FACTORS INFLUENCING UTILIZATION OF MODERN CONTRACEPTION AMONG FEMALE STUDENTS AT KENYA MEDICAL TRAINING COLLEGE, THIKA

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Factors Influencing Utilization of Modern contraception among Female Students at Kenya Medical Training College, Thika

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DECLARATION

This thesis is my own work which has never been presented for a degree in any other University

Signature…… Date …….

Rose Mukeli Ngile

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

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DEDICATION

I dedicate my study to all women and girls globally and commit myself towards advancement of matters reproductive health

To my spouse T.N Mauta for his unwavering support and commitment towards my successful completion.

To my three daughters Eng. Caroline Ndinda, Eng. Linda Mwatha and Grace Mali for their support and encouragement

To my grandson Malik Tafari Noti for his prayers and love

May God bless them all

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LIST OF ABBREVIATION

AIDS	Acquired Immune-Deficiency Syndrome
ARH&D	Adolescent Reproductive Health and Development
COC	Combined Oral Contraceptive
ECP	Emergency Contraceptive Pill
EPS	Equal Probability Sampling
ERC	Ethics review committee
FP	Family Planning
ICPD	International Conference on Population and Development
IUCD	Intra Uterine Contraceptive Device
HIV	Human Immune-Deficiency Virus
HPV	Human Papilloma Virus
KAP	Knowledge, Attitude, Perception
KDHS	Kenya Demographic and Health Survey
KII	Key Informant Interview
KNAYSRH	Kenya national adolescence/youth sexual reproductive health
KNSHP	Kenya National School Health Policy
KMTC	Kenya Medical Training College
MCH	Maternal and Child Health
MOH	Ministry of Health
NHIF	National Health Insurance Fund
NRHP	National Reproductive Health Policy
NRHS	National Reproductive Health Strategy
POP	Progestin Only Pill
RH	Reproductive Health
SDG	Sustainable Development Goal
SRH	Sexual Reproductive Health
STI	Sexually Transmitted Infections
UN	United Nations
WHO	World Health Organization

YFC	Youth Friendly Center

OPERATIONAL DEFINITION OF TERMS

Adolescent	One who is aged between 10-19 years.
Attitude	This is how someone responds or reacts towards something. The response may be favorable or unfavorable.
Awareness	Knowledge of existence of contraceptive methods and their Benefits.
Contraceptive	Device or drug that prevents pregnancy.
Knowledge	The information and understanding one has on modern contraception
Modern contraception	These are oral pills, intrauterine devices, (IUD'S), injectable, male and female condoms, implants and emergency contraception, (WHO.2018).
Perception	The way one thinks or feels about something
Reproductive Health	This is health which touches on all aspects of mental, physical and social wellness and not only the absence of illness in all areas affecting the reproductive system plus all the processes and function that has to do with it.
Sexual rights	These are sexual and reproductive rights that are supposed to be enjoyed by someone, which involve access to reproductive health services and information which address issues of sexuality without any form of discrimination whatsoever.
Sexually active	One who is engaging in heterosexual relationship
Teenager	Someone who is aged 13- 19 years.
Unintended pregnancy	Untimed pregnancy, unwanted pregnancy
Unsafe abortion	This is termination of unwanted pregnancy by someone who does not have the necessary skills and in a place which does not have the required medical standards or both (WHO, 2015)

Utilization(uptake)	The ability to consume contraceptive services
Young people	People aged between 10-24 years
Youth	People aged between 15-24 years
Youth friendly services	These are services that are supposed to be accessible, affordable and appropriate for the unmarried female students. The services should be in the right place, effective and safe for use by young people. These services should be offered by the right individual in an appropriate and acceptable way.

ABSTRACT

In institutions of higher learning, increase in unplanned pregnancies among students is a key concern worldwide. This may result in multiple challenges for academic institutions that include increase in dropout rate and drain on public sector funds where financing of education is through government subsidy. Studies show that 80% of female students in colleges are sexually active and greatly exposed to unintended pregnancies. Lack of utilization of contraception methods may result from inadequate information and limited awareness, where contraceptives are available, concrete information on contraception is not always available to young students. The purpose of this study was to investigate factors influencing utilization of modern contraception among female students at Kenya Medical Training College, THIKA. An analytical cross-sectional study design was employed using a sample size of 264 participants. Quantitative data was obtained using open/closed ended researcher administered questionnaire to determine the proportion of utilization of modern contraception among the female population and identify student/institutional related factors influencing utilization of modern contraception. Qualitative data was obtained from five departmental heads on institutional related factors. Stratified random sampling was used to select female students while purposive sampling was used to select departmental heads. Data analysis was done using statistical package for social sciences 26.0 (SPSS). Tabulation of information was done and Chi square used to establish association between variables and how they influence utilization of modern contraception among female students. Responses from the five departmental heads was analyzed qualitatively and conclusion drawn out of the responses. Presentation of quantitative data was done in form of tables, bar graphs and pie charts. To control for confounders, multivariate logistic regression was applied. The study established that previous awareness of contraception methods, history of contraceptive use and open discussion on contraception with friends and relatives was significantly associated with increased utilization of contraception. The study revealed that a small proportion of female students, 26% (n=68), were currently utilizing modern contraception leaving a gap which could lead to high risk of unintended pregnancies. **C**onclusion: proportion of utilization of modern contraception was 26%. Variables under study were knowledge factors, social demographic /social cultural factors and institutional factors. Married college students and those with one or more children were more likely to use modern contraception. Counseling services at the school were underutilized. This study recommends collaboration between Kenya medical training college, (KMTC) and maternal child health/family planning, (MCH/FP) department in Thika level 5 Hospital for provision of youth friendly services and supply of timely modern contraception methods to students in need. Behavior change communication and life skills to be emphasized during counseling sessions and on the importance of good moral standards. Promotion of other pregnancy prevention methods including sexual abstinence should be emphasized.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Annually, up to 16 million adolescent females aged 15- 19 years give birth. This is an age group which has the highest mortality rate resulting from pregnancy. Yearly contraception prevents 188million unintended pregnancies which result in reduction of abortion cases by 112 million, newborn deaths by 1.1 million and finally maternal deaths by 150,000 thousand. In spite of progress, contraceptives remain out of reach for many young people globally, resulting in millions of unplanned pregnancies and abortions yearly (Blake, 2021; Darroch et al., 2013).

In institutions of higher learning, increase in unplanned pregnancies amongst students is a key concern worldwide. Unplanned pregnancies interrupt academic progress amidst various, psychological and social challenges. Research done in America, show that eighty per cent (80%) of female students aged 18 and 24 are sexually active. The failure of contraceptive utilization is due to lack of adequate information and limited awareness. Unplanned pregnancies result in multiple challenges for academic institutions worldwide which include increase in dropout rates, drain on public sector funds and financial losses for academic institutions (Mac Phail et al., 2017; Vermaas 2015; Coetzee & Ngunyulu, 2015).

In Africa, a study carried out in Botswana on youth reproductive and sexual health issues, revealed that within the age group of 15-19 years more than 25% were pregnant, (advocates for youth 2019). Another study found that a third, (33.3%) of teenagers and single women aged 15 to 49 years had unintended pregnancy. Unplanned pregnancies occurring among this group result from method failure or lack of utilization of contraceptives. Though contraceptives are available, the information on contraception is not readily available to young students in need (Hoque et al., 2013). A study done in Cameroon showed two thirds of maternal deaths occurred among adolescents and young women. Unintended pregnancies were as a result of inconsistent use of modern birth control methods. Socio demographic

and economic factors affect young girls and university student's usage of modern contraceptives. Adequate knowledge and effective counseling on modern birth control measures in Pre University and colleges could lead to reduction of maternal mortality in the country. (Felix et al., 2019).

The ministry of health, Kenya through the National Reproductive Health Policy (NRHP, 2017), provided a road map for justifiable well-organized reproductive health services for all persons including youths /adolescents. Policy on Adolescent and Youth Reproductive Health, (AYRH), emphasized on sexual rights of young people yet there is more to be achieved. Fertility rate for adolescents in Kenya aged 15-19 years is currently at 121 births per 1000 women, (12.1%) from the year 1975; contribution of this to the national total fertility rate (TFR) went up from thirty two per cent (32%), to thirty seven per cent (37%), in the year 2018. Figures show that eighteen per cent (18%), of adolescents aged 15-19, had begun child bearing and among (20-24), years, one out of four, (25%), an equivalent of twenty six per cent, (26%),begun child bearing at eighteen years of age, Kenya national adolescent sexual reproductive health (KNASRH policy, 2015).

There are several factors associated with adolescent and youth pregnancies, most of these pregnancies result from evil vice practiced in the society such as early child marriage and all manner of sexual abuse. Others factors contributing to this include poverty, lack of education and poor economic status. Inadequate healthcare services for adolescents/youth particularly those dealing with contraception awareness and availability of commodities that are offered at an affordable rate translates to low uptake in developing areas. In Kenya, a study conducted on incidence and magnitude of abortion cases among women seeking post abortion care services, established that 17% were those below 19 years. In 2012, 45% of those admitted with complicated abortion in Kenyan hospitals were adolescents/youth (KNASRH policy, 2015).

In Tanzanian Universities research work revealed that reasons for contraceptive use among undergraduate students were mostly due to fear of unwanted pregnancy and contracting HIV/AIDS. Among the married students, pregnancy spacing was their main concern. Reasons attributed to none use was religion related and associated fear

of unwanted contraception outcome. Source of information regarding contraceptives was through friends, mass media especially private and public television stations and Health care settings. The study found out that two thirds (2/3) of the students were engaging in sexual activities, majority of them having had their first sexual engagement between 20-24 years while at the university. The commonly known and frequently used contraceptive was the condom. Sexual activity was high among unmarried respondents. Transition from a rural and restricted environment to a freer, urban and liberal environment increased susceptibility to harmful sexual behavior among the students, (Sweya, et al., 2016).

In Ghana a study conducted by, (Amoah et al., 2023) reviewed that there were low levels of modern contraceptive use among sexually active female youth aged 15 to 24 years despite effort of the government through the ministry of health service. This has led to negative impacts on adolescent sexual reproductive health. Most commonly used modern contraception methods were emergency contraception, oral contraceptive pills, condoms, injectable, calendar method, withdrawal, (coitus interrupters) and implants in order of priority. A study done in Kenya among adolescents and youth reviewed a gap in meeting reproductive health goals among 15 to 24 year old despite high demand of modern contraception methods. This age bracket suffers from inconsistent utilization of modern contraception, (Kungu, 2020).

1.2 Problem Statement

Despite provision of free regular and emergency contraceptives within institutions of higher learning, the number of unplanned pregnancies among female students continues to rise drastically. Majority of College students are sexually active with many of them having had previous sexual encounters and more than 67% having current sexual engagement (Huber, & Ersek, 2019). At Kenya medical training center, (KMTC), Thika, 70.4% of female students were reported as being sexually active, with quite a number not on any reliable contraceptive method, (Mwaura, 2018).

In Kenya, 30.7% of sexually active young women at the age of 20-24 are not on any form of modern contraception, Kenya demographic health survey, (KDHS, 2018).

This poses a danger of unintended pregnancies exposing youths to unsafe abortion. Majority of college students are within this age bracket. Current report from, (KDHS, 2022) indicate a 59% uptake of modern contraceptive method among women of all ages while traditional birth control was reported to be high among the unmarried than with the married. Total fertility is high among the age bracket of 15 to 19 at 73 births per 1000 women and at 179 per 1000.births among 20 t0 24 year olds. Fifteen percent, (15%) of adolescents aged 15 to 19 have experienced pregnancy while 12% have had a previous delivery, three percent were currently pregnant during the time of the survey and 1% had a pregnancy loss, (KDHS, 2022).

A study done in Ghana reported an alarming rate of unintended pregnancies occurring among the adolescents and youths worldwide. Twenty one million, (21M) pregnancy cases are reported yearly globally, close to half, (49%) of these are unintended and slightly more than half, (51%) of the pregnancy cases end up in induced abortions. In Africa, 46% of all cases of unintended pregnancies among the young population is an obvious indication of hindrances in the use of modern contraception and knowledge deficit on contraception which is influenced by age, education status, marital status and geographical location, (Atuhaire et al., 2021). In Tanzania unintended pregnancy among young women is of public concern. Almost one quarter of unintended pregnancies occur among adolescents and youth 15 to 24 years old due to none use of contraceptives, method failure, and inadequate knowledge and rape cases. Unintended pregnancies result in discontinuation of studies thereby making them unable to join job opportunities leading to poverty, (Tarimo et al., 2020).

In Ethiopia a recent study conducted on uptake of modern contraceptives among young women found that lack of utilization was attributed to perceived low susceptibility to pregnancy. This wrong perception makes them to deliberately not use the methods. Unintended pregnancies are of great public health concern due to risks of both maternal/neonatal mortality and morbidity which may be involved during child birth for adolescents/youths aged 15 to 24 years. This could further lead to unsafe pregnancy termination, maternal depressive disorder, emotional stress, poor prenatal/postnatal care and other maternal complications, (Alemu et al., 2023).

Adolescents and youth are facing many challenges on matters Sexuality and Health related to reproduction. Majority of them would like to avoid, delay or limit pregnancy but are not able to make decision regarding their reproduction, (Sexton et al. (2014). Majority of parents are of the opinion that giving Adolescents/youth information on contraception is encouraging immorality thereby making them uncomfortable with the topic. The peers and teachers have challenges giving sex education and information due to resistance from parents and religious groups, Ministry of health, (MOH, 2015). There has been increased prevalence of reproductive health challenges including untimed pregnancies among female students in all learning institutions country wide, .KMTC Thika, has in recent years experienced cases of unintended pregnancies with possibility of others going unreported and probably ending in secret abortion. This could be attributed to inadequate knowledge on modern contraception confounded by other factors. The effect of this has been extension of study period, extra burden on the student, parent, guardian and emotional trauma to the affected female students. KMTC Thika, was selected purposively to investigate reasons behind unintended pregnancies among college students during their course of study period.

1.3 Justification

The continued occurrence of unintended pregnancies during study period among female college students at institutions of Higher learning among them KMTC Thika prompted this research work which aims at finding out the contributing factors and way forward towards rectification. Thika KMTC is located in an urban set up with multiple industries and other higher learning institutions which constantly keeps the population soaring, this may expose young unsuspecting female students to sexual debut and increase in the likelihood of unintended pregnancies. Unsafe sex has its consequences and among them is unintended pregnancy; STI'S including the dreaded HIV infection and emotional / psychological trauma. Provision of timely reproductive health services that are youth friendly may avert many troubles to the youthful students who are vulnerable to these challenges due to peer pressure. Use of modern contraception with proper counseling on alternatives is the better option for students who are sexually active and those at risk of high risk sexual behavior due to

peer influence by colleagues at tertiary institutions of higher learning. Majority of female students are ill prepared with life skills which are necessary in decision making because of inadequate or total lack of transition programs to equip them to handle new challenges that are inevitable as they proceed from very restricted high school environment to almost care free environment with no rules to govern their moral behaviors among other things.

Kenya has in the recent years faced an alarming rate of unintended pregnancies in all levels of learning institution, a clear indication that an action plan need to be put in place. The aim of this study is to come up with strategies of improving compliance to reproductive health services by female students, more so on modern contraception which has other added advantages. The study sought to determine the level of contraceptive utilization and look for ways to increase usage by addressing the hindrances towards utilization. Factors that influence utilization will guide policy makers and stake holders involved in provision of youth friendly services. The results established level of knowledge and awareness and how it translates to utilization of modern contraception, ways of addressing the barriers and assessment of quality of information the students have on modern contraception and how this translates to attitude towards utilization. Central placement of KMTC students from one point country wide makes it an ideal representative population. Kenya medical training college trains the highest number of health care workers who are presumed to be well informed on the subject placing them at an advantage and yet still face similar challenges of unintended pregnancies like other none medical learning institutions. KMTC, Thika being a middle level training institution was used as a representative case.

In Kenya almost all public Universities have student health care centers that address the sexual and reproductive health needs of their students. Services offered in these health care centers, (clinics), include voluntary counseling and testing, (VCT) for prevention and treatment of, (Human immunodeficiency virus/Acquired immune deficiency syndrome HIV/AIDS, STI treatment, provision of modern contraception to include free dispensing of condoms placed in strategic areas for easy access and uptake, provision of emergency contraception and other regular contraception

methods, counseling and giving information on life skills to equip them with knowledge to face life challenges in a healthy manner and many more. This however does not result in automatic compliance and uptake of commodities due to other factors that hinder utilization of the mentioned services. Most KMTC students however do not have such centers because of their close proximity to Government health institutions which offer practical and skills based experience for their students. These institutions usually offer reproductive health services to all clients of all ages and majority of them lack youth friendly services which address reproductive health matters to young people in a friendly manner. This creates a gap of unmet RH needs because of lack of accountability and lack of responsible persons to directly deal with the issue of provision of sexual and reproductive health services to majority of the college population. This has resulted to reproductive health unmet needs which affect mostly the female students who are exposed to unintended pregnancy, STI'S, emotional and psychological trauma. At times even where the services are in close proximity utilization is not always guaranteed as there are other factors which hinder consumption. To be able to address this, the institution needs to put some structures in place to avert more cases. When this is addressed it will go a long way in ensuring sustainable development goals, (SDG) are met, these are SDG no 1, 3, 4and 5. Sustainable development goal no one and 4 is on eradication of poverty and achievement of quality education. By helping female students remain in school and preventing dropout rates this will ensure improvement and sustainability of high quality of life not only for the student but also for her family and community at large. Sustainable development goal 3 and 5will be positively influenced. This is on provision of good health and wellbeing and gender equality. Unintended pregnancy is a major contributory factor of unsafe abortion which can lead to maternal, neonatal, and infant and child mortality and morbidity and therefore stringent measures should be brought on board to avert it and timely provision of modern contraception is one of the best practices in managing youth sexual reproductive health.

