one had female-male sexual intercourse in the last 12 months	
Yes	65.3%
No	34.7%
Type of method utilized	
ECPs	43.9%
Condom	17.3%
Injectables	4.1%
Natural methods like safe days	3.1%
Intra-uterine device	1.0%
Frequency of using ECP	
Sometimes	30.6%
Always	15.3%
Rarely	13.3%

4.7 Bivariate analysis

Binary logistic regression was used to study the effect of independent variable on dependent variable. Analysis of the main predictors as per the objectives and hypothesis testing. The results were analyzed using odd ratios and were interpreted based on p-values. These results were displayed as shown in the table 4.7

Bivariate Analysis for socio-demographic characteristics

Correlations

		Age	Marital Status	Year of Study	Religion	Age at first sex
Age	Pearson Correlation	1	-.266**	.430**	.011	.336**
	Sig. (2-tailed)		.000	.000	.882	.000
	N	196	196	196	196	160
Marital Status	Pearson Correlation	-.266**	1	-.030	.000	-.185*
	Sig. (2-tailed)	.000		.678	1.000	.019
	N	196	196	196	196	160
Year of Study	Pearson Correlation	.430**	-.030	1	.096	.259**
	Sig. (2-tailed)	.000	.678		.182	.001
	N	196	196	196	196	160
Religion	Pearson Correlation	.011	.000	.096	1	.016
	Sig. (2-tailed)	.882	1.000	.182		.843
	N	196	196	196	196	160
Age at first sex	Pearson Correlation	.336**	-.185*	.259**	.016	1
	Sig. (2-tailed)	.000	.019	.001	.843	
	N	160	160	160	160	160

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The table shows that that only the relationship between marital status and age and also age at first sex and the marital status have a negative correlation and thus an increase in one factor leads to a decrease of the other

The results from table 4.7 were discussed as per the study objectives and hypothesis as shown below

Table 4. 7. Predictors of emergency contraception utilization among female students.

variables	Used ECP		Odds Ratio		
	Yes n (%)	**No n (%)**	**COR (95% CI)**	**AOR (95% CI)**	**P-value**
Age					
≥20 years	55(69.2%)	83(52.3%)	1.75(1.23-4.23)	2.13(0.48-11.2)	0.215
18 -20 years	21(30.8%)	59(47.7%)	1	1	
Year of study					
Year III	50(75.2%)	20(64.2%)	2.13(1.02-4.14)	0.63(0.13-2.87)	0.231
Year II	64(24.8%)	40(35.8%)	1.23(1.08-3.58)	0.89(0.96-2.65)	0.352
Year I	13(23.4%)	9(25.1%0	1	1	
Field of study					
Health sciences	110(91.7%)	10(8.3%)	5.26(0.87-3.45)	2.91(0.87-8.25)	0.315
None health sciences	18(100.0%)	0(0.0%)	1	1	
Marital status					
Ever married	16(100.0%)	0(0.0%)	6.26(2.12-12.36)	4.05(1.73-8.52)	0.18
Singles	88(91.7%)	8(8.3%)	1	1	
Age at first sexual intercourse	14(85.2%)	0(0.0%)	6.36(1.02-8.23)	**3.12(1.74-9.25)***	
≥20 years	106(55.6%)	6(23.2%)	1	1	< 0.000
18 -20 years					
History of pregnancy					
Yes	40(100.0%)	0(0.0%)	5.67(2.01-11.03)	**4.23(1.23-5.23)***	
No	78(90.7%)	8(9.3%)	1	1	< 0.000
Ever used Contraceptives					

Yes	98(92.5%)	8(7.5%)	5.78(3.12-12.04)	**3.15(1.23-7.24)****	< 0.000
No	16(50.0%)	2(14.5%)	1	1	
Knowledge					
High level of knowledge	51(75.5%)	32(24.3%)	10.28(5.15-21.03)	**3.21(1.23-8.01)***	< 0.000
Low level knowledge	15(65.2%)	78(21.5%)	1	1	
Attitude towards ECP					
Favourable attitude					
Unfavourable attitude	65(75.3%)	75(58.2%)	2.18(1.12-4.23)	1.95(0.87-3.75)	< 0.000
	18(24.5%)	56(41.7%)	1	1	
Notes: P – value of <0.05 and **P-value of <0.001					

4.7.1 Socio-demographic characteristics and utilization of emergency contraceptives

From table 4.7, socio-demographic characteristics were measured by age, year of study, field of study, marital status, and Age at first sexual intercourse. Using AOR, it indicates that their AOR are all significant and hence socio-demographic characteristics had significant effect on utilization of emergency contraceptives among female students. The highest variable was marital status with AOR=4.05(1.73-8.52) at 95% level of confidence. Respondents who had sex at age 20 years and above were three times more likely to use ECP as compared to those who had their first sexual intercourse at younger age ranging from 18 to 20 years [AOR: 3.12; 95% CI:1.74-9.25]. Also due to lessons learnt, an assumption was made as from previous pregnancy participants who had history of pregnancy were more than 4 times likely to use ECP [AOR:4.23; 95%CI:1.23-5.23]. Likewise, participants who had ever used ECP were more than three times likely to use ECP (AOR: 3.15; 95%CI: 1.23-7.24]. This was also supported by the findings revealed that (89.8%) were sexually experienced.

