

**UTILIZATION OF CONTRACEPTIVES AMONG UNDERGRADUATE  
STUDENTS IN MASINDE MULIRO UNIVERSITY OF SCIENCE AND  
TECHNOLOGY (MMUST)**

**Eldah Ochieng Oburenji**

**A Thesis Submitted in Partial Fulfillment of the Requirements for the Award of the  
Degree of Master of Science in Nursing in the School of Nursing and Midwifery of  
Masinde Muliro University of Science and Technology**

**November, 2017**

## DECLARATION

This research Thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

Signature .....  ..... Date ..... 15/11/2017 .....

Eldah Ochieng' Oburenji

HNR/G/29/14

## Approval by Supervisors

This Thesis has been submitted for examination with our approval as

Signature .....  ..... Date ..... 15/11/2017 .....

 Prof. Charles Mutai

Dean School of Public Health, Biomedical Sciences

Masinde Muliro University of Science and Technology

Signature .....  ..... Date ..... 15/11/2017 .....

Mr. John Arudo

Department of Clinical Nursing and Health Informatics

Masinde Muliro University of Science and Technology

## **ACKNOWLEDGEMENT**

I acknowledge the contribution made by various people to this thesis. My greatest debt of gratitude goes to my supervisors Professor Charles Mutai and Mr. John Arudo for their great inspiration and valuable guidance. In addition, this study would not have been completed without my colleagues and friends contribution which greatly enriched the work. I wish also to express my gratitude to my family members; my husband Dr. Akhaukwa, son, Jerry Amunga and daughter, Irene Ayako for patience, support and understanding during my preoccupation with this work. To all I say thank you. Above all, I thank the Almighty God for the grace, good health and wisdom He gave me to accomplish this study.

## **DEDICATION**

This study is dedicated to my beloved parents; Rev. Simon Ochieng' and the late Mrs. Eunice Ochieng' for persuading me to go to school and to all those who have contributed to the fight against HIV/AIDS and unwanted pregnancies among the youth of this country.

**TABLE OF CONTENTS**

**DECLARATION..... Error! Bookmark not defined.**

**ACKNOWLEDGEMENT.....iii**

**DEDICATION.....iv**

**TABLE OF CONTENTS ..... v**

**LIST OF TABLES .....viii**

**LIST OF FIGURES ..... ix**

**LIST OF ABBREVIATIONS AND ACRONYMS ..... x**

**OPERATIONAL DEFINITION OF TERMS..... xi**

**ABSTRACT..... xii**

**CHAPTER ONE: INTRODUCTION..... 1**

1.1 Background to the Study..... 1

1.2 Statement of the Problem..... 3

1.3 Justification ..... 4

1.4 Study Questions ..... 5

1.5 Objectives ..... 5

1.5.1 Broad Objective ..... 5

1.5.2 Specific Objectives ..... 5

1.6 Conceptual Framework..... 6

**CHAPTER TWO: LITERATURE REVIEW..... 7**

2.1 Overview ..... 8

2.2 Prevalence of Pregnancies among the Youth..... 9

2.3 Effects of Pregnancy on University Undergraduate Students..... 10

2.4 Contraceptive use Among University Undergraduate Students ..... 11

2.5 Methods of Contraceptives ..... 13

2.5.1 Barrier Methods ..... 13

2.5.2 Hormonal Methods ..... 16

2.5.3 Natural Family Planning and Fertility Awareness..... 19

2.5.4 Surgical Methods .....	19
2.6 Factors Influencing Contraceptive Use.....	21
2.6.1 Socio- Demographic Factors.....	21
2.6.2 Contraceptive Knowledge and Utilization.....	22
2.6.3 Sources of Information and Contraceptive Utilization .....	23
2.7 Social Relation and Contraceptive Utilization.....	25
2.8 Addictive Behaviors and Contraceptive Use .....	27
2.10 Research Gaps.....	29
<b>CHAPTER THREE: METHODOLOGY .....</b>	<b>30</b>
3.1 Overview .....	31
3.2 Study Design.....	31
3.3 Study Area .....	31
3.4.0 Study Population.....	32
3.4.1 Inclusion criteria was .....	32
3.4.2 Exclusion criteria .....	32
3.4.3 Sample Size Determination.....	32
3.4.4 Sampling Procedure .....	33
3.5.1 Data Collection Procedures.....	33
3.5.2 Tool Development .....	34
3.5.3 Data Management .....	34
3.6 Reliability and Validity.....	34
3.7 Data Analysis .....	35
3.8 Ethical Considerations .....	36
<b>CHAPTER FOUR: RESULTS.....</b>	<b>36</b>
4.1 Overview .....	36
4.2. Socio-demographic Distribution of the Respondents .....	37
4.3 Extent of Contraceptives Utilization among Respondents .....	39
4.3.1 Socio-Demographic Characteristic and Contraceptives Prevalence.....	39