1.4 Research Questions

1)What is the proportion of utilization of modern contraception among female college students, at KMTC, Thika?

2)What student related factors influence utilization of modern contraceptives among college female students, at KMTC, Thika?

3)What institutional related factors influence level of utilization of modern contraception among college female students at KMTC, Thika?

1.5 Main Objective of the Study

To investigate determinants of modern contraception utilization among the college female students at KMTC college, Thika

1.5.1 Specific Objectives

1)To determine the proportion of utilization of modern contraception among female college students, at KMTC, Thika

2)To identify student related factors influencing utilization of modern contraception among female students, at KMTC, Thika

3)To identify institutional related factors influencing utilization of modern contraception among female students at KMTC, Thika.

1.6 Study Hypotheses

H_{01}: There is no relationship between student related factors and utilization of modern contraception among female students at KMTC, Thika

H_{02}: There is no relationship between institutional related factors and utilization of modern contraception among female students at KMTC, Thika

1.7 Significance of the study

The aim of conducting this study was to identify gaps leading to unintended pregnancies and reasons behind underutilization of modern contraception among college female students during study period. Identification and addressing of the gaps

should take effect by informing youth sexual reproductive health policy makers who should come up with achievable and workable strategies to address the same. The study is to serve as a tool for peer reference and informing future research in the field of youth sexual and reproductive health.

1.8 Scope of the study

This analytical cross-sectional study was carried out within the premises of Kenya Medical Training College, Thika. Only undergraduate college female students and departmental heads were sampled to participate in the study. Data collection period was approximately one and a half months. Variables under investigation were level of utilization of modern contraceptive among female students, student related factors which were, social demographic factors, knowledge factors, social cultural factors and attitude factors. Institutional related factors were looked into where by departmental heads and female students gave their own opinion.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Contraception methods and factors contributing to their utilization were addressed. Theoretical and conceptual frameworks guiding the study are presented.

2.2 Contraception

This is enablement of pregnancy prevention by providing information on reproduction and methods of birth control. Contraceptives are identical to birth control and family planning. It can also be defined as technological approach meant to control biology by working contrary to normal processes of ovulation, fertilization and fertilization. Some examples of modern birth control methods include male and female condoms, oral contraceptive pills, intra uterine contraceptive device, injectable methods, (Felix et al., 2019). Almost everyone has some knowledge on contraception. Ninety five and ninety seven per cent of women and men respectively who are aged 15 to 49 years have knowledge of at least one modern method of contraception. Condoms and hormonal contraceptives such as pills and injectable forms are the most commonly known methods with 89% awareness level (KDHS, 2014). In Kenya, more than half, (60%), of modern methods are provided by Government facilities while 34% are provided by private medical sources with the rest being provided by other sources, (KDHS, 2018). Hormonal methods are highly effective but vary in terms of side effects associated with their use. Hormonal methods do not protect against infections which are sexually transmitted. Individuals prone to infections are therefore advised to use barrier methods for dual protection. Commonly available modern methods are pills, Injectable contraceptives, Implants, IUCD, Patch, and barrier methods. Emergency contraception pill (ECP) commonly referred to as morning after pill is used by women and girls to prevent pregnancy following unprotected sex. The sooner they are taken the more effective they are. On an average, they prevent 85% of pregnancies that would have otherwise occurred. The method is effective if prior knowledge and counseling is available. (MOH,

2016).Barrier methods prevent the conception by preventing the sperm and ova from meeting. The most commonly used are condoms, diaphragm and cervical cap (MOH, 2016).

2.3 Utilization of Modern Contraception among College Students

A study done in USA, University of North Carolina revealed that about 80%, sexually active students were not on any method and depended on natural methods like periodic sexual abstinence and withdrawal which had negative consequences including unwanted pregnancy and abortion; use of condoms reduced sexual pleasure resulting in poor preference. Majority of the women preferred long-acting reversible methods or the pill. In faithful relationships where the woman was using a non-barrier method for birth control, at times use of condom was important. Condoms were the most regularly used contraception, (Huber & Ersek, 2019). A study done in Cameroon showed that the most commonly used method of modern contraception was the male condom followed by the pills. It was stated that the major reason behind utilization was personal desire to use method and reasons for not utilizing was personal refusal to use methods. The commonest source of information was from the school and health care providers and the most commonly known modern contraception method was the male condom. Determinants of birth control methods were age, marital status, financial status, sexual union before age 15, having previous history of sexually transmitted infections, having one more pregnancies, previous abortion and having knowledge on modern contraception methods (Felix et al., 2019)

A study conducted in Brazil among undergraduate students showed that there is an association between gender and condom use with a lower degree of protection among females. Women were not empowered to make firm decisions concerning sexual health matters due to gender inequalities. To some extent, condom use among male students was equally low. This showed that both male and female undergraduate students needed negotiation skills and strategies to increase the likelihood of condom use. The second most preferred choice was hormonal contraceptives. Among those who were in stable relationships, focus was more on pregnancy prevention than HIV and STI transmission, this makes them more

vulnerable. Undergraduate without partners were likely to use condoms compared with the married or cohabiting. Extra marital sexual intercourse without condom use was common within the college premises. Majority of the undergraduate university students had sex before 18 years, (Moreira et al., 2018).

In Lesotho University studies found that at the age of 24, over 67% of young female college students were engaging in sex. Fifteen per cent, (15%) of them were already pregnant at the time the study was being conducted and only half reported ever using contraceptives, (Mookidi et al., 2012). In Durban a research conducted among higher education students confirmed that increasing uptake of emergency contraceptives would minimize unintended pregnancies and induced abortions. Recommendation to therefore increase utilization of emergency contraceptives was made to address the issue of unintended pregnancy among college students. Absence of prior information concerning the method has however led to underutilization of the same among the said female students, (Coetzee et al., 2015).

In Kenya there is high percentage of students who are sexually active however the percentage of contraceptive uptake is low, (Wangima, 2016). It has been found that; child bearing begins at an early age and is nearly universal. Figures show that approximately one –quarter of adolescents and youth have given birth by 18th year and almost half of them by20 years,(KDHS, 2014). A research conducted in Kenyatta University showed that only a small percentage, (12.7%) of college students utilize Youth Friendly Services which are offered within the college. Provision of modern contraception methods is one of the main services provided in the student clinic. This shows that close proximity of services does not always translate to use, (Wanjau, 2016).

2.4 Student Related Factors Influencing Utilization of Modern Contraceptives

2.4.1 Social Demographic Factors

A study done in Ethiopia reviewed that modern birth control methods play an important role in mitigating the effects of unintended pregnancies which can result from failure to utilize contraceptives. Modern contraceptives play an important role

of protecting the lives and improving the living standards of women and children. Unintended pregnancies could lead to unsafe abortion, economic implications and maternal mental health issues which would progress to stress and maternal depressive disorders thereby affecting the psychological wellbeing of the women and their children, (Kale et al., 2019)

Previous studies show that modern contraception usage is significantly associated with social demographic factors such as age, marital status, literacy level, partner approval, health care related issues, access to modern contraception and counseling services, post delivery services, attitude of the spouse or partner towards modern contraception and the employment status of the mother. Other contributing factors include knowledge of birth control methods and personal factors, (Kale, et al 2019).

Another study done in Mali showed that social demographic factors are significantly associated with utilization of modern contraception. These variables were: age, number of living children and marital status. It was observed that the level of usage was age dependent and that women who were below thirty five years of age were more likely to utilize modern contraceptives than those who were more than thirty five years. It was noted that single women were more likely to utilize modern contraceptives than those who were in stable unions or relationships. The rate of usage of contraceptives was high in women with three children or less and reduced in women with more than three. Level of knowledge determined utilization of modern contraception in that those who were knowledgeable in matters modern contraception had high levels of utilization than those with inadequate knowledge (Konate et al., 2021).

Malawi has one of the highest contraception prevalence rate, (CPR) among the sub Saharan African counties but still the country has high fertility and pregnancy rates among young women a prove of low consumption of modern contraception methods among the young women. Social demographic factors associated with utilization of modern contraception in Malawi include age, area of residence, marital status, level of education, employment status and religious affiliation, (Mundiwa et al., 2018).

In Kenya a study was done in Kabianga University to investigate factors leading to emergency contraception utilization among the university female students. Conclusion made was that there was a significant relationship between age factor and year of study and utilization of modern contraception. Most of the university female students were single and sexually active and preferred use of emergency contraception. More than a half of the respondents had knowledge on modern contraception, (Ngososei, 2022).

Another Kenyan study investigating determinants of modern contraception among 15 to 24 year old reviewed a gap in addressing matters reproductive health among young women who are mostly prone to inconsistent contraceptive use and have a high demand for the methods.. It was noted that social demographic factors of age, education status, religion and financial status were significantly associated with contraceptive utilization. Information on modern contraception and provision of services should be strengthened to enable them to and make informed choices on youth sexual and reproductive health. This will enable the youths to complete their studies and transition to other levels (Kungu et al., 2020)

2.4.2 Knowledge Factors

Knowledge on contraception is the amount of true information a youth has on available methods of contraception, correct use, advantages & disadvantages. There is little information on knowledge practices towards modern contraception, sexual and reproductive health among young college students. A study done in Uganda found that quarter of the university students have unmet contraception needs despite high awareness level. This shows that awareness of methods does not always lead to uptake. Knowledge, attitude and perception (KAP) on sexual and reproductive health may influence contraceptive uptake, (Nsubuga et al., 2016). Accessibility of contraceptive services has a great effect on uptake. Others are not well informed about various types of contraceptives and their mode of action. Appropriate counseling on side effects and how to manage them is wanting. This impedes utilization, (Apanga & Ayamba, 2014).

Contraceptive technology is a basic guarantee of health and development of young people which prevent avoidable health risks, and improvement of education opportunities and livelihoods. Unsafe sex has been rated as second most crucial risk factor affecting health globally. Disparities exist in different areas in Africa. Findings however show that cases of delayed marriage are on the rise in sub-Saharan region even though age at which sexual activity begin has remained low in most of the areas, (Sweya et al., 2016).

Majority of college students lie between the ages of 17–19 years. This is a time when they are more predisposed to engaging in illicit sexual relationships while having not enough knowledge on sexual health and how to protect themselves. This has been attributed to absence of sexual health information combined with absence of programs in institutions of learning which address sexual health at post primary level, compounded by inadequate knowledge on the part of their parents concerning sexual health that impede deliberation with their children. This lacks of information on sexuality make adolescents/youth susceptible during their transition period from a strict high school environment to a free University or college setting. In Tanzania, the levels of contraceptive uptake by university students stand at 41.5%.In Uganda and Ghana the rate is at 14.5% and 17.8% respectively. There is restricted Information on contraception utilization by young students due to social discrimination surrounding premarital use of contraception. Sexually active adolescents and youth therefore fear telling it to their parents (Sweya et al., 2016). Previous studies show a gap in bridging sexual reproductive health goals and needs of adolescents and youths who practice inconsistent use modern birth control despite great need to adhere, (Kungu et al., 2020).

A research study done in South Africa established that college students aged 20 to 24 years have one of the highest occurrences of unintended pregnancies resulting from failure of contraceptive uptake. Globally, several studies show that poor contraception knowledge may lead to an increase in unintended pregnancies, (Coetzee & Ngunyulu, 2015). In Nepal (India) a study showed that knowledge or awareness of contraception empower adolescents and youth to make informed choice and right decisions and avoidance of undue myths and misconceptions related to

utilization of contraceptives. Young people between 15-24 years with no formal education have six times higher chance of engaging in sexual relationships by 18 years of age and therefore fertility rate is inversely proportional to the level of education(Aquilar & Cortez, 2016); (MOHP, Nepal, 2011). A Kenyan study reviewed that adolescents and youths aged 15 to 24 years have a great risk for unintended pregnancy and face retention of users difficulties which is very important in sustenance of contraceptive prevalence rate, (CPR), (Kungu et al., 2020).

2.4.3 Socio-Cultural Factors

Poor communication networks between parents and their children resulting from the effect of urbanization has obliterated the strong rich education that used to be there traditionally. Sex and sexuality was discussed by grandparents and aunties. The created gap has therefore exposed the youth to sexually related hitches. Traditional teaching prohibits premarital sex and pregnancy. Youths found using contraceptives are punished thus instilling fear among them. Parents and caregivers have become too busy trying to make a living and meeting other social responsibilities. The result of this has been inadequate guidance and support to the young people making them unable to make important decisions in life which expose them to wrong advice and misinformation from their peers. Power inequalities which are gender based make it hard for the youth to say no to unprotected sex or even discussion on condom or use of contraception if the partner is unwilling (Senderowitz et al., 2013; MOH, 2013).

Social stigma surrounding sexuality and premarital sex discourage young people from seeking contraceptive services even where permission from parents is not necessary. Contraceptives may interfere with natural occurrences which are culturally accepted such as failure to menstruate which may discourage them from using some methods such as hormonal injectable contraceptives and implants which may have side effects of irregular bleeding, spotting or even absence of periods. In Kenya, it is hard to engage young unmarried people in matters touching on contraception due to religious attributes and cultural values which predispose young women to high risk of unintended pregnancy which may predispose them to seek abortion services for fear of societal victimization. In Uganda, regardless of

education level, socio cultural rules contribute to reduced levels of utilization of birth control, as females are not involved indecisions making concerning family-related matters including use of birth control, (Kayongo, 2013; Wangima, 2016; Sweya et al., 2016).

In Nepal (India), virginity before marriage is highly treasured for both gender even though it is more pronounced in girls than boys due to gender inequality. Despite this social obligation, sexual unions before marriage have been on the increase. The societal norm in this society is chastity for the unmarried; this has led to embarrassment and shame which discourages young people from seeking contraceptives and sexual reproductive health services. Premarital sex is highly restricted in Nepalese society which is meant to stress on the importance of virginity, (Emeana et al., 2014; Sexton et al., 2014).

In African societies, many youths and adults are ill prepared to handle issues that touch on sexuality. Issues of gender dictate that females are to submit to males who are presumed to be powerful, this may limit amount of health information reaching them, discourage interaction among young people which might promote harmful behavior among them in several ways. This may predispose them to risky behavior and susceptibility to sexual health threats which include sexual violence and exploitation, untimed pregnancy, unsafe abortion and sexually transmitted infections, (MOH, 2013). There is therefore great urge to move from fear inducing messages to the one of creating community acceptability of modern birth control methods which will make them achieve their goals, (Arlotti-Parish et al., 2023).

Previous studies have shown that when parents are free with their children on sexuality, use of contraception and pregnancy in a timely manner, these adolescents will have a high probability of delaying sexual debut and practicing safe sex by use of contraceptives. A study among 15-24 year old women in Israel showed that, good communication between mother and daughter is directly proportional to the increase in reliable means of contraceptives and decrease in elective abortion, (Simkhada et al., 2012). A study done by,(Arlotti-Parish et al., 2023) reviewed that adolescents

aged 15 to 19 who were using modern contraception were more likely to have obtained approval from their mothers and boyfriends.

2.4.4 Attitude and Perception Factors

The word perception describes how human beings think or feel about something or somebody, or how somebody understands the meaning of information sensed by them. These are values and beliefs formed by people which are grounded on the understanding of how things seem to look like. It is the immediate recognition or appreciation as moral. It is the mental impression about something. Perceptions are influenced by nature and amount of information available to a person and the extent by which they are able to correctly interpret the acquired information. To perceive is to notice or to become aware of something, to understand or think of something in a particular way (Kinaro, 2012).

Attitude is a "learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object, subject, situation, person, issue, idea, event or place" .The attitude that people form is affected by the person's beliefs about the attitude object and the amount and type of information the person has about the attitude object. Positive perception creates a positive attitude and negative perceptions create a negative attitude. Attitude is therefore one of the most important factors of peoples predisposition to respond. Shameful feeling associated with condom use significantly affects its uptake among the unmarried youth. Studies done in Uganda (Busia District) show that woman who use condoms are seen as immoral. Negotiating condom use with partner is considered as lack of trust, (Muneene, 2015; Kayongo, 2013).

The perception and attitudes of adolescents towards contraceptives depend on beliefs held. In Nepal, young people have the opinion that when they go for contraceptives in pharmacies or health facilities, they will be identified and information shared with their friends and kin. This makes them reluctant in seeking contraceptive services. There are a lot of misperceptions about contraceptives among the adolescents/ youth. A cross sectional study among urban school adolescent girls found that most of them think that contraceptive pills should be used by the married women and not

unmarried girls, yet others perceive that the oral contraceptive have protection against HIV infection. In Nepal it is difficult to discuss sexuality and contraceptive use within the family set up and therefore peers may be useful in influencing others concerning knowledge, perception and attitude towards contraception use. Adolescent girls are more open than their male counterparts on issues touching on sexual relationships and contraceptive use. Peers can therefore influence others to engage in sexual activities or use and disuse of birth control. Nepalese parents believe that it is inappropriate to engage young people in sex education for fear of encouraging sexual immorality (Himanshu, 2014; Adhikari & tamang, 2009; Acharya et al., 2009).

A study conducted by,(Kinaro, 2012) as quoted by, (Cherono, 2014), to examine perceptions that influence contraceptive uptake among adolescents showed that parents and Teachers had negative perceptions that discouraged utilization of modern contraceptives by adolescents thereby influencing uptake. Parental approval, self-approval, ability to obtain contraceptives, information on how to use and partner approval and communication all had a major impact on utilization of contraception.

2.5 Institutional Related Factors

College years are periods that usually introduce illicit drugs and alcohol to unsuspecting students who have never had previous experiences. Majority of them it is their first time they have left their homes and have come to an environment where there are no rules or consequences, thus predisposing them to unsafe sex. When this is combined with alcohol, and/or drugs it can lead to careless sexual experiences which again increase the probability of unwanted pregnancy and/or contracting sexually transmitted infections. By the virtue of college population being at a greater risk of encountering such situations, Institutions have the capacity to prevent this from happening by helping them to reexamine their thoughts and actions towards sex (Hogue et al., (2013).