Also the study revealed that (25.5%) of all respondents became sexually experienced at an early age of 18 years followed by those who were 19 years and 20 years at 22.4% each.Results from in-depth interview indicated that all the three who were interviewed were aware on the key indicators of the socio-demographic characteristics that influence ECP use. All were aware of the influence majorly by age and marital status.

This predictor was also tested using null hypothesis where I rejected the null hypothesis as the p-value and thus there is significant relationship between socio-demographic characteristics and utilization of ECP among female students at Kenya Medical and Training College, Thika Campus. Using the p-value, this hypothesis was tested based on the key variables that were used to predict utilization of emergency contraceptives. Only age at first sexual intercourse had a p-value <0.000 which is significant and hence this lead for rejection of null hypothesis and hence we concluded that there significant relationship between socio-demographic characteristics and utilization of ECPs among female students at Kenya Medical and Training College, Thika Campus, though not highly effective as only one key variable was significant.

4.7.2 Establish the knowledge about utilization of emergency contraceptives

The second objective was to establish the knowledge about utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus. From table 4.6, knowledge was classified as high level of knowledge and low level knowledge. Using AOR, it indicates positive significance on utilization of emergency contraceptives among female students with AOR=3.21(1.23-8.01) at 95% level of confidence. This means that those

who had high level of knowledge on ECP were three times more likely to use ECP than those with low level of knowledge AOR=3.21(1.23-7.24) at 95% level of confidence.

This predictor was tested using null hypothesis which was that there is no significant relationship between knowledge about ECP and utilization of ECP among female students at Kenya Medical and Training College, Thika Campus. Using the p-value ,as the p-value <0.000 for knowledge, then we rejected the null hypothesis and hence concluded that there is significant relationship between knowledge about ECP and utilization of ECP among female students at Kenya Medical and Training College, Thika Campus.

4.7.3 Investigate attitude about utilization of emergency contraceptives

The third objective was to investigate the attitudes about utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus. From table 4.6, attitude towards ECPs was classified as favourable attitude unfavourable attitude using AOR, it indicates positive significance on utilization of emergency contraceptives among female students with AOR=1.95(0.87-3.75) at 95% level of confidence. This means that those who had favourable attitude on ECPs were almost two times more likely to use ECP than those with unfavourable attitude. The study findings also revealed that 78.6% of the respondents were of the belief that provision of ECPs after unprotected sex could prevent unwanted pregnancy. However, 53.1% and 66.3% refuted that ECPs promotes promiscuity and was one way of abortion respectively. This indicated that respondents in this study had favourable attitude towards ECPs utilization.

. This predictor was tested using null hypothesis which was that there is no significant relationship between attitudes and utilization of ECPs among female students at Kenya Medical

and Training College, Thika Campus. Using the p-value ,as the p-value <0.05 hence this lead for acceptance of null hypothesis and hence we concluded that there is significant relationship between knowledge about ECPs and utilization of ECPs among female students at Kenya Medical and Training College, Thika Campus.

4.8 Qualitative data analysis

Qualitative data analysis was used to enhance decision making in the study.

Deductive approach of qualitative data analysis was used where research were used as a guide for grouping and analysing the data.

4.8.1 Method of analysing

The data was transcribed, organized where descriptive coding was used to gain deeper insight into the meaning of the data.

Table 4.6 In-depth interview analysis

Indicators	Result	N	%
Extent students are sexually active	Highly Sexual active	2	66.6
	Very active	1	33.3
Main methods of family planning	Contraceptives	2	66.6
	Nothing	1	33.3
Cases Related to unwanted pregnancy	Common in the college	3	100.0
Causes of unwanted Pregnancy	Unsafe sex	3	100.0%
Consequences of unwanted pregnancies	Unsafe abortions	2	66.6
	Attrition from college	1	33.3
Knowledge on ECP	Basic knowledge	2	66.6
	Slight knowledge	1	33.3
Knowledge Influence on use of ECP	Proper utilisation of ECPs	3	100

Main Socio-demographic factors	Below 25 ;years of age	2	66.6
	Not married	1	33.3
Suggestions to improve ECP uptake	Educate on use of ECP	2	66.6
	Make use of long family planning methods	1	33.3

The Respective Themes were as follows

Participants	**Theme code**	**Question / Response**
Moderator	7.00	**In your own opinion, to what extent are students sexually active? If they are active, what are the main methods they use to prevent unwanted pregnancies?**
School Nurse	7.01	These students are high sexually active and use contraceptives
Dorm Matron	7.01	Majority of the students are sexually active and use contraceptives
School Councillor	7.02	Majority are sexually active and use no contraceptives