4.3.2 Contraceptive Knowledge and Utilization.....	42
4.3.3 Sources of Information and Contraceptive Utilization .....	44
4.3.4 Sources of Contraceptives and Utilization.....	45
4.4 Social Relation and Contraceptive Uptake .....	46
4.5 Influence of Addictive Behavior on Uptake of Contraceptive .....	49
4.6 Factors that Influence Contraceptives Uptake among the Respondents.....	50
4.7.1 Influence of Socio-Demographic Predictors of Contraceptives Uptake.....	50
4.7.2 Influence of Social Relation and Contraceptive Uptake.....	52
4.7.3 Influence of Addictive Behavior Uptake on Contraceptives .....	54
<b>CHAPTER FIVE: DISCUSSION.....</b>	<b>56</b>
5.1 Overview .....	57
5.2 Discussion.....	57
<b>CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS .....</b>	<b>66</b>
6.1 Overview .....	66
6.2 Conclusions.....	66
6.4 Recommendations.....	68
<b>REFERENCES.....</b>	<b>69</b>
<b>APPENDICES .....</b>	<b>85</b>
APPENDIX 1: CONSENT FORM.....	85
APPENDIX 2: QUESTIONNAIRE .....	87
APPENDIX 3: LETTER OF APPROVAL OF PROPOSAL.....	103
APPENDIX 4: LETTER OF ETHICAL APPROVAL TO CONDUCT RESEARCH....	104
APPENDIX 5: LETETR OF RESEARCH AUTHORIZATION.....	105
APPENDIX 6: RESEARCH PERMIT .....	106

## LIST OF TABLES

Table 4.1: Socio-Demographic Characteristics of the Respondents.....	38
Table 4.2: Socio-Demographic Characteristics of Respondents and Contraceptive Prevalence .....	41
Table 4.3: Sources of Information on Contraceptive and Utilization.....	45
Table 4.4: Sources of Contraceptives and Utilization .....	46
Table 4.5. Influence of Social Relation and Uptake of Contraceptive .....	48
Table 4.6 Influence of Addictive Behavior and Contraceptive Utilization .....	49
Table 4.7: Socio-demographic Determinants of Uptake of Contraceptive.....	51
Table 4.8. Influence of Social Relation and Uptake of Contraceptive .....	53
Table 4.9 Influence of Addictive Behavior and Contraceptive Utilization .....	55



## LIST OF FIGURES

Figure 1.1: Factors Influencing Utilization of Contraceptives .....	7
Figure 4.1: Contraceptive Knowledge and utilization .....	44

## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>AIDS</b>	Acquired immune deficiency syndrome
<b>APHRC</b>	African population and Health Research
<b>CDC</b>	Centers for Disease Control and Prevention
<b>FP</b>	Family planning
<b>GED</b>	General Education Development
<b>GVT</b>	Government
<b>HIV</b>	Human Immunodeficiency Virus
<b>MMUST</b>	Masinde Muliro University of Science and Technology
<b>PMTCT</b>	Prevention from Mother to Child Testing
<b>RH</b>	Reproduction Health
<b>STI</b>	Sexually Transmitted Infection
<b>TSS</b>	Toxic Shock Syndrome

## **OPERATIONAL DEFINITION OF TERMS**

**Addictive behavior:** Behavior that has become the focus of an individual life that may cause harm to the individual or others.

**Contraception:** The practice of utilizing methods intended to prevent pregnancy and sexual transmitted disease.

**Contraceptive uptake:** refers to picking or buying or using of contraceptives.

**Contraceptive Prevalence:** Refer to the proportion of undergraduate students who will report using or having used contraceptive method.