In United States, unintended births account for nearly one in ten (10%) and a seven percent (7%), dropout rate among community college students. There is a significant number of unplanned pregnancies and child birth during study period. Sixty one

percent (61 %), of college students who deliver while in school do not complete their studies. Colleges should aim t achieving successful completion of school program by their students by ensuring delay in pregnancy and parenting is encouraged to avoid interference with education, (Storin et al., 2012).

In Ethiopia, the National Health Extension programs (HEP) was established to help all Ethiopians by establishing programs that promoted adolescent contraceptive use irrespective of marital status. This was prompted by increasing levels of unintended pregnancies, abortion cases and sexually transmitted infections among the youth. This led to introduction of comprehensive sexuality education in schools and several strings of youth friendly sexual and reproductive health clinics to provide services (Ochako et al., 2015).

In Kenya, reforms in the health sector have been rolled to address reproductive health concerns by giving information and providing available, accessible, affordable and acceptable services for all women including youth and adolescents without discrimination. These services are aimed at meeting unmet reproductive health needs. Educated youths are at an advantage of utilizing contraception services because of their ability to understand their sexual health needs (MOH, 2017; Obonyo, 2014; KDHS, 2018).

2.6 Theoretical Framework

2.6.1 Health Belief Model, (HBM) Modified

The study applied modified Health Belief Model. HBM is Health behavior change model which work by explaining and predicting behaviors that are health related especially in regard to consumption of Health Care Services. It was developed to help understand reasons behind failure of utilization of disease prevention strategies or use of screening tests which would help in early detection of preventable diseases. Health believe model demonstrate that individual's belief concerning their health problems will lead to either engaging or failure to engage in health promoting behaviors which is brought about by a trigger which result in particular action. The HBM is guided by two components of Health related behavior, deep desire to

prevent illness or undesired occurrence and deep conviction, (belief) that specific health actions have the ability to prevent or cure illness, For this study health actions should aim at preventing unintended pregnancy during study period. HBM is guided by several constructs which are:-

Perceived severity of health problem and potential consequences such as disability, loss, pain, and impact on future roles - If a health concern is considered to be fatal, this may trigger engagement in actions which will prevent the health problem from happening or mitigate the severity of the problem. Unintended pregnancy results in severe financial, psychological and social consequences. Female student may suffer from pain of having to defer studies to a later date.

Perceived susceptibility or risk of developing a health condition - HBM is of the view that individuals who are at risk of a particular health issue will be keen to engage in behaviors which will reduce risks of developing the same. When perceived severity is combined with perceived susceptibility the situation becomes a perceived threat. Perceived threat depends on knowledge about the health problem. If perceived threat is high it will lead to a high possibility of engaging in health promoting behavior. Sexually active female students who are not using contraceptives are more susceptible to unwanted pregnancies. This will trigger positive engagement of contraceptive uptake to prevent undue pregnancies.

Perceived benefits – This is prompted by taking actions concerning health problems which have advantage of reducing risk of illness. If a person believes that taking action will reduce susceptibility or seriousness of illness or condition will definitely increase compliance. Modern contraception provides a high degree of effectiveness in preventing conception when used consistently and correctly.

Perceived Barriers - This refers to obstacles to behavior change. A person may have a very strong conviction about health related behaviors which may reduce threat of a health condition but due to hindrances, is prevented from taking action. These barriers include high cost of contraceptives, side effects, myths and misconception surrounding use of contraceptives, cultural beliefs, inconvenient clinic hours, shame, stigma, pain and discomfort during initiation of method and emotional upset.

Modifying Variables affect health related behaviors indirectly - These are individual characteristics such as Demographic variables which include age, level of education, sex, ethnicity, religion, race among others. Psychosocial variables are social status, marital status, influence resulting from peer pressure, personality trait among others and finally structural variables which include prior knowledge about illness or condition,(previous history of unwanted pregnancy, sibling /friend/college mate who has fallen victim of unwanted pregnancy.

Cues to action are variables that trigger or prompt engagement in health promoting behaviors. These are internal cues which are basically physiological, like start of menarche which signifies danger of becoming pregnant if one engages in unprotected sex. External cues include information from others, (peers using modern contraceptive), media advertisement of modern contraceptive, (morning after pill) or information from health providers, friend or family member who conceived while in college, sibling or friend using contraceptives, health warning labels showing dangers of abortion or consequences of unprotected sex, public service announcement or public advocacy on adolescent/ youth reproductive health rights. Sexually active female students have a high chance utilizing modern contraceptives to avoid unwanted pregnancy.

Self- Efficacy involves individual's perception or competencies in making informed choices - It explains individual differences in decision making concerning health related problems. This will include informed choice about contraception uptake to prevent unwanted pregnancies by sexually active female college students.

2.7 Conceptual Framework

2.7.1 Borrowed from Health Belief Model

It shows the relationship between the independent variables: social demographic factors, knowledge factors, social cultural factors, attitude and institutional factors and the dependent variable which is the utilization of modern contraception. Intervening/confounding variables leading to utilization have been demonstrated.

Independent Variables, (student related /institution contributing factors)

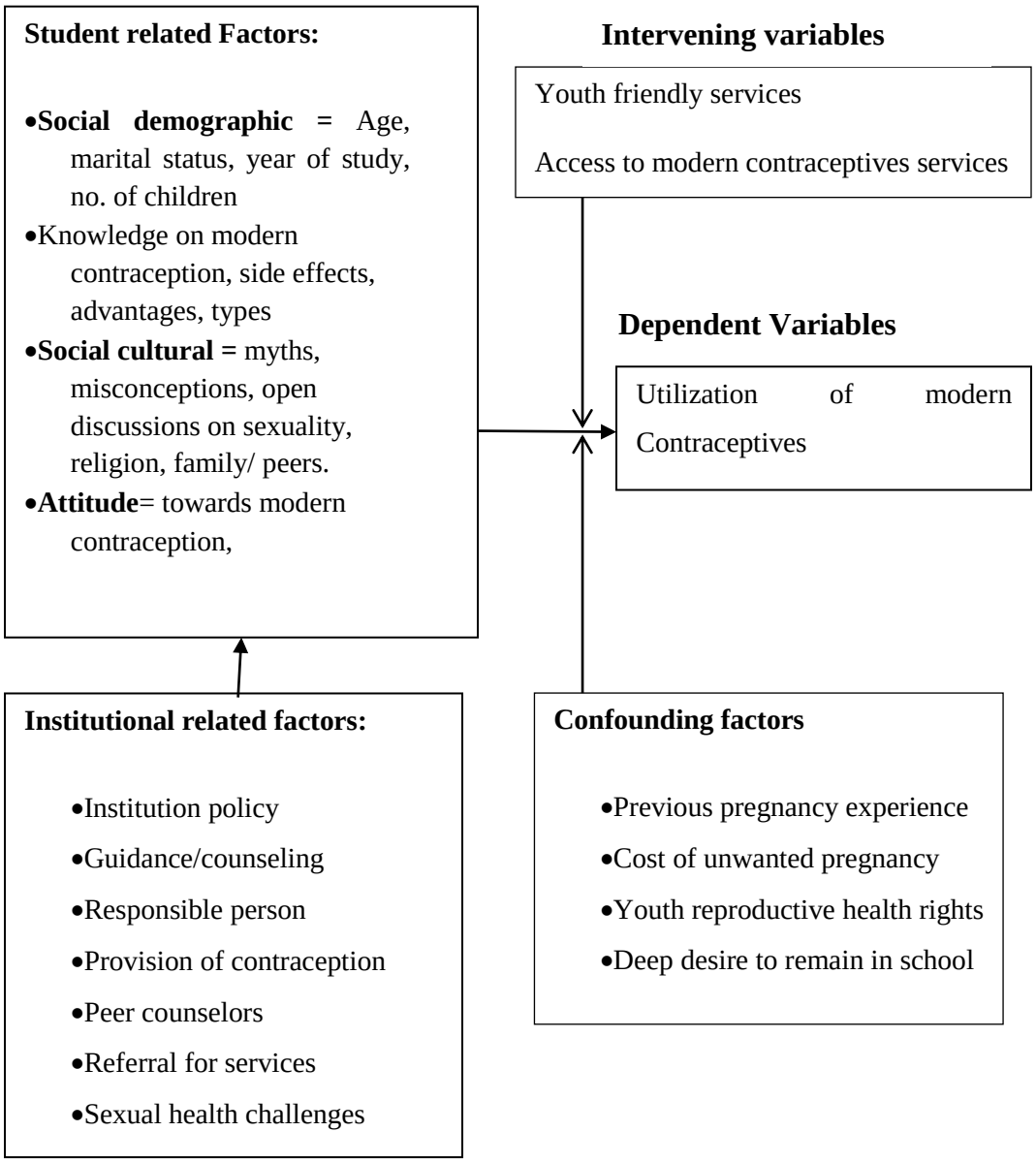

Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes in detail the research methods to include, research design, the study area, target population, sample and the sampling procedures, research instrument, data collection procedure, data analysis technique and ethical considerations.

3.2 Research Design

Analytical cross-sectional study design was applied to examine utilization of modern contraception among female college students and student/ institutional factors influencing uptake of modern contraception. This was done within a stipulated period of time after selection of study participants

3.3 Study Area

Kenya medical training college, Thika, was selected purposively due to cases of female students with unintended pregnancies during the course of their training period. KMTC, Thika is situated next to Thika Level 5, (TL5H), it is in Thika sub County and within the County Government of Kiambu. It was founded in the year 1969 with the aid of the Kenyan and the Norwegian Governments. Official opening of the institution was done on 16th day of November 1969 by His Excellency the late Mzee Jomo Kenyatta. The first class had only 30 female students all doing a certificate course in enrolled community nursing. The enrollment however continued to increase to about 40 to 50 students per annum. The institution currently has a total population of 925 students both male and female. Up to the year 1980 only female students were admitted but this changed to all gender. In 1990, the Nursing council of Kenya introduced the competence based curriculum and reduced the years of training to two and a half. In the year 1998, Kenya registered community nursing, an upgrading program was introduced, and this was followed in March 2016 by introduction of a diploma course in clinical medicine and surgery. In March 2014,

Nutrition and Dietetics certificate program began and in September 2016 diploma upgrading program commenced. Since the year 2017 expansion of various programs is ongoing to make the institution a multi faculty training campus. Population of female students under study was 525. Programs that are currently being offered include, Diploma in clinical medicine and surgery, Diploma in community health nursing, higher diploma in intensive care, higher diploma in anesthesia, Certificate in trauma and Orthopedic Technology, Diploma in Nutrition and Dietetics both pre-service and in-service. Short courses to be offered in the near future are Infection prevention and Control, HIV Training and Counseling Services, Nutrition in Critical Care for Health Profession Integrated. The campus plans to introduce new programs to include Higher Diploma in clinical medicine reproductive health, Higher Diploma in Family Medicine and Higher Diploma in Geriatric Nursing. Current student population is 900 plus. KMTC students are selected through central placement and students placed at random at various colleges within the republic. This results in selection of students from all the 47 counties which makes it a good countrywide representative case.

3.4 Study Population

The college has a population of 525 female students enrolled for various programs within the institution. Majority of them range from 17 to 24 years and belong to the category of direct entry. The rest of the students have enrolled for either in- service program, upgrading from Certificate to Diploma or post graduate higher Diploma program. In this group there are clinical officers undertaking Anesthesia and Reproductive Health which takes 18 months to complete. The nurses have one post graduate Diploma course for intensive care and it goes for one calendar year. Undergraduate female students from all faculties were eligible for inclusion in the study irrespective of age or year of study. The dean of students as the lead person and departmental heads-nursing, clinical medicine, nutrition and trauma and orthopedic department were included.

3.5 Eligibility Criteria

3.5.1 Inclusion Criteria

Those who participated were female students willing to give a voluntary written consent to participate.

Female college students who were underage and had signed assent forms by their parents or guardians allowing them to participate in the study.

3.5.2 Exclusion Criteria

Higher national diploma female college students

Students on external attachments away from college

3.6 Variables

3.6.1 Dependent Variable

Utilization of modern contraception methods

3.6.2 Independent Variables

Student factors- social demographic factors, knowledge factors, social cultural, attitude.

Institutional factors- Policy on adolescent/ youth sexual reproductive health for female students, guidance and counseling services available, provision of contraception methods, referral for services and responsible person.

3.7 Sample Size Determination

3.7.1Female students

Fishers et al., 1998 formula was used as indicated below.

$$n = Z^2 p q /d^2$$

Where

n =desired sample size

z =standard normal deviation, at a confidence interval of 95% (1.96)

p = proportion of population with similar characteristics being measured. Contraceptive prevalence rate among the youth in Kenya was 22% (KDHS, 2014).

P = 0.22

q = (1- 0.22) = 0.78

d = level of desired accuracy which is at 0.05/margin of error

n = 1.96^2 multiplied by 0.22 times 0.78/ (0.05^2)

n=263.687

n=264 calculated sample size

3.7.2 Key informants, (dean of students, and heads of departments)

Selection of key informants was done purposively to obtain data on institutional factors influencing modern contraception utilization and therefore selection of the dean of students and four heads of department was done from each department from where study participants were to be drawn. Those departments were nursing, clinical medicine and surgery, nutrition and die tics and orthopedic technology departments.

3.8 Sampling Method

3.8.1 Recruitment procedure.

Stratified Random Sampling was applied in selecting participants, from all female students. This was done by grouping the study population according to the faculties, that is Nursing, clinical medicine, nutrition, and Trauma and Orthopedics. This was followed by categorizing, (strata) each faculty into first year, second year and third year e.g. first year nursing , nutrition and clinical medicine, Second year nursing , nutrition and clinical medicine and finally third year nursing, nutrition and clinical medicine. Trauma and Orthopedic technician students were classified into two strata, first and second years. This was made up of a total of 11 strata. (nf) was calculated guided by the number drawn from each stratum. The total number of female students within each group was to form the, ((N), the formula was N/nf multiplied by 100. NB, the sum of this was to add up to, (nf).

Convenience sampling method was used to recruit study participants. The number of participants per each group depended on the proportionate numbers in each stratum i.e. if a class was large it had more members participating. For the key informants, selection of study participants was purposive meaning selection was based on the areas of interest and these areas were the administration and the four faculties of nursing, clinical medicine, nutrition and orthopedic trauma. This exercise took place within one and a half months to allow almost everyone to be captured. Participants were allowed to be left with the questionnaires for filling in during their own free time and then pick them later. Recruitment of study participants was done by principal investigator but issuance of consent forms and questionnaires was done with the help of study assistant.

3.8.2 Female Students

Table 3.1: Showing female students

Faculty	First Year	Second Year	Third Year
Nursing	92(37)	95(50)	90(44)
Clinical Medicine	40(30)	30(8)	35(21)
Nutrition	40(30)	20(9)	15(4)
Ortho. Technician	30(14)	40(14)	

3.8.3 Key Informants

Table 3.2: Showing Key informants

Faculty	No of Participants
Administration (Dean)	1
Nursing Department	1
Clinical Medicine Department	1
Nutrition/Dietic Department	1
Orthopedic Trauma Department	1

3.9 Data Collection Instrument

A researcher administered questionnaire was used to obtain quantitative data using structured and unstructured researcher administered questionnaire to obtain Information from female students. Departmental heads and dean of students were interviewed to obtain Information on institutional factors that have been put in place to cub unintended pregnancies were therefore obtained.

3.10 Pretesting of Study Tools

Data collection tool was pre tested at Mwingi KMTC. Twenty six (26) female students were interviewed which represented a 10% proportion of the sample population for the study. Two head of faculty and two class tutors were interviewed for the department of Nursing and Clinical medicine. Pretesting was done by chief investigator and necessary changes incorporated in the study tool. Pretesting was done to ensure validity and reliability of the data collection tool. Validity has also been assessed by comparing study results with those done elsewhere and the similarities are obvious, by ensuring data collection was done rightfully and also during data entry, cleaning and reporting.

3.11 Training of Research Assistant

This study utilized one research assistant; her training was done prior to data collection. This was to ensure that she was at bar with all the expectations of the principal investigator. She was tasked with administering consent forms to female college students eligible for the study and making clarifications to areas of concern and issuance of the questionnaires to the female students during data collection period and collecting back the questionnaires after they were filled. Her qualifications were Kenya registered community health nurse and she was familiar with data collection having done research paper as a requirement before completion of her study period.

3.12 Data Collection Procedure

This was done by seeking audience with the principal of KMTC, Thika in order to introduce myself and the purpose of the study. The research assistant who was a (qualified-KRCHN, received prior instruction on how to carry out the procedure of distributing the consent forms for signing first before giving out the questionnaires to the female students for filling. This was to ensure that consenting and filling in of the questionnaires was done simultaneously for the purpose of saving time and avoidance of re-tracing of respondents. The purpose of the research was clearly explained to them to clear doubts or suspicion.. Administration of questionnaires and

getting of consent was done while students were either in their classrooms or within the school compound as they continued with their studies and discussions. Others were in their placement areas at Thika level 5 hospital. Time taken to fill the questionnaire was between 20 to 30 minutes. Departmental heads were issued with an open ended structured questionnaire after being requested to consent. The answers were given in narrative form. This was to enable assessment of institutional factors promoting or hindering contraceptive utilization among female college population. This involved the dean of students and four departmental heads. The selection of departmental heads to participate in the study was done purposively. Data was continually checked throughout data collection period to ensure accuracy and completeness. Numbering of all questionnaires was done daily before storage in safe custody to enhance accountability and confidentiality.