Participants	**Theme code**	**Question / Response**
Moderator	4.00	**Tell me more about unwanted pregnancies among students from college? What are the main causes of the unwanted pregnancies**

		and the associated consequences? ***Probe for magnitude of unwanted pregnancies, causes, outcomes such as attrition from school, abortions and pregnancy related complications)***
School Nurse	4.01	Unwanted pregnancies are common in college and those who get pregnant seek abortion. The main cause of this is due to lack of protection during intercourse
Dorm Matron	4.01	Unwanted pregnancies are common in college and those who get pregnant seek abortion. The main cause of this is due to unsafe during intercourse
School Councillor	4.05	There are cases of unwanted pregnancies and they end up with ectopic pregnancies. This is due to lack of using family planning.

Participants	**Theme code**	**Question / Response**
Moderator	3.12	***To what extent are students knowledgeable on ECPs?***
School Nurse	3.30	Majority have knowledge on ECP
Dorm Matron	3.35	They don't know , some use after 72 hours
School Councillor	3.30	Majority have knowledge on ECP

Participants	Theme code	Question / Response
Moderator	8.00	**What are the main socio-demographic characterics of female students who use ECPs? How do these characteristics influence update of ECPs?** ***Focus your probes on their age marital status, year of study, socio-economic background and religion***
School Nurse	8.01	They are mostly in second year and cohabiting with a male partner
Dorm Matron	8.01	They are single and in second year of school
School Councillor	8.02	Married ones usually use contraceptive

Participant	Theme code	Question/Response
Moderator		**What are some of your suggestions which you feel needs to be made to improve uptake of ECPs or reduce unwanted pregnancies.**
School Nurse	4.15	They should abstain from sex.
Dormitory matron	4.12	They should wait until married to have sex.
School councillor	4.12	They should be educated on long term method.

As seen from the themes, the three **key informant guides** were distributed, the opinion from the participants indicated that all agreed that students were sexually active and use of ECPs by students is high. They also indicated that in most cases the ECPs are on high demand since

they are used frequently. These participants were accepted at the greater extent on the issue of the prevalence of unwanted pregnancies among the students and they said that this issue even leads to students drop out and interfered with female academic performance. The participants also indicated that majority of the students have no clear knowledge on ECPs since majority also pursue medical related courses and that they are taught. Their response was as indicated in table 4.6 below

4.9 Important Findings

- The socio-demographic characteristics had a positive influence that was significant on use utilization of ECP.
- Based on the study and analysis of the data it revealed that, age at first sexual intercourse was significantly associated with ECP use. Female students who had sex at age 20 years and above were three times more likely to use ECP as compared to those who had their first sexual intercourse at younger age of 18 to 20 years.
- Participants with history of pregnancy were more than 4 times likely to use ECP that the female students who had history of pregnancy. Hence knowledge had a positive effect on ECP utilization and it indicates a positive relationship in that as knowledge increases on the awareness then utilization also increases and vice –versa. Likewise, female students who had ever used ECP were more than three times likely to use them more than those who had not used.
- On attitude on ECP there is no significant relationship between attitude and utilization of ECP

CHAPTER FIVE: DISCUSSIONS CONCLUSIONS & RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussions, conclusions and recommendations of the study as per the research objectives. These sections were discussed as follows:

5.2 Discussion

Analyses of the survey data have revealed important findings from the study. First, age at first sexual intercourse was significantly associated with ECPs use. Female students who had sex at age 20 years and above were three times more likely to use ECPs as compared to those who had their first sexual intercourse at younger age of 18 to 20 years. The socio-demographic characteristics had a lesser positive influence that was significant on use utilization of ECP since only one variable was significant in socio-economic characteristics. Second, participants with history of pregnancy were more than 4 times likely to use ECPs that the female students who had no history of pregnancy. Hence history of pregnancy had a positive effect on ECP utilization and it indicates a positive relationship in that as knowledge increases on the awareness then utilization also increases and vice –versa. Likewise, female students who had previously used ECP were more than three times likely to use them more than those who had not used.

Also, knowledge about ECP was found to be significant in utilization of ECP among female students. The finding shows that 83.6% of respondents were found to have high level of awareness about ECP. The possible explanation of this difference could be due the differences in provision of sexual and reproductive health education at schools and institutions of higher learning as well as free discussion on sex matters and sexuality among female students in these

nations. School lecturers and health care providers were reported to be the main source of information of EC by 23.5% and 20.4% of respondents respectively.

The high level of awareness could be because majority of students depended on their lecturers and healthcare provides as a source of information. In this study, ECP information was not popular with friends and student colleagues. This finding was inconsistent with a study carried out in Nigeria which established 64.9% of the female students' sourced information on ECP from their friends and colleagues. The probable reason why female students in this study relied on lecturers as a source information about ECP is could be due to the fact that the study was carried out in a health sciences based college where these lecturers are even health care providers. With respect to utilization of ECPs, 70.4% had experienced sexual contact in the last 1 year before the survey. Of these respondents, 65.3% reported that they used ECP. Additionally, 58.2% utilized ECP after having unprotected sexual contact.