**Contraceptive utilization or use:** For this study will be reported actual utilization or intake of contraception.

**Religion Affiliated Schools:** Schools that are sponsored by religious organizations.

**Sexual relationship:** An intimacy relationship involving sexual intercourse.

**Sexuality:** Sexual activity

**Social relationship:** Relationship involving undergraduate students and their parents, peers, colleagues. Institution and partners.

**Undergraduate students:** Students who are in their first, second third, fourth or fifth year of the Bachelor's Degree Programme.

## ABSTRACT

Contraceptives uptake among the youth has been a sensitive and controversial issue in the society that has resulted to various social problems that include unwanted pregnancies and sexual transmitted infections among others. This calls for intervention measures that will promote contraceptive use in order to reduce unwanted pregnancies, sexual transmitted diseases and slow down the spread of HIV/AIDS among university students. The main objective of this study was to determine the utilization of contraceptives among undergraduate students in MMUST. Specifically, the study sought to determine the extent of contraceptive utilization, establish the influence of social relation on contraceptive utilization and examine the effect of addictive behavior on uptake of contraceptives. Quantitative research method which is contextual in nature was used for the study. Stratified random sampling was used to identify 453 undergraduate students from MMUST who participated in the study. Quantitative data was analyzed using both descriptive and inferential statistics. Descriptive statistics including frequencies and percentages were used to organize data and information for further analysis. Logistic regression analysis was performed to determine the association between the variables. The study revealed that contraceptive prevalence rate among the undergraduate students was 62.7% and majority (25.4%) of the users sought the services from government health facilities. The study also demonstrated that knowledge of contraceptive methods among the undergraduate students was 90% and condoms were the most preferred method (75.6%) followed by pills (15.1%). Electronic media was found to be the most popular (40.1%) source of contraceptive information. Age of respondents and the age at which the respondents left high school was found to have a significant influence on contraceptive utilization (OR=1.43: 95%CI=1.02-2.14,  $p<0.05$  and OR=1.88: 95%CI=1.21-2.92,  $p<0.05$  respectively). Also, there was significant association between male respondents who discussed sexuality with their fathers and peers (OR=1.56: 95%CI=1.05-2.35,  $p<0.05$  and OR=0.47: 95%CI=0.29-0.78,  $p<0.05$  respectively). Female respondents who discussed sexuality with their mothers, peers and partner were found to be significantly associated with contraceptive use (OR=0.54: 95%CI=0.31-0.95,  $p<0.05$ ; OR=2.47: 95%CI=1.01-6.05,  $p<0.05$  and OR=1.79: 95%CI=1.96-3.24,  $p<0.05$  respectively). Alcohol consumption and clubbing were equally found to have a significant influence on contraceptive uptake (OR=0.33: 95%CI; 0.18-0.59,  $p<0.05$  and OR=0.48 95%CI; 0.27-0.84,  $p<0.05$  respectively). It was thus concluded that although contraceptive prevalence among the university student was relatively high there is need to increase the usage. The involvement of parents, peers, partners and the university community was critical in regard to contraceptive utilization. Expansion of the distribution channels and use of adequate information and networks that provide a fundamental link between contraceptive awareness can improve utilization. This study recommends inclusion of contraceptive component in the university curriculum as an intervention to increase the uptake of contraceptive uptake among the youth. Also, involvement of parents, peers, partners and the university should be enhanced in order to support the government effort in its attempt to address unwanted pregnancies and the spread of HIV/AIDs among the youth.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Previous studies show that there are 1.8 billion young people worldwide and nearly 90 percent of these live in developing countries (Kayongo, 2013). One fourth of world population is between age 10 and 24 years while a third of the total population of sub Saharan Africa is aged between 10-24 years (Tessema & Bayu, 2013). The age between 15 and 24 years is where a large number of university students lie. Some studies have shown that this is the age group that begins to actively explore their sexuality (Kayongo, 2013).