3.13 Data Analysis

As soon as raw data was obtained it was followed by categorization of the same into open versus closed ended. At this point quantitative data, (closed/open ended) was coded first and analysis done using SPPS version 26. For the open ended questions survey coding was done by identifying commonalities and sorting them into categories, (code) which is used to turn qualitative data into quantitative. This was followed by tabulation of the information obtained and using Chi square know the association or the relationship between the study independent variables and the dependent variable which in our case is utilization of modern contraception by female college students at KMTC, Thika. Significance level required was 0.05. Odds Ratio was used to show direction of association between the independent and dependent variables. Multivariate logistic regression was done to control for confounders. Information obtained was displayed in form of tables, use of bar graphs, pie charts. All filled questionnaires obtained together with signed consent forms have been kept in safe custody for a period of not less than two years just in case someone in future may want to verify the authenticity and originality of the research work. Variables tested were level of utilization, social democratic factors, knowledge factors, social cultural factors, attitude factors and institutional factors

3.14 Ethical Consideration in Research Involving Human Participants

Ethical clearance was given by Ethics Review Committee of Kenyatta National Hospital / University of Nairobi, (UON/KNH), National Council of Science and technology (NACOST) and director of KMTC, Nairobi, Kenya. Research ethics was observed by obtaining written consent from all participants and departmental heads.. Female students who are underage were issued with assent forms to be signed by their parents or guardians as stipulated by law before they are allowed to take part in the study. It was being clearly explained that the study was only for academic purposes and participants may withdraw from the study at any point without any consequences whatsoever. Study respondents were not to be coerced into participating if they were unwilling. Benefits and findings shall be communicated back to the college administration and participants which will involve addressing the gaps in contraceptive uptake among female students and advise policy makers to come up with guidelines on how to address the issue. All participants will remain anonymous to maintain confidentiality.

3.15 Dissemination Strategy

Study findings will be disseminated through several ways. A copy of the thesis will be handed over to JKUAT Board of post graduate studies repository. Study findings will be published in a peer refereed journal for reference globally. Findings will be presented locally in conferences and seminars and finally a copy will be handed over to the management of KMTC, Thika to address identified gaps in meeting sexual reproductive health concerns of female college students.

3.16 Study Assumptions

The researcher assumed that participants gave honest responses.

The researcher assumed that data collected was a representative of the real situation at KMTC institutions countrywide.

The researcher assumed that post graduate students understood their reproductive health needs including use of contraception because of their exposure during their previous college years, work experience and marriage life.

CHAPTER FOUR

RESULTS

4.1 Introduction

The study sought to determine factors influencing utilization of modern contraception methods among college female students based at Kenya Medical Training College (KMTC) in Thika Campus. The specific objectives that were evaluated included the level of utilization of modern contraception, student related factors and institutional contributing factors. A total of 264 participants were required, 261 questionnaires were completed fully and returned for analysis representing a 99% response rate.

Table 4.1: Socio -Demographic Characteristics

Socio-demographics	Frequency (n)	Percentage (%)
Age		
17-24	194	74
25-30	59	23
31-35	8	3
Total	261	
Marital status		
Single	205	78.5
Married	46	17.6
Cohabiting	9	3.4
Divorced	1	0.4
Total	261	
Religion		
Muslim	21	8
Christian	239	92
Others	1	0
Total	261	
Specific Christian religion		
Protestant	73	28
Catholic	100	38
Pentecostal	46	18
Seventh day	30	11
Others	12	5
Total	261	
Faculty		
Clinical medicine	56	21
Nursing	134	51
Nutrition	32	12
Orthopaedic trauma	39	15
Total	261	
Year of study		
First year	111	43
Second year	81	31
Third year	69	26
Total	261	
Number of children		
None	190	73
Pregnant	2	1
One	55	21
More than one	14	5
Total	261	
Residence		
College hostels	94	36
Off campus	167	64

4.2 Proportion of Utilization of Modern Contraception among Female College Students

4.2.1 Current Use of Contraceptive

The ascertainment of current use of contraceptive as shown in Figure 4.1 revealed that, 26% (n = 68), of the respondents were currently using contraceptives.

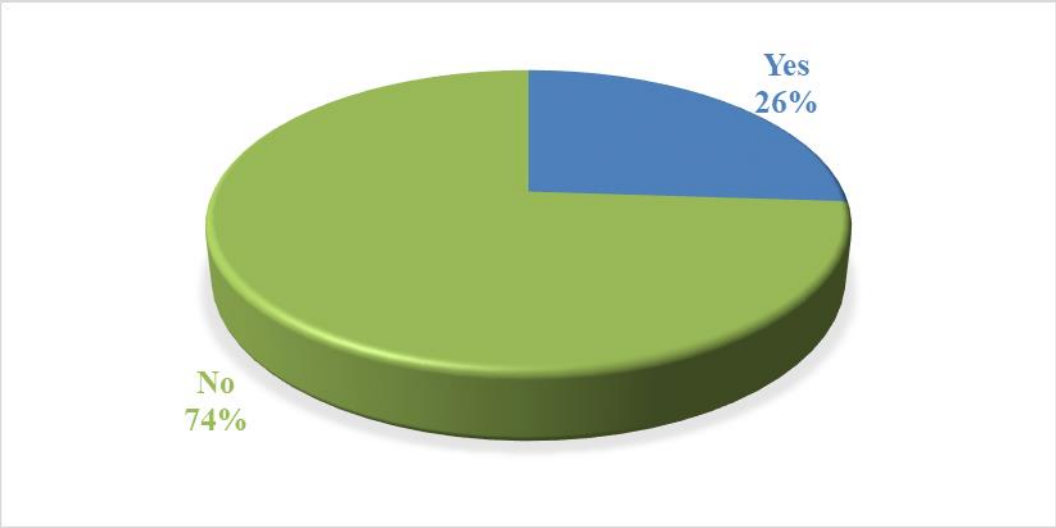

Figure 4.1: Current Use of Contraceptives among Respondents

4.2.2 Proportion of Utilization of Modern Contraceptives as Per Type (n =68)

The findings showed that half of those who were currently on contraceptives 50% (n =34) were on jadele, 29% (n =20) had oral contraceptives while 12% (n =8) were on IUCD and 9% (n =6) as shown in Table 4.2.

Table 4.2: Proportion of Utilization of Modern Contraceptives as Per Type

Modern contraception	Frequency	Percentage of utilization (%)
Jadele	34	50
Oral contraceptives	20	29
IUCD	8	12
Condoms	6	9

4.2.3 History of Contraceptive Use

In investigating history of contraceptive use, (n =120), 46% stated having used contraceptive as shown in Figure 4.2.

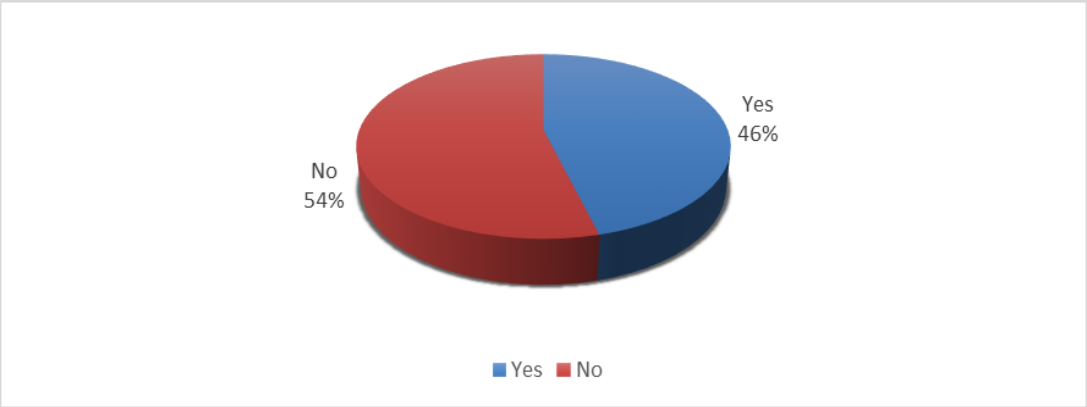

Figure 4.2: History of Contraceptive Use among Respondents

4.2.4 Source of Contraceptives

The results showed that, 83% (n =100), of those that had ever used contraceptives obtained them from MCH/FP clinic, 15% (n = 18), obtained them from chemist and 2% (n = 2) from friends as presented in Figure 4.3.

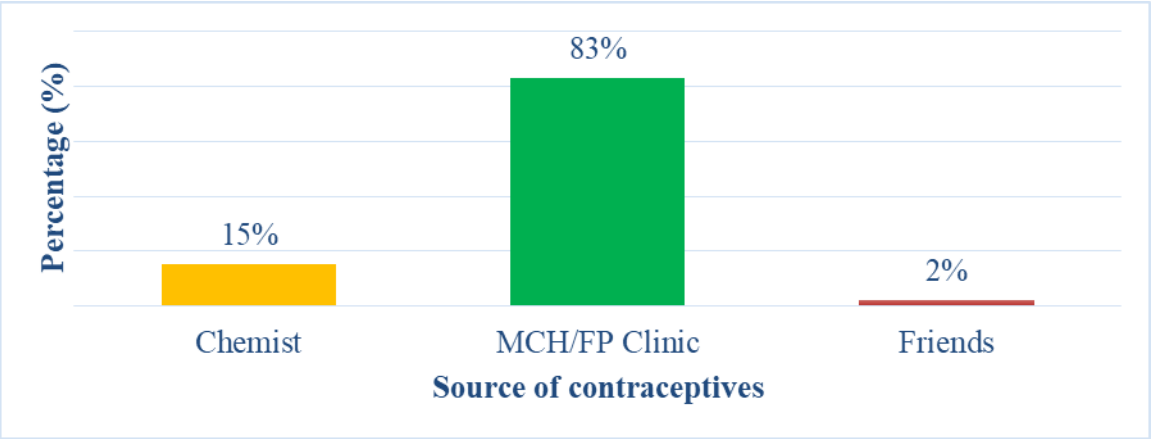

Figure 4.3: Source of Contraceptives

4.3 Student Related Factors Influencing Utilization of Modern Contraceptives

4.3.1 Socio-Demographic Factors

The findings showed that74% (n =194), of the respondents were aged between 17 and 24 years 79% (n =205), were single, 92%, (n =239), were Christians with 38% (n =100), being catholic. In investigating faculty 51% (n =134), were from nursing faculty, 42% (n =110), were in their first year of study. Majority of the respondents, 73% (n =190), did not have any children, 64% (n =167), resided off campus as shown in

A chi-square test for association was conducted to investigate factors associated with utilization of modern contraceptive methods among the college female student;. The findings revealed that, age, $\chi^2(3) = 36.204$, $p<0.001$, marital status, $\chi^2(3) = 34.579$, $p<0.001$, year of study, $\chi^2(3) = 6.132$, $p=0.047$ and number of children, $\chi^2(3) = 37.390$, $p<0.001$ were significantly associated with utilization of contraceptives among college students as shown in Table 4.3.

Table 4.3: Socio-Demographic Factors Associated with Contraceptive Utilization among College Students

	Utilization of Contraceptive				
	Yes n (%)	**No n (%)**	**χ^2**	**Df**	**p-value**
Age					
17-24	32(17)	162(83)			
25-30	31(53)	28(47)	36.204	3	p<0.001
31-35	5(63)	3(37)			
Marital status					
Single	39(19)	166(81)			
Married	27(59)	19(41)	34.579	3	p<0.001
Cohabiting	1(11)	8(89)			
Divorced	1(100)	0			
Religion					
Muslim	2(9)	19(91)			
Christian	66(28)	173(72)	3.841	4	0.428
Others	0	1(100)			
Year of study					
First year	25(22)	86(78)			
Second year	17(21)	64(79)	6.132	2	0.047
Third year	26(38)	43(62)			
Number of children					
None	31(16)	159(84)			
Pregnant	0	2(100)			
One	30(55)	25(45)	37.39	3	p<0.001
More than one	7(50)	7(50)			
Residence					
College hostels	21(22)	73(78)	1.051	1	0.19
Off campus	47(28)	120(72)			

4.4 Knowledge Factors Influencing Utilization of Modern Contraceptives

4.4.1 Knowledge of any one Contraceptive Method

The findings revealed that, 90% (n =238), of the respondents were aware of at least one method of contraception as shown in Figure 4.4.

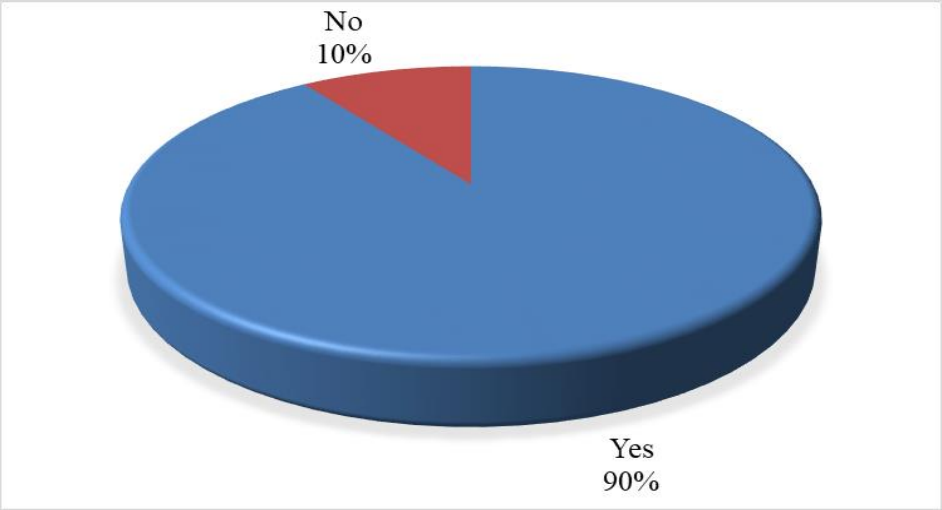

Figure 4.4: Awareness of any Contraceptive Method

4.4.2 Source of Knowledge of Contraceptive Use

In investigating source of awareness of contraceptive use, 42% (n =98), cited from lectures in class, 29% (n =66) stated from clinic or hospitals as shown in Figure 4.5.

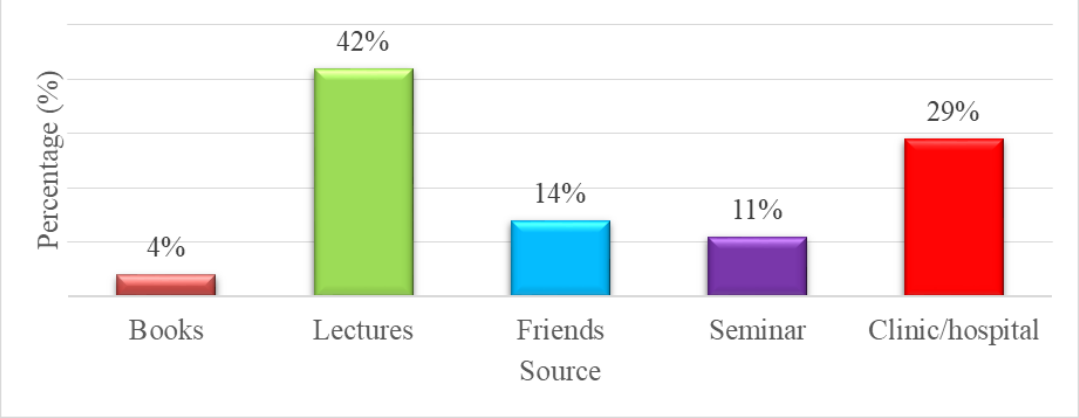

Figure 4.5: Source of Awareness of Contraceptive Use among Respondents

4.4.3 Knowledge of other Pregnancy Prevention Methods

The results as shown in Figure 4.6 identified that, 67% (n =176), of the respondents cited abstinence as pregnancy prevention method, 24% (n = 63), identified natural family planning, (n =16), 6% stated fertility awareness while, 3% (n =8), were identified vasectomy as other family planning methods.

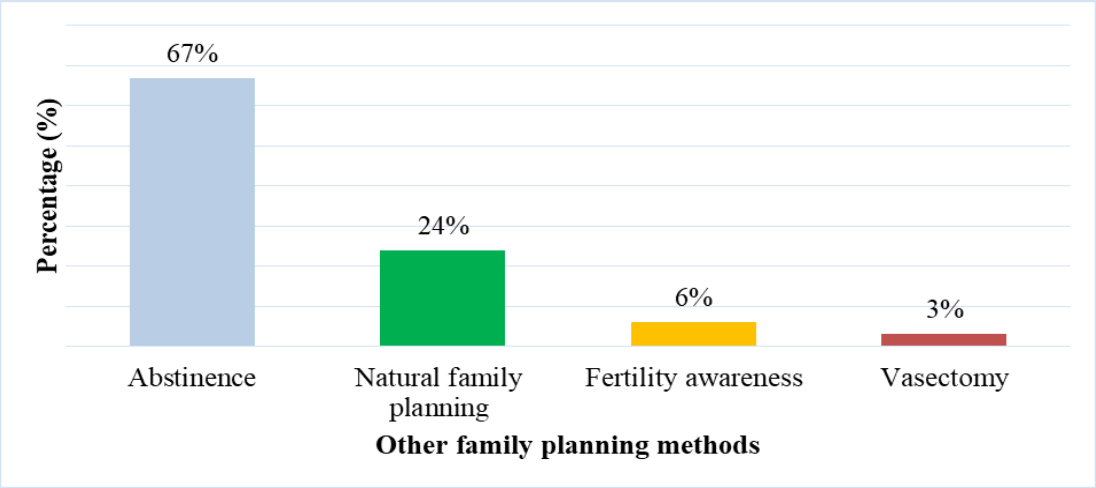

Figure 4.6: Knowledge of other Prevention Methods

4.4.4 Knowledge on the Side Effects of Contraceptive Use

The respondents were also asked about their knowledge on side effects of contraceptives, .62.5% (n =163), identified weight gain,22% (n =57), cited hormonal imbalances while, 14% (n =37), stated abdominal pain while1.5% (n =4), cited others as major side effects of contraceptive use as shown in Figure 4.7.