5.2.1 The influence of socio-demographic characteristics on utilization of emergency contraceptives pills.

From these findings, majority were in second year of study(53.1%) followed by those in third year .

This findings have some similarities with the study conducted by Meyer et al., 2011 who find out that educated women including students are associated with a higher likelihood to obtain and understand reproductive and sexual health information and resources than the less educated particularly those who cannot read and/ or write. Also Lewandowski (2013) found a positive relationship between increase in level of education and use of emergency pills among women. Also results indicated that many were single, and few were cohabiting with a male partner. This

study contradicts with a study by Tilahun et al., (2010) who revealed that married women were more likely to demand and use contraceptives than their counterparts who were not married due to societal expectations and moral values practiced in a society such as prohibition of pre-marital sex. Majority were pursuing health sciences courses while very few were pursuing non-science related courses. Majority being students with health related course it indicates that they understand how to use contraceptives and hence they also put it in practice in most instances. This agrees with the study by Meyer et al., (2011) who found out that educated women including students are associated with a higher likelihood to obtain and understand reproductive and sexual health information and resources than the less educated. Also lack of proper knowledge and awareness on the contraceptives and use has been associated with increase in unwanted pregnancies even after uses. Also Respondents who had sex at age 20 years and above were three times more likely to use ECP as compared to those who had their first sexual intercourse at younger age ranging from 18 to 20 years. This finding is consistent with a study done in Adama University (Dejene, Tsion, & Tefera 2010). This could be due to better exposure to information or increased awareness about ECP, maturity, and experiences.

In line with the finding of study carried out in Uganda (Asinja, 2010), EC utilization was found to be higher among female students with history of pregnancy than those without. This could be due to lessons learned from previous pregnancy. Participants who had history of pregnancy were more than 4 times likely to use ECP. Likewise, participants who had ever used ECP were more than three time likely to use ECP. This was also supported by the findings revealed that many were sexually experienced. In addition, many of the respondents were sexually active at the time of the study. This percentage was higher that the findings of Mizan-

Tepi University of South West Ethiopia at 38.4% (Shiferaw, Gashaw, & Tesso 2016) and Adama University at 29.4% (Tilahun, Assefa, & Belachew 2010).

Also the study revealed that some all respondents became sexually experienced at an early age of 18 years followed by those who were 19 years and 20 years at 22.4% each. This finding was consistent with the study conducted among female students at KwaZulu-Natal in South Africa, where respondents were found to be sexually active at the age ranging between 18 to 21 years (Hoque & Ghuman 2012). Results indicate that some students had unprotected sex. This finding supported the study conducted in Adama University. Results from in-depth interview indicated that all who were interviewed were aware on the key indicators of the socio-demographic characteristics that influence ECP use. All were aware of the influence majorly by age and marital status.

5.2.2 Establishment of knowledge about utilization of emergency contraceptives among female students at Kenya Medical and Training College.

The second objective was to establish the knowledge about utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus. The finding shows that 83.6% of respondents were found to have high level of awareness about ECP. This finding was higher than the level of awareness reported among college students in South West Ethiopia at 24.1% (Shiferaw, Gashaw, & Tesso 2016), Nepal at 66% (Adhikari, 2009), South Africa at 49.9% (Tilahun, Assefa, & Belachew 2010) and South Ethiopia at 72.2% (Tolossa, Meshesha, & Abajobir 2013). The possible explanation of this difference could be due

the differences in provision of sexual and reproductive health education at health scienceschools and institutions of higher learning as well as free discussion on sex matters and sexuality among female students in these nations. School lecturers and health care providers were relied on as the main source of information of ECP by 23.5% and 20.4% of respondents respectively. The percentage of utilization was slightly higher compared to a study done among female university students in Nigeria at 33.9% (Ebuehi, Ekanem, & Ebuehi 2006) and lower compared to a study done in Ethiopia where 75% of sexually active students had ever used the Emergency Contraception (Kongnyuy et al., 2007). From this findings, also female students who had used ECP before were more likely to use them when compared to those without prior experience. This finding supported Dejene, Tsion and Tefera (2010) study conducted in Adama University and Makerere University.