According to the population reference bureau (2013) many girls aged 15 to 19 years were pregnant or had already given birth. This was cited in Zimbabwe, Senegal, and Colombia, where more than one in five teenagers from rural areas was affected. In Zimbabwe, Senegal, Colombia, and Peru, more than one-quarter of teens in this age group from the poorest 20 percent of households had begun childbearing. In Peru, the rate of early childbearing was nearly six times greater. The Ministry of State for Planning, National Development and Vision 2030 (2010), reported that youth (15 – 35 years) accounted for 38 percent of the total population in Kenya. Youth aged 10-24 constituted about 36 percent of the total Kenyan population (Kenya National Bureau of Statistics, 2009). The age of University undergraduate students happen to fall in this group. Previous studies indicate that Complications after unsafe abortion caused 13 per cent of maternal deaths (Nduvi, 2015).

Just like other students in institutions of higher learning, university students in Kenya engage in self-destructive behaviours that lead to sexual transmitted infections (STIs) or human immunodeficiency virus (HIV) and unwanted pregnancies (Kiptoo *et al*, 2013). To mitigate the dangers that come with unprotected sex, public clinics, hospitals and University clinics offer for free a variety of contraception methods. There is also the availability of the legal termination of pregnancy (TOP) services in Kenya (Fornos, 2016). However, unplanned pregnancies remain a problem among university students in Kenya. According to Kayongo (2013), young people do not realize that reproductive choices concerning family planning have a significant impact on their health, schooling and employment prospects, as well as their overall transition to adulthood.

Although many students understand that teen pregnancy is a major problem in Kenya, many college students struggle with pregnancy planning, resulting in numerous unplanned pregnancies (Frost *et al*, 2012). These unwanted pregnancies result in a large number of single parents who struggle with finances, interrupted or indefinitely postponed education, unstable relationships, and poor health, educational, and social consequences. Related studies in Kenya show that, there is a high prevalence of pregnancies amongst university students (Ikamari *et al*, 2013). Most of them encounter academic challenges as a result of their pregnancies.

## **1.2 Statement of the Problem**

Unsafe abortion is an important global public health issue. Every year, 20 million unsafe abortions take place globally, with predominance in developing countries (Department of Reproductive Health and Research, 2011). In Kenya, complications of unsafe abortion contribute 30-40 percent of all maternal deaths, exceeding the global average of 13 percent, making unsafe abortion a significant cause of maternal mortality in the country which stands at 486/100,000 live births (KNBS & ICF Macro, 2010). A study carried out by Innovations for Poverty Actions on the “magnitude of unsafe abortion in Kenya”, revealed that at least 2,600 women died from unsafe abortion and 21,000 were hospitalized annually with complications resulting from incomplete and unsafe abortion (Mumah *et al*, 2014).

In Universities in Kenya, pregnancy has continued to be a serious challenge among university students, most of who are in the age bracket of between 18 and 24. However the Government of Kenya and individual universities continue to provide support to students who become pregnant while still pursuing their programmes. The support provided include the affected students being given time off to deliver the babies and lactate before they can be allowed back and retain the scholarship in case of Government sponsored students. In countries like England, Scotland and Wales, such students are protected by the Equality Act (2010) which provide for legal protection for students during pregnancy and maternity. It stipulates pregnancy and maternity to be a protected characteristic and prohibits discrimination on such grounds (Equality Act 2010).

Majority of sexually active youth are not using contraception. Only 5 percent, nationally, use the most effective type (Keenan, 2015). This predisposes them to a wide range of reproductive health problems, including sexually transmitted infections like HIV/AIDS, teenage pregnancy, unsafe abortion practices and school dropout among others. Utilization of contraceptives among university students in Kenya and how they could be protected from a wide range of reproductive health problems I therefore a major concern. It was against this background that the study sought to determine utilization of contraceptives among university students in Kenya.

### **1.3 Justification**

The adolescents are among the university students population facing high risk of reproductive health problems. The study focused on this group because this population needed special attention in regard to their reproductive health. The population of the youth (15-30 years) in Kenya is about 9.1 million, accounting for 32 percent of the total population (Population Reference Bureau, 2013). The challenges brought about by HIV/AIDS, STI, unsafe abortions and early pregnancies directly affected the youth, their families and community at large. Despite all these, little, if any, attention has been paid to the prevention of unplanned pregnancies in curricular or co-curricular activities in institutions of higher learning. This is evidenced by the students' low attendance of family planning in Masinde Muliro University of Science and Technology clinic standing at 5-10 percent, according to the records in the University Clinic. In Kenya, university clinics provided support for female students, yet in many instances preventing unplanned pregnancy had been a minor focus in this endeavour. This resulted to numerous cases of unplanned pregnancies amongst students in universities that posed numerous challenges



at social psychological and economic levels. In order to achieve a reduction in extreme poverty and hunger, spread of HIV/AIDS, maternal and child mortality, and ensure the attainment of universal primary education and improve sustainable development, there was need to establish the challenges and problems that faced the youth and the complexity of the problems, in universities in Kenya.