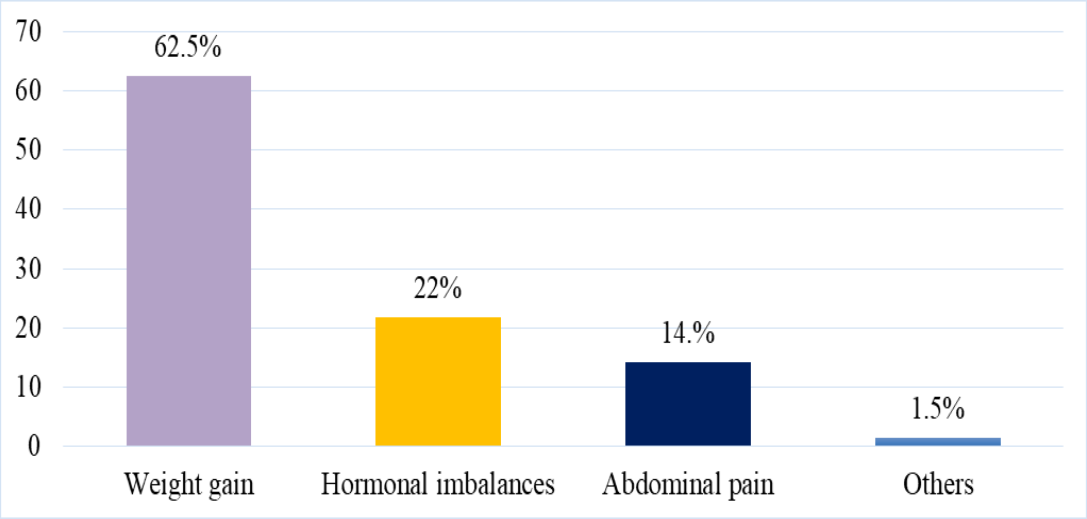

Figure 4.7: Knowledge on the Side Effects of Contraceptive Use

4.4.5 Knowledge on the Impact of Unwanted Pregnancy

The results revealed that, 39% (n = 100), cited that delayed college completion was the most significant impact of unwanted pregnancy. Others included, 35% (n = 89), who cited college discontinuation, 20% (n =50), stated increased cost of upkeep of both self and baby as shown in Figure 4.8.

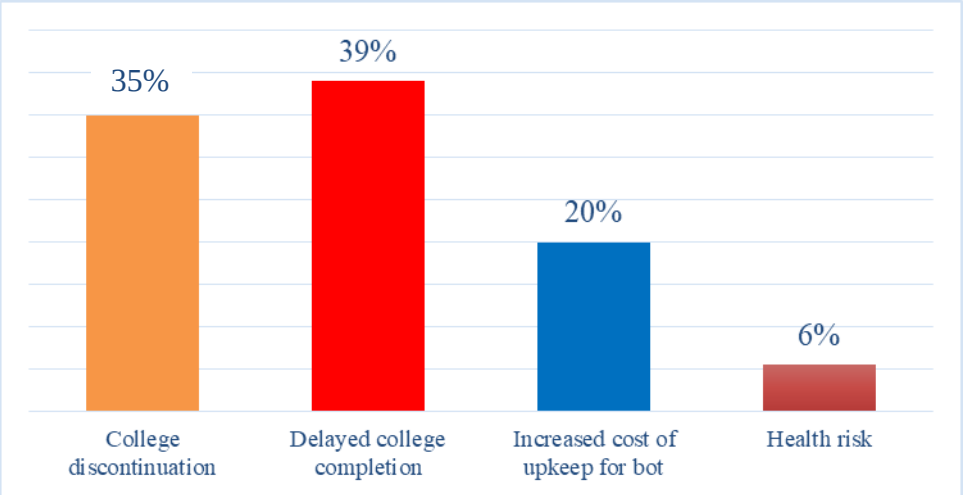

Figure 4.8: Knowledge on the Impact of Unwanted Pregnancy

4.4.6 Knowledge of Myths and Misconception on Contraceptive Use

The findings revealed that, 70% (n =184), of the respondents knew myths and misconceptions surrounding contraceptive use while, 30% (n= 77), didn't know. The key myths and misconceptions that were identified include infertility, birth defect and cancer as shown in Figure 4.9.

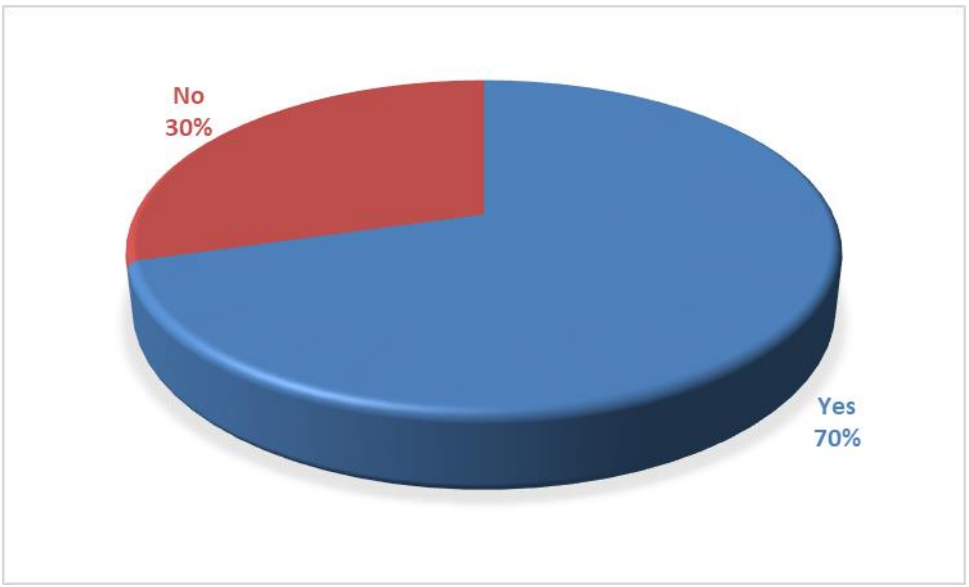

Figure 4.9: Knowledge of Myths and Misconception on Contraceptive Use

4.4.7 Knowledge Factors Associated with Utilization of Modern Contraceptives among Female Students

The findings as shown in Table 4.4 revealed that, knowledge of modern contraceptives, $\chi^2(1) = 4.179$, $p=0.028$), awareness of any contraceptive method, $\chi^2(1) = 2.834$, $p=0.006$), history of contraceptive use, $\chi^2(1) = 48.334$, $p<0.001$) were significantly associated with utilization of contraceptives among female students.

Table 4.4: Knowledge Factors Associated with Utilization of Modern Contraceptives

Knowledge of factors	Utilization of Contraceptive			
	Yes	No	χ^2	P-value
Knowledge of modern contraceptives				
Yes	65(95.6)	167(86.5)	4.179	0.028
No	3(4.4)	26(13.5)		
Knowledge of other pregnancy prevention methods				
Abstinence	38 (55.9)	136(70.5)		
Natural family planning	15(22.1)	48(24..9)	1.989	0.511
Fertility awareness	10(14.7)	6(3.1)		
Vasectomy	5(7.3)	3(1.5)		
Knowledge of myths and misconceptions				
Yes	61(33.2)	123(66.8)	3.112	0.007
No	7(9.0)	70(91.0)		
History of contraceptive use				
Yes	55(46)	65(54)	48.334	p<0.001
No	13(9.2)	128(90.8)		
Knowledge of effects of engaging in pre-marital sex				
College discontinuation	26(29.2)	63(70.8)		
Delayed college completion	24(24)	76(76)		
Increased cost of upkeep	13(26)	37(74)	1.189	0.88
Health risk	3(21.4)	11(78.6)		
Others	2(25)	6(75)		

4.4.8 Socio Cultural Factors Influencing Utilization of Modern Contraceptives among College Students

The findings as shown in Table 4.5 revealed that, 43% (n =111), of the respondents share/discuss their sexual issue with their friends. In assessing community perception on pre-marital sex, 35% (n = 91) asserted that community view premarital sex as immoral, 66% (n =174), of the respondents stated that contraceptive use was very common. More than half of the respondents, 52% (n =137), asserted that their religion does not prohibit contraceptive use while, 85% (n =223), agreed that open discussions increased utilization of contraception. On how easy it was discussing sexuality/ contraceptive use within their community, 75% (n =95), responded by saying that it was difficult while, (n=9) representing 15% said that it was very difficult. Community view of unmarried girls getting pregnant, 53% (n=69), responded by saying that these girls were viewed as immoral while, (n=45) said that it was viewed as a sign of sexual irresponsibility among the girls.

Table 4.5: Socio Cultural Related Factors among College Students

Social cultural factors	Frequency	Percent
Share/discuss sexual issues		
Mother/Sister/sibling	63	24
Spouse	49	19
Friends	111	43
Extended family	4	2
Nobody	34	13
Community perception of pre-marital sex		
Sin	30	11
Crime	91	35
Abomination	27	10
Immoral	91	35
I am not sure	22	8
Commonality of contraceptive use among unmarried youths		
Very common	174	67
Not very common	75	29
Not sure/I don't know	12	4
Does religion prohibit modern contraceptive use?		
Yes	111	43
No	137	52
Not sure	13	5
Open discussions increase uptake?		
Yes	223	85
No	38	15
Ease in discussing issues of sexuality/contraception in your community		
Very easy	11	4
Easy	67	26
Difficult	151	58
Very Difficult	32	12
Community view on unmarried girls getting pregnant		
Immoral	169	65
Irresponsible	67	26
Uncultured	25	9
Engaging in pre-marital sex		
Yes	176	67
No	85	33

4.4.9 Social Cultural Factors Associated With Utilization of Contraceptives among Female Students

The results as shown in Table 4.6 established that, discussion on contraceptive use with guardian/parent, $\chi^2(1) = 4.222$, p=0.028) and perception of having open discussion increase uptake, $\chi^2(1) = 4.432$, p=0.008), were significantly associated with utilization of contraceptives among female students.

Table 4.6: Association between Cultural Factors and Utilization of Contraceptives

	Utilization of contraceptive use				
Cultural factors	**Yes n(%)**	**No n(%)**	**Df**	**Chi square**	**P-value**
Community perceptions of pre-marital sex					
Sin	8(11.8)	22(11.4)			
Crime	22(32.4)	69(35.8)	4	4.986	0.289
Abomination	5(7.4)	22(11.4)			
Immoral	30(44.1)	61(31.6)			
I am not sure	3(4.4)	19(9.8)			
Commonality of contraceptive use among unmarried youths					
Very common	41(60.3)	111(57.5)			
Common	20(29.4)	55(28.5)			
Not sure/I don't know	2(2.9)	10(5.2)	4	1.688	0.793
Not common	0	3(1.6)			
Not very common	5(7.4)	14(7.3)			
Religion prohibit modern contraceptive use					
Yes	34(50)	77(39.9)			
No	31(45.6)	106(54.9)	2	2.101	0.35
Not sure	3(4.4)	10(5.2)			
Discussing contraceptive issues with parents/ guardian					
Yes	39(57.4)	81(42.0)			
No	29(42.6)	112(58.0)	1	4.222	0.028
Open discussions increase uptake					
Yes	62(91.2)	161(83.4)	1	2.432	0.008
No	6(8.8)	32(16.6)			
Engaging in pre-marital sex					
Yes	52(30)	124(70)	1	3.58	0.041
No	16(18)	69(82)			

4.4.10 Attitude on Modern Contraceptives among College Students

Perception and attitude of respondents in relation to contraceptive use was investigated, the findings showed that, 72% (n =187) disagreed with the statement that they are ashamed of using modern contraception, 60% (n =155) agreed that they have strong preference for modern contraception. One forty three, (n = 143), 55%, disagree d with the statement that thy disliked modern contraceptive. Majority agreed that modern contraceptive are good for the youths, (n=192), 73%, all of these statement indicate a positive perception resulting in positive attitude towards modern contraception. Similarly, 85% (n =221) asserted that their peers have a lot of influence concerning use of contraceptives as shown in Table 4.7.

Table 4.7: Perception and Attitude among College Students

	SA (1) n(%)	A (2) n (%)	N (3) n(%)	D(4) n (%)	SD(5) n(%)	Mean	SD
I dislike modern contraceptives	32(12)	33(13)	53(20)	66(25)	77(30)	3	1.355
Have strong preference for modern contraception	72(28)	83(32)	67(26)	25(9)	14(5)	2	1.137
I am ashamed of using modern contraceptives	19(7)	18(7)	37(14)	86(33)	101(39)	4	1.205
Contraceptives are for married people	43(17)	36(14)	28(11)	70(27)	84(32)	3	1.471
Information on side effects has affected decision making	51(20)	74(28)	57(22)	49(19)	30(12)	3	1.286
Myths and misconceptions on contraceptives discourage me	36(14)	46(18)	37(14)	78(30)	64(24)	3	1.379
Use of modern contraceptives by youths should be kept top secret	30(12)	21(8)	23(9)	75(29)	112(43)	4	1.361
I believe modern contraceptives are good for youths	121(46)	71(27)	37(14)	14(5)	18(7)	2	1.203
Peers have a lot of influence concerning use of contraceptives	131(50)	90(35)	23(9)	14(5)	3(1)	2	0.915
Positive/negative perceptions affect modern contraceptive utilization	113(43)	108(41)	25(10)	5(2)	10(4)	2	0.959

4.4.11 Association between Attitude on Modern Contraceptive and Utilization of Modern Contraception among College Students

The findings from the analysis revealed that there was significant difference in attitude score between college students and utilization of contraception, ***t* (1) = 1.994, *p*=0.048**. Respondents who were currently using contraceptives had higher attitude score **(M =38.46)** compared to **(M =37.02)** among respondents who were not using modern contraceptive currently as shown in Table 4.8.

Table 4.8: Association between Attitude on Modern Contraceptive and Utilization of Modern Contraception among College Students

		N	Average attitude score	t-statistic	P-value
Utilization of contraceptive	Yes	68	38.46	1.994	0.048
	No	193	37.02		

4.5 Institutional Related Factors Influencing Utilization of Modern Contraception among College Female Students at KMTC

The results as presented in Table 4.9 have revealed that, 39.8% (n =104), of the respondents identified fear of being exposed as the main sexual health challenge when seeking reproductive health in the institution, 81.2% (n =212), agreed that there were un-intended pregnancies in college. Further, 83.1 (n =217), affirmed that there were institutional policies to address reproductive health in the institution, 36.4% (n=95), of the respondents stated that they have never sought reproductive health counseling. In investigating whether there were peer counselors, 90% (n =235), of the respondents affirmed that they are present in the institution.

Table 4.9: Institutional Related Factors Influencing Utilization of Modern Contraception among College Female Students at KMTC

Institutional factors	Frequency (n)	Percentage (%)
Sexual health challenges in seeking reproductive health		
Privacy concerns	94	36.0
Fear of being exposed	104	39.8
I don't know	63	24.1
Presence of un-intended pregnancies in college		
Yes	212	81.2
No	49	18.8
Presence of institutional policies to address reproductive health		
Yes	217	83.1
No	44	16.9
Sources of contraceptive for students in the institution		
Institution health clinic	39	14.9
Public health facilities	162	62.1
Private health facilities	60	23.0
Promote uptake of regular contraceptive		
Yes	204	78.2
No	57	21.8
Use of reproductive counselling services		
Often	52	19.9
Sometimes	44	16.9
Rarely	70	26.8
None	95	36.4
Presence of peer counsellors		
Yes	235	90.0
No	26	10.0

4.5.1 Institutional Related Factors Associated with Utilization of Modern Contraception among College Female Students at KMTC

The findings established that presence of institutional factors, $\chi^2(1) = 5.928$, $p=0.028$), sources of contraceptives for students, $\chi^2(2) = 4.222$, $p<0.001$) and presence of counselors in the institution were significantly associated with utilization of modern contraceptives as shown in Table 4.10.

Table 4.10: Institutional Factors Associated with Utilization of Contraceptives

Institutional factors	Utilization of contraceptives		Df	Chi-square value	P-value
	Yes	No			
Sexual health challenges in seeking reproductive health					
Privacy concerns	24(35.3)	70(36.3)	2		
Fear of being exposed	24(35.3)	80(41.5)		1.551	0.46
I don't know	20(29.4)	43(22.3)			
Presence of un-intended pregnancies in college					
Yes	58(85.3)	154(79.8)	1	0.998	0.208
No	10(14.7)	39(20.2)			
Presence of institutional policies to address reproductive health					
Yes	63(92.6)	154(79.8)	1	5.928	0.009
No	5(7.4)	39(20.2)			
Sources of contraceptive for students in the institution					
Institution health clinic	4(5.9)	35(18.1)	2		
Public health facilities	21(30.9)	141(73.1)		84.257	p<0.001
Private health facilities	43(63.2)	17(8.8)			
Promote uptake of regular contraceptive					
Yes	50(73.5)	154(79.8)	1	1.156	0.182
No	18(26.5)	39(20.2)			
Use of reproductive counselling services					
Often	13(19.1)	39(20.2)			
Sometimes	11(16.2)	33(17.1)	3	1.003	0.551
Rarely	16(23.5)	54(28)			
None	28(41.2)	67(34.7)			
Presence of peer counsellors					
Yes	56(82.4)	179(92.7)	1	6.056	0.016
No	12(17.6)	14(7.3)			

4.5.2 Departmental Heads perspective on Use of Modern Contraceptives among Female Students

4.5.2.1 Thematic Analysis from Departmental Heads on Use of Modern Contraceptives among Female Students

Head of departments were engaged to provide their assertion regarding the use of contraceptives among female students and key policies that the institution had put in place to improve care among students and reduce unwanted pregnancies. The narrations from the responses was summarized and the following themes emerged

Promoting Safe and Responsible Behavior

Most of the participants stated that use of contraceptives promotes safe and responsible behavior among students.

"We believe that educating students about contraceptives empowers them to make informed choices and practice safe sex, reducing the risk of unintended pregnancies and sexually transmitted infections." KI 2.

"Contraceptives are a valuable tool in reducing unintended pregnancies and supporting students in achieving their educational aspirations while prioritizing their health." KI 3.