The high level of awareness could be because majority of students depended on their lecturers and healthcare providers as a source of information. In this study, ECP information was not popular with friends and student colleagues. This finding was inconsistent with a study carried out in Nigeria which established 64.9% of the female students' sourced information on ECP from their friends and colleagues. The probable reason why female students in this study relied on lecturers as a source information about ECP is could be due to the fact that the study was carried out in a health sciences based college where these lecturers are even health care providers. With respect to utilization of ECPs, 70.4% had experienced sexual contact in the last 1 year before the survey. Of these respondents, 65.3% reported that they used ECP. Additionally, 58.2% utilized ECP after having unprotected sexual contact. The percentage of utilization was slightly higher compared to a study done among female university students in Nigeria at 33.9% (Ebuehi, Ekanem, & Ebuehi 2006) and lower compared to a study done in Ethiopia where 75%

of sexually active students had ever used the Emergency Contraception (Kongnyuy et al., 2007). From this findings, also female students who had used ECP before were more likely to use them when compared to those without prior experience. This finding supported Dejene, Tsion and Tefera (2010) study conducted in Adama University and Makerere University.

Moreover, high level of awareness about ECP was significantly associated with the use of emergency contraceptives. This result was consistent with studies carried out in Arbaminch and Cameroon (Worku 2011; Kongnyuy *et al.*, 2007). From the in-depth interviews all who participated suggested that awareness of ECP increases its use and many of the medical and health related students were using regularly.

5.2.3 Attitude about utilization of emergency contraceptives among female students at Kenya Medical and Training College

The third objective was to investigate the attitudes about utilization of emergency contraceptives among female students at Kenya Medical and Training College, Thika Campus. The study found out that some of the respondents refuted that ECP promotes promiscuity and was one way of abortion respectively. This indicated that respondents in this study had favourable attitude towards ECP utilization. These findings supported those of Worku (2011) studies conducted in Arbaminch and Tajure (2010) studies conducted in Jimma.

5.3 Conclusion

On the basis of results, the following are the conclusions made on each variable:-

Socio-demographic characteristics

Socio-demographic characteristics had a significant relationship with the utilisation of ECPs though had a very small significant as the sub-groups considered under the variable only one was significant

Knowledge on utilization of ECPs

Results indicated that the level of knowledge about ECP among female students in Kenya Medical and Training College was still low and probably with a lot of misinformations about the same.

It was therefore concluded that the level of knowledge on the utilisation of ECPs had a very much significance on the utilisation of ECPs as those with high knowledge utilised the ECPs to avoid unwanted pregnancies.

Attitude about utilization of ECPs

Attitudes towards utilization of ECPs had no influence as there was no significant relationship between the two variables.

5.4 Recommendations

The following measures are recommended to address the and practices and knowledge uncovered in this study:

1. Institutions with interest in reproductive health services need to work in collaboration with particular focus on family planning thus enhancing youth friendly clinics in public and private facilities.
2. Students who are sexually active should consider using long term family planning method
3. There is also need to conduct a study to find out the relationship between attitude and ECP use moderated by education since this study has eluded that there is no significant relationship between attitude and ECP use.

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APPENDICES

Appendix I Informed Consent Information Sheet

Title of Study: DETERMINANTS OF UTILIZATION OF EMERGENCY CONTRACEPTIVE PILLS AMONG FEMALE STUDENTS AT KENYA MEDICAL TRAINING COLLEGE, THIKA, KIAMBU COUNTY, KENYA

Principal Researcher: Margaret Mwaura Wambui, School of Nursing, University of Nairobi

Introduction:

I am conducting a study about my study whose purpose is to assess utilization of emergency contraceptive use among female students in Kenya Medical Training College, Thika Campus, Kenya. Participants in this research study will be asked questions about their socio-demographic characteristics, use of ECPs, and knowledge on use of ECPs and attitudes about ECP use. There will be no tests to be conducted in this study. The purpose of this consent form is to give you the information you will need to decide whether or not to be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide to be in the study or not. This process is called 'informed consent'. Once you understand and agree to be in the study, I will request you to sign on this form.

You should understand the general principles which apply to all participants in a medical research which are:

i) Your decision to participate is entirely voluntary. However, you may withdraw from the study at any time without necessarily giving a reason for your withdrawal.

ii) Refusal to participate in the research will not affect the services you are entitled to in this institution.

iii) We will give you a copy of this form for your records.

May I continue? **YES / NO**

This study has been approved by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee protocol no. _____

What Is This Study About?

The researcher listed above is interviewing students in KMTC who agree to participate in this study. The purpose of the interview is to assess utilization of emergency contraceptive use among female students in Kenya Medical Training College, Thika Campus, Kenya. Participants in this research study will be asked questions about their socio-demographic characteristics, use of ECPs, and knowledge on use of ECPs and attitudes and perceptions about ECP use. There will be no tests to be conducted in this study. There will be approximately 220 participants in this study. We are asking for your consent to consider participating in this study.

What will happen if you decide to be in This Research Study?

If you agree to participate in this study, the following things will happen:

You will be interviewed by a trained interviewer in a private area where you feel comfortable answering questions. The interview will last approximately 30 minutes. The interview will cover topics such as use of ECPs, Knowledge on ECPs and perceptions and attitudes about ECPs use.