#### **1.4 Study Questions**

1. What is the extent of contraceptives utilization among university students in MMUST?
2. How does social relation influence contraceptive utilization among undergraduate students among university students?
3. How does addictive behavior influence the uptake of contraceptives among University students?

#### **1.5 Objectives**

##### **1.5.1 Broad Objective**

To determine the utilization of contraceptives among undergraduate students in Masinde Muliro University of Science and Technology (MMUST).

##### **1.5.2 Specific Objectives**

The study sought to address the following specific objectives

1. To determine the extent of contraceptive utilization among undergraduate university students.

2. To establish the Influence of social relation on contraceptive utilization among undergraduate students
3. To examine the influence of addictive behavior on uptake of contraceptives among undergraduate students.

### **1.6 Conceptual Framework**

Contraceptive uptake among youths is influenced by interaction among several of factors that include gender, age, religion and nature and type of school attended. Other factors include social relationship, status of parents, accessibility, knowledge and addictive behavior. At individual level, age, gender parity, conceptive sources and knowledge and addictive behavior such as alcohol consumption, clubbing, parting and smoking are likely to have an influence on the uptake of contraceptives. At the level of social relation, involvement of parents, peers, university employees and partners influence the individual's conception choices and therefore uptake. Besides, contraception service delivery factors such as availability of health facilities and various methods on contraception including ease of use influence uptake of contraceptives. This conceptual framework was adopted from a study by Kayongo (2013) with some modifications to conform to the objectives of the study.

### **Independent Variables**

6

#### **Individual Factors**

- Demographic factors i.e. age, education, gender, religion, education, marital status etc.

**Figure 1.1: Factors Influencing Utilization of Contraceptives**

## **CHAPTER TWO**

## LITERATURE REVIEW

### 2.1 Overview

In some regions of the world early childbearing remained common practice until 2008 when adolescents aged 15–19 years in developing countries had an estimated 14.3 million births and 3.2 million abortions (WHO, 2015). In 2007 it was reported that two-thirds of unintended pregnancy in developing countries occurred among women who were not using any method of contraception. Globally significant unmet need for contraception was estimated to be between 123-200 million (Kost, 2012). The unmet need for contraception in developing world was estimated to be about a hundred million (Ibid).

Most of the students in the universities are between 20 and 24 years old indicating that they are emerging adults. For instance students of University of Nairobi reported that parents viewed them as independent adults who should be responsible for themselves. They therefore seemed to have more autonomy over how they lived. On the other hand students from Strathmore University seemed to be more dependent on their parents, and had more parental control over their lives (Kananu, *et al*; 2014). A study done in the University of Lagos revealed that quite a sizeable number of female university students are adolescents, 77 of them representing 28.4 percent were below the age of 20 (Alabi, 2014). Student pregnancy is mostly associated with frequent sex without reliable or no contraceptives, peer pressure, inadequate knowledge about sexuality, sexual coercion, proof of fertility, poor socio-economic conditions and promiscuity (Sibeko, 2012). A report on teenage pregnancies showed Kenya to be among the countries with a large number of adolescent pregnancies globally. According to Alabi (2014), Kenya

contributes to this number by having 103 in every 1000 pregnancies being attributed to girls between 15 and 19 years.