"We advocate for equitable access to contraceptives for all students, recognizing that responsible contraceptive use is a critical aspect of sexual health, regardless of gender, orientation, or background." KI 5.

Contraceptive Education and Consent

The heads of departments emphasized that they had put in place key educational programs aimed at improving student's knowledge on contraceptive use.

“We believe in educating students not only about contraceptives but also about the importance of consent and communication in sexual relationships.” KI 1.

“Our school's sexual education curriculum includes comprehensive information about contraceptives, fostering a culture of knowledge, respect, and responsibility among students.” KI 3.

“Through one-on-one counseling sessions and group workshops, we work to enhance students' understanding of contraceptives, emphasizing the importance of responsible and informed choices.” KI 5.

Destigmatizing Contraceptive Use

Another important focus has been to help create a conducive environment where contraceptive use can be de stigmatized.

“We aim to break down the stigma surrounding contraceptive use by fostering open and non-judgmental conversations among students and the community.” KI 3.

“Our student-led initiatives empower peers to educate each other about the importance of safe sex and contraceptive options available to them.” KI 4.

4.5.4 Independent Factors Associated with Utilization of Contraceptives

The researcher further applied linear regression to check for independence, the findings revealed that, age, knowledge on modern contraceptive, history of contraceptive use, knowledge on myths and misconception and engaging in premarital sex were independently associated with utilization of contraceptive utilization as shown in Table 4.11.

Table 4.11: Independent Factors Associated with Utilization of Contraceptives

Factors	aOR (95%CI)	Sig.
Age		
17-24	Ref	
25-30	1.33(1.19,3.81)	0.014
31-35	0.79(0.13,4.96)	0.808
Marital status		
Single	Ref	
Married	0.56(0.35,0.99)	0.351
Cohabiting	0.33(0.22,0.77)	0.141
Divorced	0.56(0.23,0.87)	0.981
Number of children		
None	Ref	
Pregnant	0.29(0.11,0.85)	0.311
One	0.87(0.56,2.12)	0.217
More than one	0.57(0.23, 0.67)	0.365
Knowledge on modern contraceptive		
Yes	1.11(1.01,5.99)	p<0.001
No	Ref	
History of contraceptive use		
Yes	2.35(1.14,4.87)	p<0.001
No	Ref	
Knowledge of myths and misconception		
Yes	1.51(1.04,2.31)	p<0.001
No	Ref	
Attitude score	0.78(0.34,2.56)	0.541
Engaging in premarital sex		
Yes	3.11(1.56,5.43)	P<0.001
No	Ref	
Had discussions on contraceptive use		
Yes	0.47(0.15,1.48)	0.194
No		
Presence of institutional polices		
Yes	0.76(0.32,2.11)	0.421
No	Ref	
Source of contraceptives		
Institution health clinic	Ref	
Public health facilities	0.45(0.056,	0.651
Private health facilities	0.56(0.23, 1.05)	0.441
Share sexual issues with?		
Mother/Sister/sibling	Ref	Ref
Spouse	0.77(0.11,5.35)	0.792
Friends	1.06(0.11, 10.12)	0.96
Extended family	0.09(0.006,1.371)	0.083
Nobody	0.80(0.12,5.56)	0.822

4.6 Hypothesis Testing

H_{O1}: There is no relationship between student related factors and utilization of modern contraception among female college students: Rejected for lack of statistical evidence. The following variables had a P value of less than 0.05 and therefore significantly and independently associated with modern contraceptive use among college female students, age = $p < 0.014$, knowledge on modern contraception= $p < 0.001$, knowledge on myths and misconception surrounding use of modern contraception= $p < 0.001$, history of contraception use= $p < 0.001$ and engaging in premarital sex= $p < 0,001$.

H_{O2}: There is no relationship between institutional related factors and use of modern contraceptives among college female students: Rejected for lack of statistical evidence. Using Chi – square test of association, Source of modern contraception, (from public health facilities) had a P value of= $p<0.001$ and therefore significantly associated with modern contraception use, presence of peer counselors within the institution, (college) had a P value of $p<0.016$ which is a significant value and presence of institutional policies to address reproductive health issues among female students had a P value of $p < 0.009$ and significantly associated with modern contraceptive use however none of them was independently associated with use of modern contraception among the female students.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter will be dealing with discussions, conclusion and recommendations made following data analysis. It will be guided by study objectives.

5.2 Proportion of Utilization of Modern Contraceptives

It was revealed that awareness level of modern contraceptives among female students was 90%. Majority of them obtained information from their female and male colleagues respectively. The study therefore revealed that peers have the greatest influence towards awareness and utilization of modern contraception. This is in line with a study done in Nepal, India which showed that it was difficulty discussing sexual reproductive health issues including contraceptive use within the family set up and therefore peers had the greatest impact on knowledge, perception and attitude towards sexuality and use or nonuse of contraceptives among the youth, (Adhikari & Tamang, 2009).

On history of previous utilization of contraceptives close to half had used modern contraception before. A previous study in Lesotho established that half of the student female population reported having used modern contraception before, (Mookodi et al., 2012). It was further noted that 26% out of the 261 respondents were currently utilizing modern contraception with 74% not on a reliable method of contraception. This is a huge gap that needs attention. A study done in Tanzania reported a higher utilization level of 41.5% among the youth while in Uganda and Ghana they had a lower rate of 14.5 and 17.8% respectively, (Sweya et al., 2016). It was clear that there was low utilization rate despite the college being at close proximity to affordable and accessible contraception services at the MCH/FP clinic creating an impression that there are other factors impeding usage. This matches with findings from previous research done at Kenyatta University to determine uptake of youth friendly services provided within the college which established that proximity to

services does not always translate to usage, (Wanjau, 2016). Other contributing factors therefore have to be looked into.

A previous study done at the same institution confirmed that 70% of the female students were sexually active but not on any reliable method, (Mwaura, 2018). A Kenyan survey reviewed that 30.7% of sexually active young women aged 20-24 are not on any modern contraception, (KDHS, 2018). Another study showed that decision making regarding their choice of modern contraception was largely challenging, (Sexton et al., 2014). A similar study done by, (Wangima, 2016) established that despite high level of sexual activity among the youthful college students, there was very low levels of contraceptive uptake.

It was observed that 83% of those on a method had obtained it from MCH/FP clinic mostly run by nurses at Thika level 5 Hospital. This is in contrary to a study done by, (King'au, 2014), that showed that the most common source of the emergency contraception was from the chemists at a rate of 76.4%. The nurses in MCH/FP clinic of Thika level 5 Hospital showed commitment in providing youth friendly services including issuance of modern contraception to the youths including college students which is commendable. This is in agreement with recommendations following a study done in Bostwana to determine awareness of modern contraception among university students. It was emphasized that nurses at college health facilities should focus on educating young college students towards the benefits of using modern contraception not only for pregnancy prevention but also for prevention of sexually transmitted infections, (Hogue et al., (2013). Fifteen percent, (15%) obtained from the chemist most likely for methods that were not available within the hospital clinic or even for privacy reasons. Other pregnancy prevention methods utilized included abstaining, natural FP methods and traditional methods. A study done in Ghana revealed utilization of traditional/natural birth control methods such as sexual abstinence, lactation amenorrhea method and withdrawal method,(coitus interrupters), (Atuahire et al., 2021).

5.3. Student Related Factors Influencing Utilization of Modern Contraception

5.3.1 Social Demographic Factors

It was revealed that socio demographic characteristics significantly influenced utilization of modern contraception. These are age, marital status, number of children and year of study. A study conducted in Ghana among sexually active adolescents and youths 15 to 24 years confirmed that marital status, awareness or lack of awareness of modern contraception, counseling on modern contraception and religion were significantly associated with utilization of modern contraception, (Amoah et al., 2023).

It was clear that level of contraceptive utilization was affected by age and marital status. Stigma surrounding unmarried youth and use of modern contraceptive was profound which is correlated with age because majority of the pre service students were between the age of 17 to 24 and unmarried. Previous delivery promoted contraceptive utilization for fear of becoming pregnant. This shows similarities with cross sectional study done in Nepal which found that most adolescents and youths had low contraceptive utilization rate and were of the opinion that contraceptives was for the married women and not unmarried girls and therefore affecting their preference for the methods. (Himanshu, 2014). A study done by, (Kungu et al., 2020) reviewed that social demographic factors of age, financial status; education and geographical location were all predictors of modern birth control.

A study done in Kenya by,(Ochako et al., 2015) established that low utilization of contraception among the youths was as a result of education and information basically targets the married leaving the unmarried youths who need contraception information to delay pregnancy, this therefore creates a gap in awareness and demand for contraception. A similar study done in Tanzania revealed that two thirds of female students were sexually active with high sexual activity and less modern contraception uptake. Most sexual activity took place between age 20 to 24, (Sweya et al., 2016). Access to modern contraception and utilization remain low in our Country despite promotion and advocacy of youth sexual and reproductive health rights for the youthful population. On the contrary a study done by, (Ahinkorah,

2020) established that there was high utilization of modern birth control methods among teenagers with early sexual debut between age 15 to 19.

A study done in the United States of America revealed 80% of sexual engagement among female students aged 18 to 24 years, indicating a global, local and regional challenge, (Macphail et al., 2017). A survey done by, (KDHS, 2018) revealed that educated young people were more likely to seek reproductive health services including use of contraception because of the ability to understand their health needs more due to their education level. On the contrary a study done in Uganda reviewed that despite education level, sociocultural rules, beliefs and practices bind decision making including that of contraception use, (Kayongo, (2013). In our set up this applies too in that study findings had similarities compared with previous studies in that the proportion of sexually active students compared with contraception utilization was not proportionate. High levels of awareness did not translate to usage.

5.3.2 Knowledge Factors

It was noted that awareness of at least one modern method was high at 90 % which was not commensurate with current level of utilization of 26%. The college is in close proximity to the MCH/FP clinic which offers affordable reproductive health services including health promotion messages on different kinds of contraceptives. A study done in Uganda confirmed that a quarter of university students had unmet contraceptive needs despite having high awareness level, (Nsubuga et al., 2016). This is similar to study findings. A recent study done in India has however established that majority of women preferred modern birth control methods to include female sterilization, use of condoms and oral contraception pill, (Ewerling et al., 2021).

It was noted that the most commonly used contraceptives in order of priority was Jadele, oral contraceptives, IUCD'S and condoms being the least utilized. A study done in Ghana showed that emergency contraception method was the most preferred method followed by oral contraception pills, condoms, injectable, calendar method, coitus interrupters implants being the least preferred method, (Amoah et al., 2023). Study finding found that implants were the most preferred method by the college female students and condoms being the least preferred. This shows that there is need

for education on the importance of dual protection bearing in mind that multiple sexual practices are a common occurrence among the youth. These findings are on the contrary to a study done in Tanzania which showed that condoms were the most commonly known and utilized method of contraception, (Sweya et al., 2016). Other pregnancy prevention options for the female students were abstinence, natural family planning and traditional birth control. This is in agreement with a study done in United States, University of north Carolina which revealed that 1 out of 5 college female students did not utilize modern contraception but instead used traditional methods such as withdrawal and periodic abstinence which has a high failure rate and may lead to unintended pregnancy and abortions, (Huber & Ersek, 2019). Myths and misconception surrounding contraception use was that they may cause infertility, cancer, birth defects and low libido. With adequate information fear on this may be overcome. A similar study done in Nepal revealed that knowledge or awareness of contraception empower young people to make informed choices and right decisions and enables them to do away with unnecessary myths and misconceptions associated with contraception usage, (Aquilar & Cortez, 2016).

The students were aware of side effects associated with modern contraception to include, weight gain, abdominal pain, headache, eye problems and hormonal imbalance however there was no significant relationship between knowledge of side effects and utilization of modern contraceptive. A study done by, (Apanga & Ayamba, 2014) noted that inappropriate counseling on side effects could affect modern contraceptive utilization. A recent study done in Kakamega Kenya reviewed that knowledge on side effects , myths and misconceptions that modern contraception may result in infertility does not discourage majority of the youths from using the modern birth control methods, (Arlotti-Parish et al., 2023), a study done in Ghana reviewed that knowledge on side effects of modern contraceptive methods affect utilization among the users and therefore health care workers need to do adequate education and counseling on modern contraception and clearly address issues of myths and misconceptions which act as hindrance towards consumption of modern contraceptive services (Amoah et al., 2023).

Impact of unintended pregnancy as mentioned included college discontinuation, delay in completion of studies, high cost of upkeep for both mother and baby and health risks. This is in line with a study conducted in the united states of America that stated that 61% of college students who have children while in school do not usually complete their education, 1 out of 10 of births in the US are unintended and that 7% of dropout rates among community college students was as a result of unintended births, (Storin et al., (2012). In Ghana it was reported that low rates of utilization of modern contraception has led to unintended pregnancies, unsafe abortions leading to maternal mortality, (Amoah et al., 2023).

In agreement with a study done in Tanzania, majority of young female students are ill prepared with knowledge on sexual and reproductive health including use of contraception as they transition from strict high school environment to almost a care free environment at tertiary institutions where they are prone and exposed to unprotected sex, alcohol and drugs, (Sweya at al., (2016).

5.3.3 Socio Cultural Factors influencing Utilization of Modern Contraception

Study findings showed that 43% of respondents share their sexual matters with friends, (peers). This meant that peers have great influence in positively or negatively influencing on utilization of contraception and therefore there is great need to provide them with the right information to enable them to reach out for their colleagues and influence their decision on pregnancy preventive measures. The male partners were also positively identified as confidants and therefore since some of them cohabit with their male colleagues, any lessons on youth reproductive health including use of modern contraception should involve both male and female students. Mothers and siblings were a useful lot also with a percentage level of 24 % and therefore there is need to engage at the family level and improve on utilization of youth friendly services. A study done in Israel confirmed that good communication between mothers and daughters was directly proportional to the increase in reliable means of contraception which reduced elective abortions, (Simkhada et al., 2016). A recent study done in Kenya show that adolescents who were using modern contraceptive were more likely to have to have been okayed by their mothers and

boyfriends, (Arlotti-Parish et al.,2023). In Kenya it was reported that parents and teachers have negative attitudes towards use of contraception by adolescents and youth, this impedes progress, (Kinaro, 2012) as quoted by Cherono, 2014). Another Kenyan study by, (Wangima, 2016) on uptake of modern contraception among college students at JKUAT, reported that use of contraception is not a topic that is openly discussed among the unmarried youths due to strong cultural and religious beliefs which expose them to increased risks of unintended pregnancies and unsafe abortion services for fear of societal stigmatization. Traditional teachings prohibit premarital sex and pregnancy. Youths found using contraceptives are punished thus instilling fear, (Sendorowitz et al., 2015). The study has established that open discussion was significantly associated with utilization of modern contraception. A study done in Ghana showed that despite the many advantages of modern contraception, social cultural factors deter young women from using the modern contraceptive technology. Such factors are fear of unwanted side effects, negative peer influence, cultural believes, prior open discussion of contraception methods, level of education and awareness of ovulatory cycle, age of the youth, visiting health care facility where health promotion is done, marital status, health care provider attitude and adequate counseling on modern birth control, (Amoah et al., 2023).

Community perception on use of contraception by the youth indicated that 35% viewed it as immorality; 35% viewed it as crime while 11% referred to as sin. There is need to engage opinion leaders at community level on matters of youth reproductive health. Religious leaders should adequately play their part and encourage young men and women to practice chastity by championing on abstinence.

On whether open discussion on sexual matters increased contraception utilization, 85% agreed on this while 15% disagreed, however in Kenya, parents and care givers were reported as being too preoccupied with making a living or meeting social obligations at the expense of their young ones who in turn lack guidance and support required for responsible decision making in matters of sexual and reproductive health and therefore yield very easily to misadvise and misinformation from their peers due to peer pressure. Power imbalance between men and women sometimes result in

difficulties in refusing unprotected sex, condom use negotiation or contraceptive if the partner is unwilling, (MOH, 2015). (Kayongo, 2013) noted that social cultural rules bind decision making including that of contraceptive utilization. The conclusion is that sexuality matters should be discussed in the open, in all avenues including schools, churches, mosques and any other relevant avenues and should never be a preserve for health care workers only. The commonality of contraceptives among the youth was noted to be high at 66% and the issue of religion and their acceptance of contraception were also high at 43%. Ease of discussing sexuality issues in the community was found to have great challenges with majority describing it as very difficult. A study done by, (Ahinkorah, 2020) reviewed low modern contraception utilization among adolescents and youths who resided in the rural set up and among communities with low levels of education status.

5.3.4 Students Attitude towards Utilization of Modern Contraception

Findings showed that, 72% of respondents disagreed with the statement that they are ashamed of using modern contraception, this is of a contrary opinion with a study done by (Muneene, 2015) which reported that shame was a significant factor hindering use of contraception, (condom use) by unmarried youth. Sixty per cent agreed that they have strong preference for modern contraception. A study however done by, (Kayongo, 2013) established that young women perceived condom users as sexually immoral and that requesting partners to use condom was viewed as a sign of mistrust. Similarly, 85% asserted that their peers have a lot of influence in the use of modern contraception. There was a significant relationship between respondents who were currently on modern contraceptive methods and those who were not utilizing in that current users had a high attitude score average than those who were not utilizing modern contraceptives. The responses given by the female students are an indication of positive attitude towards modern contraception.