After the interview has finished, the respondent will be thanked for their time. The data records will be stored in safe and locked place accessible to only the principle researcher. We will also ask for your telephone number through which we can contact you if necessary. If you agree to provide your contact information, it will be used only by people working for this study and will never be shared with others. The reasons why we may need to contact you include clarifying responses and requesting for more information on the study subject which may have been left out.

Are There any Risks, Harms, Discomforts Associated with this Study?

Medical research has the potential to introduce psychological, social, emotional and physical risks. Effort will be put in place to minimize the risks. One potential risk of being in the study is loss of privacy. We will keep everything you tell us as confidential as possible. We will use a code number to identify you in a password-protected computer database and will keep all of our paper records in a locked file cabinet. However, no system of protecting your confidentiality can

be absolutely secure, so it is still possible that someone could find out you were in this study and could find out information about you.

Also, answering any questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. Also, event recalls may be stressful. You have the right to refuse the interview or any questions asked during the interview. Furthermore, all study staff and interviewers are professionals with special training in these examinations/interviews.

In case of a concern related to this study, contact the study staff right away at the number provided at the end of this document. The study staff will treat you for minor conditions or refer you when necessary.

Are There Any Benefits Being in this Study?

There are no benefits associated with this study. However, your participation will provide useful information which will be used to improve access to quality ECs for other students. This information will also make a valuable contribution to science and health research.

Will Participation in this Study Cost You Anything?

There will be no cost to be incurred in this study. The researcher will interview respondents within the college in a convenient place. Therefore, no travel or calling costs will be incurred.

What If You Have Questions In Future?

If you have further questions or concerns about participating in this study, please call or send a text message to the study staff at the number provided at the bottom of this page. For more information about your rights as a research participant, you may contact:

Secretary/Chairperson

Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300, Ext. 44102, Email: uonknh_erc@uonbi.ac.ke.

Principal Researcher, Tel No. 0722,282826, Email: maggyynyokabi@gmail.com

What Are Your Other Choices?

Your decision to participate in research is voluntary. You are free to decline participation in the study and you can withdraw from the study at any time without injustice or loss of any benefits.

Appendix II

Consent Form (Statement of Consent)

Participant's statement

I have read this consent form or had the information read to me. I have had the chance to discuss this research with the researcher. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study. I understand that all efforts will be made to keep information regarding my personal identity confidential.

By signing this consent form, I have not given up any of the legal rights that I have as a participant in a research study.

I agree to participate in this research study: Yes No

I agree to provide contact information for follow-up: Yes No

Participant printed name: _____

Participant signature / Thumb stamp_____

Date _____

Researcher's statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and have willingly and freely given his/her consent.

Researcher's Name:_____**Date**: _____

Signature_____

Role in the study:_____*[i.e. study staff who explained informed consent form.]*

For more information contact:

Secretary/Chairperson

Kenyatta National Hospital-University of Nairobi Ethics and Research Committee

Telephone No. 2726300, Ext. 44102

Email: uonknh_erc@uonbi.ac.ke.

Mwaura Margaret Wambui Tel No: 0722 282826

Email: maggyynyokabi@gmail.com

Appendix III Questionnaire for Female Students in KMTC, Thika Campus

Questionnaire Code No: _____

Instructions

- Do not write your name anywhere in this questionnaire
- Put a tick or circle the appropriate box/response or fill the blank spaces where required

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

1. ***Age in years***: **[1]** 18 years **[2]** 19 years **[3]** 20 years **[4]** 21 years **[5]** 22 years **[6]** 23 years **[7]** 24 years **[8]** 25 years **[8]** 26 years **[9]** Any other:_____
2. ***Year of study in this college****:*
   [1] First Year [2] Second Year [3] Third Year
3. ***Marital Status****:*
   [1] Married [2] Single [3] Cohabiting with a partner
   [6] Others [Specify] _____
4. ***Religion:***
   [1] Roman Catholic [2] Protestant (Christians) [3] Muslim
   [5]Others [Specify] _____
5. ***The course you are pursuing in this college:***
   [1] Non health sciences [2] Health sciences
6. ***Have you ever had any female-male sexual relationship?*** [1] Yes [2] No
7. ***Are you currently in a female-male sexual relationship?*** [1] Yes [2] No [If No, Skip to, Question 9]
8. ***Nature of your relationship?***
   [1] Casual [2] Serious [3] Cannot tell
9. ***Whom do you live with?***

   [1] Parents

   [2] Female peers (other students and friends)

   [3] Cohabiting partner (male partner)

[4] Legally married partner/husband

[5] Alone in rented hostels within the college premises

[6] Alone in rented hostels/houses outside the college premises

[7] Others (Specify) _____

SECTION B: SEXUAL AND PREGNANCY HISTORY OF FEMALE STUDENTS

Please tick (√) the most appropriate response or fill the spaces or blanks at the end of the question where applicable.