## **2.2 Prevalence of Pregnancies among the Youth**

Among 35 developed countries for which youth pregnancy rates could be calculated, Romania has the highest rate, that is, 61 per 1,000 women aged 15–19 in 2011. Abortion data for Romania are incomplete; therefore, the true pregnancy rate (calculated based on births, abortions and miscarriages) in this country may be even higher than estimated (WHO, 2015). Britain, despite being one of the world's biggest users of contraceptives, has a sky-high level of pregnancies, with 2.9 of every 100 girls aged between 15 and 19 years giving birth every year. France with less use of contraceptives stands at 0.9 per every 100 girls while Germany has 1.1 per every 100 girls giving birth (Doughty, 2001). In 2013, in USA a total of 273,105 babies were born to women aged 15–19 years, for a live birth rate of 26.5 per 1,000 women in this age group (Martin, 2013; WHO, 2015). At least 36 percent of pregnancies in every U.S. state are unintended. States with the highest unintended pregnancy rates in 2010 were Delaware, (62 per 1,000 women aged 15–44), Hawaii, New York (61 each) and Maryland (60) (Kost, 2015). In Columbia, more than half of pregnancies are unintended. The proportion of pregnancies that are unintended generally decreases as age increases (*Ibid*).

Teen pregnancy rates are far higher in Sub-Saharan African countries like Burkina Faso and Ethiopia than in developed countries. They range from 121 per 1,000 women aged 15–19 in Ethiopia to 187 per 1,000 in Burkina Faso. In these four countries, where abortion is largely illegal, teen abortion rates range from 11 in Ethiopia to 38 in Kenya

(WHO, 2015). In Sub-Saharan Africa as a whole, about 35 percent of pregnancies among 15–19-year-olds in 2007 were unintended (Santelli *et al*, 2009-10).

### **2.3 Effects of Pregnancy on University Undergraduate Students**

The high social and economic costs of youth pregnancy and childbearing can have short- and long-term negative consequences for young parents, their children, and their community (Osulah, 2007). In Kenya, majority of university students, though adults are still under the care of parents and do not have sources of income. The students affected by pregnancy need time and good health to concentrate on their studies and adequately prepare for their exams so that they can pass well and look for employment, which is often awarded on the basis of good certificates (Ochieng, 2016). Some of the challenges pregnant university students experience as they try to balance between parenthood and studies include: interruption or termination of education, deprivation and poverty, it attempts to satisfy unmet emotional needs for intimacy, bonding and being needed. It also relates to the girl's search for identity or becoming a mother as the girl feels she has attained a certain identity and status (Sibeko, 2012). Statistics show that many young women who become pregnant while attending college and choose to parent their child will quit school and often never return (Mangel, 2010). Most times pregnant students drop out of school due to pressures they experience, including stigmatization associated with early pregnancy; isolation from friends; and lack of provision from family, friends, schools, social service agencies, and other organizations (Kost, 2015). In the case of pregnancies resulting from peer consensual sex, the education of girls is likely to suffer more than that of their male counterparts (Ochieng', 2016). By age 22, only around 50 percent of teen mothers have received a diploma and only 30percent have earned a

certificate, whereas 90 percent of women who did not give birth during adolescence receive diploma (National Center for Health Statistics, 2011). Teen fathers have a 25 to 30 percent lower probability of graduating from high school than teenage boys who are not fathers (Fletcher & Wolfe, 2012). Up to 13,000 Kenyan girls drop out of school every year as a result of unintended pregnancy.

Unsafe pregnancy termination contributes to maternal mortality which currently estimated at 488 deaths per 100,000 live births (Lawrence *et al*; 2013). The desire to continue with one's education has led to procuring abortions among Kenyan undergraduate students. This may also be due to the adverse social effect that having a child may have on the lives of the students. This may be in the form of stigma, reputation being tainted, burdens on their relationships, and so on (Kananu *et al*, 2012). Children born to teenage mothers are also more likely to suffer health, social, and emotional problems than children born to older mothers. Women who become pregnant during their teens are at increased risk for medical complications, such as premature labor, and social consequences (Remedy Health Media, 2015).

#### **2.4 Contraceptive use Among University Undergraduate Students**

Research studies have shown that the prevalence of regular contraceptive use in undergraduate University students in Ethiopia was (23.5 percent), indicating very low utilization. The most preferred methods were Pills (56.2 percent) followed by injectables at (19 percent) (Tessema & Bayu, 2013). Despite the fact that sexually active unmarried adolescents are not interested in getting pregnant, and married adolescents do not wish to become pregnant at a young age or, if they have already had a child, wish to delay a

second pregnancy, contraceptive prevalence rate in Sub Saharan Africa generally remained low. It was reported to be at only 21 percent while adolescent girls as the age group with the lowest contraceptive prevalence rate (Tessema *et al*; 2013).