5.4 Institutional Related Factors Influencing Utilization of Modern Contraception

The study established that independent factors associated with contraceptive utilization were, institutional factors, source of contraception and presence of

counselors in the institution. It was also revealed that the main sexual health challenge among the female students was the fear of being exposed and lack of confidentiality. It was also confirmed that unintended pregnancy cases were being experienced among college female students suggesting unmet contraceptive needs with a response rate of 85.3%, (Hogue, et al., (2013) had observed that institutions have the capacity to curb sexual health challenges including unwanted pregnancies, STI's and so on by helping students to reexamine their thoughts and actions. On whether the institution had policies guiding youth reproductive health needs, the response was positive. There were counseling and guidance sessions led by a counselor from among the female lecturers and peer educators, provision of condoms and rarely emergency contraception. Similarly, in Ethiopia due to increasing levels of unintended pregnancies and abortion cases it led to the introduction of sexuality education in schools and youth friendly centers, (Ochako, et al., 2015). There was very low provision of contraception within the college premises and at only 5.9% and mostly only male condoms were dispensed. Other sources included public health facilities and private health facility. On promotion of use of modern contraception within the college, the response was very positive from both female students and departmental heads. Counseling services on youth sexual and reproductive health within the college were available but underutilized because only a small percentage fully utilized the services offered. This gap is huge considering behavior change communication is taught and learned in these counseling sessions.

5.4.1 Study Limitations

Shortage of funds was my greatest limitation due to lack of funding. I had other family responsibilities that required money during my study period.

Time constraints were my other limitation that I experienced. I was only released for a short while and had to go back to my work station before completing my research thesis

Covid 19 pandemic affected my data collection in that colleges closed down for more than a year which forced me to wait until re opening.

Other research limitation I experienced were limitation of scope, generalizability of study findings to other medical colleges, research bias. Subjectivity of qualitative research data and Hawthorne effects.

5.4.2 New Knowledge Gained

This piece of work has brought new knowledge and insight as far as modern contraception is concerned.

1. It came to my knowledge that intervening / confounding factors can positively or negative influence on the relationship between independent variables (proportion of utilization of modern contraception, student /institutional related factors) and dependent variables, (Utilization of contraception by female students). Intervention at the level of intervening /confounding variables should therefore be addressed for positive feedback
2. That peers have great influence on youth sexual and reproductive health issues. Utilization of peer counselors can significantly lead to high impact and therefore investing on competent knowledgeable highly motivated peer pressure counselors can lead to good outcome
3. Those institutional factors can either promote, stagnate or bring down consumption of youth sexual and reproductive health services. It the duty of every institution to put measures in place that will enable enhancement of uptake or utilization of reproductive health services. This will result in reduction of unintended pregnancies and school dropout rates.
4. That there is a very big gap between the level of utilization of reliable modern contraception methods by sexually active students and those with potential of becoming sexually active as a result of peer pressure. The gap can only be bridged by availing adequate information on modern contraception. All stake holders should actively be involved.

5.4.3 Conclusion

The proportion of female college students who were on a modern contraception method during the period of data collection was low and at 26%. This percentage is

low bearing in mind the high percentage of sexual engagements and unions during study period. There is need for use of dual protection against pregnancy/sexually transmitted infections including Human immune deficiency virus/Human papilloma virus among others. Information on this can be done by the counseling department. It was found out that those with history of modern contraceptive use were 2.4 times more likely to utilize or be currently on a method of modern birth control.

Demographic factors were significantly associated with modern contraceptive utilization; these are age, marital status, year of study and previous deliveries. These factors can be used to promote utilization of modern contraception. Age 25 to 30 was noted to be independently associated with use of modern contraception in that they were 1.3 times more likely to utilize.

On knowledge factors, there was a high awareness level of at least one modern contraception method however this did not translate to usage by the sexually active group. Adequate knowledge on different types of modern contraception, side effects, benefits, myths and misconception should be well addressed not to become a hindrance towards utilization. It was observed that female students who had prior knowledge on modern contraception were 1.1 times more likely to utilize the methods and those with knowledge on myths and misconceptions surrounding use of modern contraception were 2 times more likely to comply.

On social cultural factors, marital status, open discussions of sexual matters, engaging in premarital sex, sharing of sexual matters with significant others was significantly associated with increased utilization of modern contraception. It was noted that female students engaging in premarital sex were 3 times more likely to use modern contraception.

Majority of female students had positive perception which translated to positive attitude towards utilization of modern contraception. Given adequate information on the topic this may translate to increased utilization and few or no incidences of unintended pregnancies during study period.

On institutional factors, it was noted that institutional factors influence utilization of modern contraception in that both female students and key informants perspectives showed a significant relationship between the two variables. Presence of peer counselors within the institution positively and significantly influenced utilization of modern contraception. Institutional policies addressing youth sexual and reproductive health played a great role. Presence of school sexual education curriculum which enables female students to get comprehensive information on contraception use, knowledge culture, respect and responsibility among the peers was promoted within the institution. Educational programs to address student knowledge on contraception use were available. Availability of male condoms and emergency contraceptives once in a while helped curb unintended pregnancies however it was noted that majorly female students obtained modern contraception at MCH/FP clinic in Thika level 5 Hospital. It was noted that reproductive health counseling department was underutilized for fear of privacy concerns and sometimes female students shy off from disclosing or sharing their private sexual reproductive health matters with their peers or female lectures which is a hindrance towards use of modern contraception for fear of being exposed. Key informants agreed that use of modern contraception was an important tool in reducing unintended pregnancies as well as a critical tool in addressing matters youth sexual and reproductive health.

5.5 Recommendations

The following is the recommendations following the study

1. There is need for KMTC, Thika to collaborate with the hospital MCH/FP department for provision and referral for youth friendly sexual/reproductive health services including provision of modern contraception. The lead persons to spearhead this should be the head of the counseling department and the peer counselors within the college.
2. Sexually active students should be properly guided on use of modern contraception without stigmatization and judgments. This should be done by providing quality information about modern contraception to include advantages and dis advantages, mode of action of different types, indication

for use, side effects and myths and misconception surrounding use of contraception by young people. This will lead to improvement on the proportion of contraception utilization among the sexually active group.

3.Guidance and counseling department which is currently underutilized to come up with ways of making it user friendly and user attractive. This will improve on uptake of counseling services within the college which can lead to behavior change and empowerment on life skills which is key as far as risky sexual behavior is concerned. This can be achieved by outsourcing a professional counselor to man the counseling department. This will go a long way in improving on trust and exchange of information between the counselor and the students. Privacy issues were seen as a major hindrance to seeking of counseling services which is currently run by a female lecturer. Majority of the female students felt that disclosure of private sexual information to their teacher may lead to victimization or disclosure of private sexual information to their colleagues and teachers.

4.Other pregnancy prevention options to be incorporated, that is college students who are not sexually active should be encouraged to remain so by empowering them with information that promote independence and focus to enable them to make independent decisions about their sexuality and refusing to be negatively influenced by peer pressure to indulge in risky sexual vices without their own free will. Other pregnancy prevention strategies should also be employed to enable variety and choice; these include abstaining from sexual intercourse, natural birth control and traditional pregnancy prevention methods.

5.Peer counselors, (educators) within the college to be motivated in kind and empowered to promote use of modern contraception among the sexually active group, studies have shown that peers have great influence in use or disuse of modern contraception among the youth.

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APPENDICES

Appendix I: Consent Form

Introduction

Greetings, I am Rose M. Ngile, a second year student at Jomo Kenyatta University of Agriculture and Technology doing master's program in Nursing, (Midwifery/Reproductive Health option). Welcome and feel free to be part of this noble work.

Purpose

I am conducting a study on factors influencing utilization of regular modern contraception among female college students at KMTC, Thika. Modern contraceptive methods when used correctly and consistently prevent unintended pregnancies and sexually transmitted infections. This research work will determine level of utilization and factors that influence usage of modern contraception. This will help in scaling up utilization and prevention of untimely pregnancies.

Procedure

Participants who meet inclusion criteria shall sign consent forms in the presence of chief investigator/ research assistants. This will be followed by filling research questionnaire with open and closed questions. No interference or influencing shall be done during filling of questionnaires. This may take up to half an hour of your time. Questions shall be cross checked for completion and entry into the data base done. All information obtained shall be treated with highest level of confidentiality.

Risks

The study is safe and you will not be exposed to any harm or physical injury. Some questions asked may be sensitive and touching on private matters however this is not meant to embarrass you. You are therefore kindly requested that you answer all

questions including the most uncomfortable. You are free to ask for clarification of questions.

Benefits

Participating in this study shall not have any direct benefits however information obtained shall be used to better understand the level of utilization of modern contraception and address hindrances to enhance better utilization. No monetary rewards or token shall be advanced to you as a result of participation.

Voluntary Participation/ Withdrawals

Your participation is voluntary. If you decide not to continue along the way you are at will to stop at any point.

Confidentiality

High degree of confidentiality shall be observed. Your name or address shall not be recorded in the interview form. Your responses shall be combined with others and no person will be able to identify them. The forms shall be placed in safe custody and all recorded information obtained shall only be used for study.

Contact Person

The contact information of chief investigator shall be availed to you. If you have any other area of concern such as your rights as a participant, how the study is being conducted or something that was not clearly explained to you, you are at liberty to contact me or the secretary – UON/KNH Ethics/Research Review Committee

CONTACTS- ROSE M. NGILE 0720366137

UON/KNH ERC P.O. BOX 20723 CODE 00202, TEL. 027 263 009

CONFIRMATION OF CONSENT

Participants Statement

All the above information concerning my participation in this study has been read and understood I am authorized to ask any question before giving my consent and during filling of the questionnaire. I understand that the information I will give is entirely for study purpose. This information shall be treated with highest level of confidentiality and kept in safe custody. I fully understand that I may choose not to go ahead with the interview at any point without any dire consequences whatsoever. I therefore voluntarily choose to give my informed consent to participate in this study.

SIGNATURE OF PARTICIPANT…….

DATE……

WITNESS SIGNATURE, (CHIEF INVESTIGATOR/ RESEARCH

ASSISTANT……

DATE……

Appendix II: Youth Assent for those under the Age of 18 Years Principal Investigator: Rose M. Ngile

Dear parent/guardian,

Greetings, my name is Rose, a second year student doing Master of Science Degree in Nursing at Jomo Kenyatta University of Agriculture and Technology. My study is on factors influencing utilization of modern contraception among female college students at KMTC, THIKA, and kindly feel free to be part of this noble work.

PURPOSE

You are here by being requested to give consent for your daughter to take part in this study. The main reason for carrying out this research project is to find out factors that influence use of modern contraception among female college students and look for ways to address the hindrances. In the recent years our country and the world at large has experienced an increase in cases of unintended pregnancy among female students while in school. This has led to untimely babies, extension of study period, financial implications for student and or parent/guardian and emotional trauma to the culprit. In some instances, this has led to maternal mortality where unsafe abortion was procured or even child mortality as a result of inability to raise the child in an ideal manner due to financial constraints. The challenge of being a mother and student has never been an easy task for any student. In a nutshell untimed pregnancy during study period affect the future of the learner, that of her baby and the family at large. Infection with HIV and or sexually transmitted infection come along with engagement in unprotected sex.

PROCEDURE

All participants in this study shall be required to provide a written consent which will be signed before the presence of principal investigator and or research assistants. Now that your daughter is underage, (minor), the parent/guardian by law is required to sign on their behalf. Each of the interviewee shall be issued with a questionnaire which will take about half an hour. All the forms shall be crosschecked for

completeness and placed in safe custody. During filling in of the questionnaires, no interference or coercion whatsoever shall be allowed. All information obtained shall be treated with utmost confidentiality.

RISKS

The study is safe and free from any physical harm. Some of the questions might however be sensitive and touching on private matters, this is not meant to embarrass or shame her. She will be kindly encouraged to continue giving her input as this will help us find a lasting solution towards the menace of unwanted pregnancies. You daughter is allowed to ask questions for clarification or even stop the interview all together without any dire consequences whatsoever.

BENEFITS

There shall be no direct benefits for her as an individual; no cash shall be advanced or any token however the information and results obtained shall help young students on issues of sexuality and birth control.

VOLUNTARY PARTICIPATION AND WITHDRAWAL

The entire exercise shall be entirely voluntary, if she changes her mind in the process she will be free to withdraw or dropout.

CONFIDENTIALITY

This research work shall be carried out with a lot of confidentiality. No name shall be printed on the questionnaires but only serialized numbers. The forms shall be mixed and kept together and therefore it will be impossible to identify whose response it might be. Safe custody of forms shall be ensured by keeping them under lock and key. All information obtained is for study purposes only.

CONTACT PERSON

You are free to contact me or the KNH/UON-ERC in case of any queries or concerns through the following address –

ROSE M. NGILE, TEL. NO. 0720366137, EMAIL ADDRESS – rosngish@gmail.com. **Or**

KNH/UON- ERC P.O BOX 20723 POSTAL CODE 00202, TEL. NO. 726300-9

CONFIRMATION OF ASSENT

PARENT/ GUARDIAN STATEMENT

I have read through / or have been explained everything about the study. I fully understand that the reason for the research is purely for study purpose. All the information provided shall be treated with utmost care and confidentiality. If I choose not to consent, no consequences shall be advanced to my child or family as a result. I therefore at will, choose to participate by allowing my daughter to take part in the study by signing on her behalf.

GUARDIANS/PARENT SIGNATURE…

NAME

DATE.

SIGNATURE OF PRINCIPAL INVESTIGATOR/RESEARCH ASSISTANT..

NAME…

Appendix III: Kipaji Cha Ruhusa

LENGO: MAMBO YANAYOSABABISHA UTUMIAJI WA DAWA ZA KISASA ZA KUZUIA KUPATA MIMBA KWA WANAFUNZI WA KIKE WANAOSOMEA CHUO CHA UTABIBU CHA THIKA, (KMTC)

MTAFITI MKUU NI ROSE M. NGILE

SABABU YA UTAFITI

Jina langu ni Rose,na ninakuomba kwa heshima kuu umkubalie msichana wako kwa njia ya kupeana sahihi kwa ajili yake ili aruhusiwe kushiriki katika kujibu maswali itakayo tuwezesha kujua vile tunaweza kupambana na hili janga la mimba za mapema. Kulingana na sheria za nchi, yeyote aliye chini ya umri wa miaka kumi na minane hawezi kujipea ruhusa.

Lengo kuu la huu utafiti ni kutafuta kujua ni nini hasa kinachochangia utumiaji wa dawa za kisasa za kuzuia mimba za mapema kwa wanafunzi wa kike wakiwa wangali chuoni. Hii itaiwezesha shirika la maswala ya uzazi kuchukua hatua mwafaka ili kuweka mikakati ya kuwasaidia akina dada kumbakia shuleni hadi kukamilisha masomo yao. Hasara inayoletwa na mimba za mapema ni kama vile kusoroteka kwa maisha ya baadaye ya mwanafunzi mwenyewe, mototo wake na jamii nzima.

Lengo lengine la utafiti huu ni kupata suluhu la kudumu la kuwaweka kina dada chuoni hadi kukamilisha elimu yao pasipo maswala ya uzazi katikati. Mwanafunzi atashiriki kwa kupitia kujibu maswali na hakuna hatari yeyote kama vilekujeruhiwa, walakini maswali mengine ni mazito na yanaweza kusababisha wasiwasi ama fedheha mbali unaombwa uyajibu tu, maana nia yake sio kumfedhehesha mwanafunzi walakini ni kupata suluhu la kudumu. Pia hakuna faida ya kibinafsi inayoambatana na kushiriki katika huu utafiti kama vile kupewa pesa mbali faida itakayopatikana itawalenga akina dada wetu kwa jumla. Mambo yote yatabakia kuwa siri na ayataelezwa mtu mwingine yule na fomu itawekwa kwa ustadi mkubwa na kufungiwa na kufuli kwenye kabati na mtafiti mkuu.

Kumbuka kushiriki kwa msichana wako ni kwa hiari na hakuna yeyote atakayemlazimisha kushiriki. Pia hakuna adhabu yeyote atakayopewa kama atakataa kutoshiriki. Ameruhusiwa pia kuachia maswali katikati kama atabadili nia yake ingawa ninamsihi kwa unyenyekevu mno sana asikose kumaliza kuyajibu. Kwa ajili ya kuwasiliana nami anwani yangu ni kama ifuatayo

ROSE M. NGILE, SADUKU LA POSTA, 3169 THIKA-KONDI LA POSTA NI 01002, NAMBARI YA SIMU- 0720366137, BARUA PEPE- rosngish@gmail.com**.**

Pia ningependa kukujulisha yakwamba unaweza kuulizia kuhusu huu utafiti kama uko na shaka ama kutoelewa kwa kina malengo ya utafiti wenyewe kwa ajili ya kufafanuliwa zaidi kwa, KNH/UON- ERC, SADUKU LA POSTA 20723, KONDI LA POSTA-00202, NAMBARI YA SIMU- 726300-9.

Huu ni ushirikiano baina ya chuo kikuu cha Nairobi kikishirikiana na hospitali kuu ya Kenyatta ambayo unahusika na mambo ya utafiti.

Je kama unakuli kumpea msichana wako ruhusa ashiriki katika huu utafiti, tia sahihi au kidole

SAHIHI YA MZAZI AU MSIMAMIZI…….. TAREHE,,,,,

JINA KAMILI LA MZAZI/MSIMAMIZI

SAHIHI YA MTAFITI MKUU….TAREHE

JINA LAKE

Appendix IV: Consent for Departmental Heads.

TITLE: FACTORS INFLUENCING UTILIZATION OF MODERN CONTRACEPTION AMONG FEMALE COLLEGE STUDENTS AT KMTC, THIKA

PRINCIPAL INVESTIGATOR: ROSE M. NGILE

INTRODUCTION: Greetings, my name is Rose, a second year student pursuing a Master of Science degree in nursing, (midwifery option) at Jomo Kenyatta University of Agriculture and Technology. I am doing a study on factors influencing utilization of modern contraception among female college students at KMTC, THIKA.

PURPOSE

You are hereby being requested to take part in this noble exercise by providing answers to a few questions that shall be directed to you as one of the key persons in the institution. The issue of unintended pregnancy during study period has remained a threat for the girl child. It directly affects her future, her baby, the family, the learning institution, community and the country at large. Contraceptive technology is aimed at delaying pregnancy until when appropriate. Adequate information on mode of action and management of side effects is important towards improving compliance among targeted groups. Prevention of HIV/STI infections is also achieved by correct and consistent use of dual protection. Ways of addressing hindrances towards utilization of modern contraception is paramount if all this is to be achieved.