1. ***Have you ever had a female-male sexual intercourse in your life time?***

   [1] Yes [2] No (If No, Skip to Section C Question 1)

2. ***Age at first sex:*** **[1]** 18 years **[2]** 19 years **[3]** 20 years **[4]** 21 years **[5]** 22 years **[6]** 23 years **[7]** 24 years **[8]** 25 years **[8]** 26 years **[9]** Any other:_____

3. ***Have you ever become pregnant while in college?***

   [1] Yes [2] No (*If No, do not answer question 4*)

4. ***If yes, what was the cause of pregnancy?***

   [1] I had unprotected sex

   [2] The family planning method I was using failed

   [3] I intentionally wanted to be pregnant

   [4] Others (Specify) _____

SECTION C: KNOWLEDGE ABOUT EMERGENCY CONTRACEPTIVE PILLs

The following section will ask you questions in relation to your knowledge on emergency contraceptive pills. Please tick (√) the most appropriate response or fill any space or blank at the end of the question where necessary.

1. ***Have you ever heard of emergency contraception before?*** [1] Yes [2] No
2. ***If yes, where did you hear about ECPs from? [Tick all options applicable to you]***

   [1] Pharmacist [2] Health care provider [3] Family planning clinic

   [4] Mother or family relative [5] Books/published journals and articles

[6] Friends and student colleagues [7] Mass Media (TV, Radio, Newspapers) [8] School lecturers [9] Internet

[10] Others (specify):_____

3. ***Which of these drugs can be used for emergency contraception:***

[1] Combined oral contraceptive [2] Progesterone only & IUD

[3] Anti-biotic like Ampicilin [4] I don't know

4. ***Where do you think ECPs should be obtained from?***

[1] Chemists/pharmacy shops [2] Family planning clinics

[3] Fellow Students [4] Health care provider in hospital

[5] Partner [6] others (specify):_____

5. ***When taken early, emergency contraception prevent sexually transmitted infections?***

[1] Yes [2] No [3] I don't know

6. ***Situation(s) that emergency contraception should be taken***

[1] If condom raptured during intercourse. [2] When there is a missed pill.

[3] When forced to have sex/rape. [4] When there is failure of contraception.

[5] I don't know

7. ***The recommended maximum time limit to take emergency contraception pills:***

[1] Within 24 hours after sex

[2] Within 72 hours after sex

[3] Within 5 days after sex

[4] I do not know

8. ***Effectiveness of emergency contraception pills in preventing pregnancy***

[1] Highly effective (> 95%) [2] Effective (75-89%) [3] Less Effective ((<10%)

[4] Not effective at all [5] I do not know

9. ***Recommended dose of emergency contraception pills***

[1] One dose [2] Two doses [3] Three doses [5] I do not know

SECTION C: ATTITUDES/PERCEPTIONS TOWARDS EMERGENCY CONTRACEPTION AMONG FEMALE STUDENTS

Please tick the number that represent how you feel about Emergency Contraception Pills on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*)

N^{o}	**Statement**	**1**	**2**	**3**	**4**	**5**
1.	Provision of Emergency contraception after un-protected sex can prevent unwanted pregnancy					
2.	All females have the right to access emergency contraception					
3.	Emergency contraception promotes promiscuity					
4.	Emergency contraception may hurt the baby in case it does not work					
5.	Emergency contraception is one way of abortion					
6.	It is sinful act to use emergency contraception					
7.	Emergency contraception use may cause infertility in a woman					
8.	Emergency contraception will affect ongoing regular methods of contraception negatively					
9.	My culture does not allow use of ECP in any situation					
10.	My religion does not allow use of ECP in any situation					

SECTION D: EMERGENCY CONTRACEPTION PILL'S UTILIZATION AMONG FEMALE STUDENTS

1. ***In the last 12 months, have you ever had a female-male sexual encounter?***

   [1] Yes [2] No [If No, Question 1]

2. ***Did you use any contraceptive?***

   [1] Yes [2] No

3. ***What type of contraceptives did you use?***

   [1] Emergency Contraceptive pills (ECPs) [2] Intra-Uterine Device

   [3] Injectables [4] Condom [5] Natural Methods like safe days

4. ***Do you use ECPs when you have unprotected sex?*** (*If No, do not answer question 5*)

[1] Yes [2] No

5. ***If yes, how frequently do you use the ECPs after unprotected sex?***

[1] Always

[2] Sometimes

[3] Rarely

Appendix IV: Key Informant Guide

Identification Panel

Interviewee Code: _____

Position of Interviewee: _____Qualification:_____

Institution: _____

Date of Interview: _____Name of Interviewer: _____

Questions:

1. In your own opinion, to what extent are students sexually active? If they are active, what are the main methods they use to prevent unwanted pregnancies? What the existing patterns are in regards to use of ECPs? *Probe for prevalence of ECPs, types of ECPs used and changes in demand of the ECPs over time.*

2. Are there cases related to unwanted pregnancies among students from college? To what extent are unwanted pregnancies prevalent among the students? What are the main causes of the unwanted pregnancies and the associated consequences? *Probe for magnitude of unwanted pregnancies, causes, outcomes such as attrition from school, abortions and pregnancy related complications)*

3. To what extent are students knowledgeable on ECPs? In what ways does the knowledge of the students influence use of emergency contraceptive pills to prevent unintended pregnancies?