In a Tanzanian hosted conference paper it was cited that more than half of the youth participants had ever used any contraceptives while slightly below half were users at the time. Among the users the most common contraceptive methods were condoms (56.0 percent), periodic abstinence (17.6%) and withdrawal (16.2%). The periodic abstinence was the commonest contraceptive method used among unmarried students (73.7%), while pills were the method of choice among married participants (66.7%). (Somba.*et al*, 2013).

A study done on contraceptive preferences among undergraduate University students in Ghana revealed that majority of students respondents preferred pills as the main contraceptive methods to condoms, vasectomy, IUD and Norplant. About six participants preferred a combination of two contraceptive methods, for instance, pills and condoms (Appiah-Agyekum and Kayi, 2013). Another study done in Nigeria showed that, male students' preference for condom use was 45.2percent. While those who did not use condoms preferred their partners to use some form of contraception. Majority (49 percent) of female students preferred traditional contraceptive methods such as fertility awareness, whereas 28 percent preferred modern (artificial) contraceptive methods (Iyoke *et al*, 2014). A significant proportion (45.2 percent) of sexually active male students preferred modern contraceptives compared to females 28 percent for female (Trussell, 2007). While a study in South Africa reported that 56 percent of women aged between



18-44 years used hormonal contraception, 69 percent used barrier methods (mainly the male condom), and 7 percent used permanent methods. Across all three groups, hormonal contraceptive users utilized contraceptive injectables more commonly than oral contraceptives (Laher *et al*, 2010).

## **2.5 Methods of Contraceptives**

According to Siegel (2013), contraception is the deliberate prevention of conception or impregnation by any of various drugs, techniques, or devices (birth control) Evidence from literature shows (Shwartz, 2016, Kindersley, 2014,. Family planning, 2015, Bayu 2013, Ripley and Salem, 2012, Tripp and Viner, 2005) that there are various contraceptive methods available both for male and female that can be used to prevent unwanted pregnancies and sexually transmitted diseases (STD, including human immune deficiency virus (HIV) infections. These methods include barrier, hormonal, intra uterine device and natural family planning including the rhythm or calendar.

### **2.5.1 Barrier Methods**

Barrier methods of birth control are physical or chemical barriers that prevent sperm from passing through the woman's cervix into the uterus and fallopian tubes to fertilize an egg. Some methods protect against sexually transmitted disease (STDs). Barrier methods include Diaphragm, Sponge, Cervical cap, Male condom, Female condom and Spermicide.

The traditional diaphragm is a latex dome with spring molding in the rim. When inserted, it covers the cervix, preventing pregnancy. It's a simple enough design. It has improved

over time from a traditional latex material, which is sticky to the touch, to a softer silicone material. The insertion process is also simpler, replacing a metal round hoop spring that needs to be squeezed hard for insertion with a contoured nylon spring that has finger grips (Shwartz, 2016). The side effects are lesser because it is not hormonal. Allergic reaction expected in women who are allergic to silicon. This method is highly recommended to youth because it is not hormonal. It should be used with a backup method for those at risk of HIV.

On the other hand, the sponge is a round piece of white plastic foam with a little dimple on one side and a nylon loop across the top. It is two inches across—and inserted way up in the vagina before sexual intercourse. The sponge works in two ways: It blocks the cervix to keep sperm from getting into the uterus, and it continuously releases spermicide. Once the sponge is in, a woman can have sex as many times as she wants within a 24-hour period. It is left in place for at least 6 hours after the last time you have sex (NSW, 2015)

Cervical cap is much smaller than the diaphragm, and looks similar to a very large thimble. It fits over the cervix. They come in different shapes for a variety of vaginas and cervixes. Before insertion, the cap is one third filled with spermicide, squeezed between finger and thumb in order to get it into the vagina. Finally, put it over the cervix – where it's held in place by suction. It should stay in all night after sexual intercourse (Kindersley, 2014). Very few youth are willing to use this method because of its “complexity” as they put it. According to Kiley, (2008) some of the reported side effects of this method are; recurrent dislodgment during coitus, malodor, and discoloration of the

cap, vaginal or cervical irritation, and even damage to the vaginal mucosa. These side effects are experienced when the cap is left in place for longer periods of time. The risk of developing TSS increases with extended time intervals between insertion and removal

The male condom is a form of contraception for men. It also protects against sexually transmissible infections (STIs). It is a fine barrier which is rolled on to a man's penis before sex. It is used as a barrier to stop sperm and infection passing between sexual partners. It is usually made of rubber (Family planning, 2015). This is the most preferred method by youth because it is easily available with very minimal side effects. According to study by Bankole and Onasote (2016), condom use was highest among male adolescents in Ghana (68 percent) and lowest in Malawi (50 percent). Evidence from previous studies also affirms that condom is the most commonly used method of contraceptive (Hoque et al., 2013).