PROCEDURE

It is required of you that you give a written consent before the principal investigator as part of ethical considerations. The questions to be asked shall take about half an hour of your time. There shall be no interference or direction on how to answer the questions and all information provided shall be treated with utmost confidentiality.

BENEFITS

There shall be no direct benefits accorded to you as a result of participation such as monetary allowance or token however all the information that you will provide shall be used to find a lasting solution towards this problem of unintended pregnancy.

VOLUNTARY PARTICIPATION/WITHDRAWAL

It should be politely known to you that your participation in this study is all voluntary. Should you decide to change your mind along the way, this is going to be allowed with no consequences whatsoever. It is my kind request though that you resist from doing so.

CONFIDENTIALITY

All information given shall be treated with the highest level of confidentiality. All your responses shall be filled by the principal investigator in the spaces provided to make sure that it is impossible to identify its origin. All the forms shall be kept in safe custody and under lock and key by the principal investigator.

CONTACT PERSON

I do hereby give my contact and that of KNH/UON-ERC in case you may need some clarification from us.

ROSE M. NGILE, P.O. BOX 3169 THIKA- POSTAL CODE-01002, CELL PHONE 0720366137, E.MAIL ADDRESS- rosngish@gmail.com

KNH/UON- ERC, P.O. BOX 20723- NAIROBI, POSTAL CODE-00202, TEL. NO. 02-726300-9

CONFIRMATION OF STATEMENT

PARTICIPANTS STATEMENT

I have read through this consent document and I fully understand its implications, am allowed to ask any questions now and even later should I have any concerns. I voluntarily agree to take part in this study without being forced or coerced to do so. I also understand that all information that I shall give is meant for learning purposes only.

PARTICIPANTS SGNATURE…

NAME…

PRINCIPAL INVESTIGATOR….

NAME

Appendix V: Questionnaire

ANSWER ALL QUESTIONS

A; student related factors influencing utilization of modern contraception

A; 1 Social demographic factor

1. Age, (indicate your age in years)
   - ☐17-24
   - ☐25-30
   - ☐31-35
2. Marital status
   - ☐Single
   - ☐Married
   - ☐Separated
   - ☐Co-habiting (living together with a male partner but not married)
   - ☐Divorced
3. Religion
   - ☐Muslim
   - ☐Christian
   - ☐Hindu
   - ☐Others, Specify……
4. If Christian, specify…
   - ☐Protestant
   - ☐Catholic
   - ☐Pentecostal
   - ☐Seventh day
   - ☐Others, specify
5. Faculty (Department), Specify…….
6. Year of study-
   - ☐First
   - ☐Second
   - ☐Third

7. No of children-

☐None

☐Pregnant

☐One

☐more than one

8. Where do you stay

☐In college hostels

☐Off campus

9. If off campus whom do you stay with-

☐Alone

☐With a female colleague/colleagues

☐With a male friend

☐With guardian

☐With parents

☐With sibling

B; Utilization of Modern Contraception among Female College Students

10. Are you aware of any one contraceptive method?

☐Yes

☐No

11. If yes, what was the source of information from?

Specify……

12. Have you ever used contraceptives?

☐ Yes

☐No

13. If yes which contraceptives have you used before?

Specify……

14. If no what was your reason for not using contraceptives?

Specify……

15. Where do you obtain contraceptives from?

☐Chemist

☐MCH/FP clinic

☐From friends

☐Other sources, specify…….

16. Currently are you using any form of contraception method?

☐Yes

☐No

17. If your answer for the question above is yes, which method are you using?, specify……

18. Unintended pregnancy has its own implication in the life of female college students, tick as appropriate according to your opinion? You may tick more than one response.

☐Discontinuation from college

☐Delay in completion of college

☐Increased burden on upkeep of both mother /baby

☐Health risks

☐Others, specify……..

19. Do you have cases of students of opposite sex co-habiting (living together but not married) while in college?

☐Yes

☐No

20. Is it common to have students with multiple sexual partners in this college?

☐Yes

☐No

21. Which other method do you use to prevent pregnancy?

☐Abstinence

☐Natural Family Planning

☐Traditional methods

☐Others specify……

C; Student Factors Influencing Utilization of Modern Contraception

C1; Knowledge Factors

22. What positive information do you have concerning modern contraception that may encourage uptake?

    ……
    ……
    ……

23. Which area is of concern according to you on modern contraception use by young people?

    ……
    ……
    ……

24. Modern contraceptives have several side effects that are associated with use, kindly mention them?

    ……
    ……
    ……

25. Advantages of using modern contraceptives include?

    ……
    ……
    ……

26. Myths and misconceptions that surround use of modern contraceptive include?

    ……
    ……
    ……

C2; Social Cultural Factors

27. Whom do you share your sexuality concerns with?

    ……
    ……..……
    ……..

28. In your community how is premarital sexual relationships perceived?

……

……...……

…….

29. How common is utilization of modern contraception among the unmarried youths in your community?

……

……

……

30. Does your religion prohibit use of modern contraceptives among the youths?

☐Yes

☐No

31. Do you discuss about contraceptive use with your parents or guardian?

☐Yes

☐No

If yes, which parent?

☐Mother

☐Father

☐Female guardian

☐Male guardian

32. If your answer is no, give reasons?

.....

.....

.....

33. Which other people do you discuss about contraception with?

☐Sisters

☐Cousins

☐Grandmother

☐Friends

☐Others, specify? .....

34. By openly discussing about contraceptives, do you think this would increase uptake?

☐Yes

☐No

35. How easy is it discussing issues of sexuality/contraception in your community? Give your own personal experience

…….....

.....

36. How does your community view young unmarried girls who get pregnant?

……

……

……

C3; Perception/Attitude Factors

Key -SA-strongly agree A – Agree N- Neutral

D- Disagree SD- Strongly Disagree

	SA	**A**	**N**	**D**	**SD**
I dislike use of modern contraceptives					
I have a strong preference for modern contraception					
I feel ashamed of using modern contraceptives					
Modern contraceptives are a preserve for married couple					
The information I have on modern contraception (side effects) has affected my decision to use them					
Myths and misconceptions surrounding use of modern contraception discourage me from utilizing them					
Use of modern contraception by the youth should					

be kept as a top secret					
I have a strong belief that modern contraception is beneficial for the youths					
Peers have a lot of influence concerning use of modern contraceptives					
Positive/negative perceptions affect utilization of modern contraceptives					

Appendix VI: To be filled by Departmental Heads/Dean of Students

D: Institutional Factors

Participants

Those to participate were the Dean of students, Head of Departments, (HOD), Nursing, Clinical Medicine, Nutrition and Dietetics, Trauma and Orthopedic technology.

Instruction

You are kindly requested to answer every question in the space provided. Any question you may think it is not clear you are free to ask for a clarification. An additional paper will be provided if you will require more space to answer the questions.

D1; Interview Guide, (Themes), Shall Be

1. What Sexual Health challenges, (problems), do female students face?

   ……

   ……

2.Are there any cases of unintended pregnancies among female students and if yes are they of any concern?

   ……

   ……

3.Which institutional policies address Adolescent/Youth Sexual Reproductive Health, (including contraceptive use), among female students?

   ……

   ……

4.Are there Reproductive Health Services, (including contraceptives) offered within the institution?

   ……

   ……

   ……

5.Where else do female students get contraceptives from?

……

……

……

6.What has the institution done to promote uptake of modern contraception among female students to prevent unintended pregnancies?

……

……

……

7.How often do female students receive counseling within the institution on the importance of modern contraception in preventing unintended pregnancies?

……

……

……

8.How do you advocate for youth reproductive health rights for your college students?

……

……

……

9.Are there peer counselors in this institution and what is their responsibility?

……

……

……

10.What do you think can be done by the institution to work towards beyond zero unintended pregnancies during study period?

……

……

……

Appendix VII: Institutional Factors- Student Perspective

INSTUCTION

You are hereby requested to respond to each question being asked, in case of difficulties in understanding of what is being asked kindly ask the principal investigator or the research assistant for clarification

1.Are there cases of unintended pregnancy during study period and how can you prevent it?

……
……

2.What is the institution doing to prevent unintended pregnancy among female students?

……
……

3.Give suggestion on what the institution can do best to curb unintended pregnancy during study period

……
……

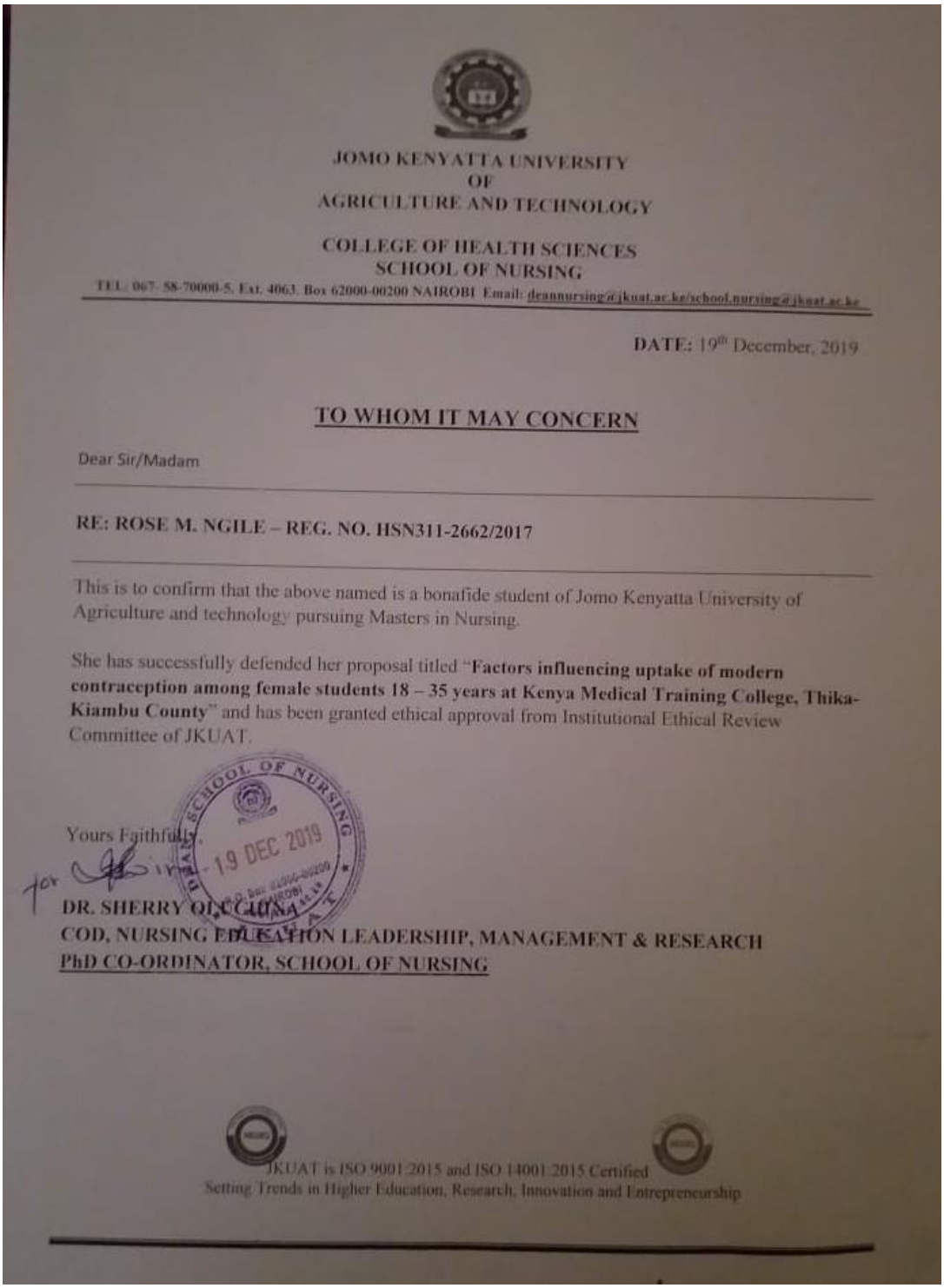
4.What role do peer counselors play in preventing unintended pregnancy in this college?

……
……
……

5.Who else do you think could be of great help in curbing unintended pregnancy in this college?

……
……

Appendix VIII: Introduction Letter from Jkuat Erc



JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY

COLLEGE OF HEALTH SCIENCES
SCHOOL OF NURSING

TEL: 067- 58-70000-5, Ext. 4063, Box 62000-00200 NAIROBI Email: deannursing@jkuat.ac.ke/school.nursing@jkuat.ac.ke

DATE: 19th December, 2019

TO WHOM IT MAY CONCERN

Dear Sir/Madam

RE: ROSE M. NGILE – REG. NO. HSN311-2662/2017

This is to confirm that the above named is a bonafide student of Jomo Kenyatta University of Agriculture and technology pursuing Masters in Nursing.

She has successfully defended her proposal titled "**Factors influencing uptake of modern contraception among female students 18 – 35 years at Kenya Medical Training College, Thika-Kiambu County**" and has been granted ethical approval from Institutional Ethical Review Committee of JKUAT.

SCHOOL OF NURSING
19 DEC 2019

Yours Faithfully,

for

DR. SHERRY OLUCHINA
COD, NURSING EDUCATION LEADERSHIP, MANAGEMENT & RESEARCH
PhD CO-ORDINATOR, SCHOOL OF NURSING

JKUAT is ISO 9001:2015 and ISO 14001:2015 Certified
Setting Trends in Higher Education, Research, Innovation and Entrepreneurship

Appendix IX: Letter 0n Introduction, (Mwingi Campus)

Telegrams: "MEDTRAIN" Nairobi
TELEPHONE: NAIROBI 2725191, 2725711/14
Fax:2722907 Email: info@kmtc.ac.ke
Please address all correspondence to:
The Director
When replying please quote

KENYA MEDICAL TRAINING COLLEGE
P.O. BOX 30195-00100
NAIROBI

Ref: No. KMTC/ADM/74/VI.

Date 18/1/2021

To: The Principal
KMTC Mwingi Campus

Dear Madam,

LETTER OF INTRODUCTION

The bearer of this letter, Ms. Rose Ngile is a Masters student at Jomo Kenyatta University of Agriculture and Technology currently working on a study titled, ***"Factors Influencing Uptake of Modern Contraception among Female Students 18 – 35 Years at Kenya Medical Training College, Thika Campus Kiambu County".***

Her study proposal has been reviewed by the College Research and Ethics Review Committee (CRERC) which is satisfied that no ethical issues shall be violated among the respondents in the process of data collection.

The study has also received the relevant clearance from her institution as well as a research license from NACOSTI.

The investigator has requested to carry out a pretest of her data collection tool in your campus and is seeking your permission and support for this process.

Kindly accord her the necessary support; should any unanticipated issues arise in the process, please contact the Research Office.

Thank you.

Eglah J. Kiplagat
FOR: CHIEF EXECUTIVE OFFICER

Appendix IX: Letter on Introduction, (Thika Campus)

Telegrams: "MEDTRAIN" Nairobi
TELEPHONE: NAIROBI 2725191, 2725711/14
Fax:2722907 Email: info@kmtc.ac.ke
Please address all correspondence to:
The Director
When replying please quote

KMTC/ADM/74/VI.
Ref: No. .....

KENYA MEDICAL TRAINING COLLEGE
P.O. BOX 30195-00100
NAIROBI

Date..... 18/1/2021

To: The Principal
KMTC Thika Campus

Dear Madam,

LETTER OF INTRODUCTION

The bearer of this letter, Ms. Rose Ngile is a Masters student at Jomo Kenyatta University of Agriculture and Technology, currently working on a study titled, ***"Factors Influencing Uptake of Modern Contraception among Female Students 18 – 35 Years at Kenya Medical Training College, Thika Campus Kiambu County".***

Her study proposal has been reviewed by the College Research and Ethics Review Committee (CRERC) which is satisfied that no ethical issues shall be violated among the respondents in the process of data collection.

The study has also received the relevant clearance from her institution as well as a research license from NACOSTI.

The investigator has requested to carry out data collection in your campus and is seeking your permission and support for this process.

Kindly accord her the necessary support; should any unanticipated issues arise in the process, please contact the Research Office.

Thank you.

Eglah J. Kiplagat
FOR: CHIEF EXECUTIVE OFFICER

Appendix X: Letter of Clearance from KNH/UON ERC

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/179

10th June 2020

Rose Mukeli Ngile
Reg. No.HSN311-2662/2017
School of Nursing
J.K.U.A.T

Dear Rose

RESEARCH PROPOSAL – FACTORS INFLUENCING UTILIZATION OF MODERN CONTRACEPTION AMONG FEMALE STUDENTS AT KENYA MEDICAL TRAINING COLLEGE, THIKA (P47/02/2020)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 10th June 2020 – 9th June 2021.

This approval is subject to compliance with the following requirements:

a. Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b. All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
c. Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
d. Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
e. Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
f. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
g. Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website**http://www.erc.uonbi.ac.ke**

Protect to discover

Yours sincerely,

PROF. M. L. CHINDIA
SECRETARY, KNH-UoN ERC

c.c. The Principal, College of Health Sciences, UoN
The Director, CS, KNH
The Chairperson, KNH- UoN ERC
The Assistant Director, Health Information, KNH
Supervisors: Dr. Drusilla Makworo, School of Nursing, J.K.U.A.T
Rosemary Kawira, School of Nursing, J.K.U.A.T

Appendix XI: Research Permit from NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 491217

Date of Issue: 29/June/2020

RESEARCH LICENSE

This is to Certify that Ms.. Rose Mukeli Ngile of Jomo Kenyatta University of Agriculture and Technology, has been licensed to conduct research in Kiambu on the topic: FACTORS INFLUENCING UTILIZATION OF MODERN CONTRACEPTION AMONG FEMALE STUDENTS AT KENYA MEDICAL TRAINING COLLEGE, THIKA for the period ending : 29/June/2021.

License No: NACOSTI/P/20/5562

491217

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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