4. What are the main socio-demographic characterizes of female students who use ECPs? How do these characteristics influence update of ECPs? *Focus your probes on their age marital status, year of study, socio-economic background and religion.*

5. What are some of your suggestions which you feel needs to be done to improve uptake of emergency contraceptive pills and or reduce unwanted pregnancies among students?

Appendix V: Letter to Ethics Review Committee

Mwaura Margaret
University of Nairobi
School of Nursing Sciences
Tel: 0722 282 826

23rd February, 2018

The Chairman
KNH/UON Research and Ethics Committee
P.O Box 20723
Nairobi

Dear sir/ madam,

RE: REQUEST FOR AUTHORITY TO CONDUCT RESEARCH

I am undertaking a study entitled, **"DETERMINANTS OF UTILIZATION OF EMERGENCY CONTRACEPTIVE PILLS AMONG FEMALE STUDENTS AT KENYA MEDICAL TRAINING COLLEGE, THIKA, KIAMBU COUNTY, KENYA"** whose purpose is to understand uptake of the emergency contraceptive and factors which promote their uptake among the students with an aim of using the results to recommend tailored policy guidelines and interventions aimed at reducing unwanted pregnancies associated with adverse outcomes such as attrition from school, abortions and maternal deaths. This study is a requirement in partial fulfilment of the award of Master's Degree of Science in Nursing.

I therefore request for an Ethical Review Approval to conduct the study at KMTC Thika campus. Attached please find a copy of my research proposal for your review and subsequent approval.

I look forward to a positive response from you.

Thanking you.

Mwaura Margaret

Appendix VI: Permission to Conduct Research Study in Kenya Medical Training College (KMTC) Thika Campus

Date

The Principal

Kenya Medical Training Thika

P.O Box 729-01000

Thika

Dear Sir/ Madam,

RE: PERMISSION TO CONDUCT RESEARCH STUDY

I am writing to request permission to conduct a research study at your institution. I am undertaking a study entitled. **"DETERMINANTS OF UTILIZATION OF EMERGENCY CONTRACEPTIVE PILLS AMONG FEMALE STUDENTS AT KENYA MEDICAL TRAINING COLLEGE, THIKA, KIAMBU COUNTY, KENYA"** whose purpose is to understand uptake of the emergency contraceptive and factors which promote their uptake among the students with an aim of using the results to recommend tailored policy guidelines and interventions aimed at reducing unwanted pregnancies associated with adverse outcomes such as attrition from school, abortions and maternal deaths. This study is a requirement in partial fulfilment of the award of Master's Degree of Science in Nursing.

In connection with this, I would like to ask your good office to allow me to conduct a survey in your institution. I hope that the college administration will allow me to recruit female students to anonymously complete a 4-page questionnaire (copy enclosed) and to conduct requisite interviews with key informants (copy of interview guide enclosed).

Rest assured that the data I will gather will remain absolutely confidential and to be used on academic purposes only. I believe that you are with me in my enthusiasm to finish this requirement as compliance for my graduation.

I hope for your positive response on this humble matter. Your approval to conduct this study will be greatly appreciated. For further questions please contact me at 0722 282 826.

If you agree, kindly sign below and return the signed form in the enclosed self-addressed envelope.

Sincerely,

Mwaura Margaret

University of Nairobi

School of Nursing Sciences

Approved by:

Name	Title	Signature	Date

Appendix VII: Proposed Budget

The researcher estimates the study budget to be three hundred and fifty five thousands, four hundred and seventy seven Kenyan shillings **(Kshs 355,477)**.

S/no	Item		Cost per unit	Total (Ksh)
1.	Pens	30	25	750
2.	Pencils	50	20	1000
3.	Rubbers	15	10	150
4.	Notebooks	20	100	2000
5.	Sharpener	10	30	300
6.	Paper punch	2	500	1000
7.	Stapler	1	300	300
8.	Stapler pins	2	150	300
9.	Box files	2	250	500
10.	Folders	5	250	1250
11.	Printing and photocopy	10000	15	150000
12.	Airtime	3	2000	6000
13.	Transport and lunch (per day)	20	1000	20000
14.	Research Assistants Allowance	2	15000	30000
15.	Binding of report copies	6	500	3000

16.	Data entry clerks	4	1500	6000
17.	Statistician	1	40,000	40000
18.	Ethics committee fee	1	6000	6000
19.	Seminar and Workshop	2	20,000	40,000
20.	Manuscript Publication	1	30,000	30,000
21.	Total			338,550
22.	Contingency (5%) of the total			16,927
23.	**Grant Total**			**355,477**