Similarly, the female condom is a birth control device that creates a barrier to prevent the sperm from getting to the uterus. It also protects against infections spread during sexual contact, including HIV. This condom fits inside the vagina. The condom has a ring on each end. The ring that is placed inside the vagina fits over the cervix. The other ring is open. It rests outside of the vagina and covers the vulva (Trussell, 2007). The method is not widely known among the youth and rarely available in Kenya. A study by Kaywin found that some people are allergic to latex or polyurethane and may have allergic reaction (Kaywin, 2015).

In addition spermicide is a birth control method that contains chemicals that stop sperm from moving. Spermicides are available in form of creams, film, foams, gels, and

suppositories. They are inserted vaginally prior to intercourse to prevent pregnancy (Bayu, 2013). The method is not widely known by youth. Spermicides have no effect on a woman's natural hormones and do not affect milk outflow during lactation. However, some of the risks associated with this method include vaginal burning and irritation. Women who are allergic to spermicide may suffer from allergic reactions of varied nature. Spermicides containing nonoxynol-9 do not prevent one from STIs and HIV and may increase risk of contracting HIV if used several times a day (ACOG, 2016)

### **2.5.2 Hormonal Methods**

Hormones are estrogen and/or progesterone, or preparations that contain a combination of these hormones. There are various hormonal methods that include oral contraceptives, Contraceptive Patch and Vaginal Ring, Injection (Depo-Provera) and intra uterine Device

Oral contraceptive Pill is taken by mouth on a daily basis and at the same time each day. There are two kinds of oral contraceptives, the combined oral contraceptive (COC) (estrogen and progestin). It works by preventing the ovary from releasing an egg, thickening the cervical mucus making it difficult for the sperm to reach the egg, and changing the lining of the uterus making implantation difficult (Bayu, 2013). The progestin-only contraceptive (POP) contains no estrogen. It works by thickening the cervical mucus making it difficult for the sperm to reach the egg, changing the lining of the uterus making implantation difficult, and may sometimes inhibit the release of an egg. This method is preferred by youth due to its availability both on counter and in most health facilities. According to Tamire & Enqueselassie, (2007), oral contraceptives are the most popular hormonal method among university students in Ethiopia.

Another hormonal method is morning after/emergency contraceptive pills that is taken by mouth within 72 hours of unprotected sexual intercourse. Used to prevent pregnancy after a woman has sex without birth control, after the method she was using has failed, or if a woman is raped. This include progestin only pills, ulipristal. They are taken in specific amounts, or a copper intrauterine device. The pill must be taken or IUD inserted within five days of unprotected sex to reduce the risk of pregnancy (Spencer *et al*, 2009). Youth are familiar with this method. It is a widely used method, However, it has been pulled out of the counter due to misuse. Sold with prescription only.

The above birth control pills have been found to have common side effects that include inter menstrual spotting or breakthrough bleeding. This may occur due to the uterus adjusting to having a thinner endometrial lining, or due to the body adjusting to having different levels of hormones. Mood changes, some people do experience depression or other emotional changes while taking the pill. Other side effects are; missed periods, decreased libido, Nausea, breast tenderness, headache, weight gain, vaginal discharge and visual changes with contact lenses (Smith, 2017)

On the other hand, contraceptive patch is a patch that sticks to a woman's skin and continuously releases estrogen and progestin into the bloodstream. The patch prevents pregnancy by stopping the ovaries from releasing an egg, but it may also thicken the cervical mucus and make the uterine lining thin. One patch is worn each week for 3 weeks. The fourth week is patch-free, allowing menstrual period to occur. The patch can be worn on the buttocks, abdomen, back or upper arms, but not on the breasts. It may

help to change the location a bit each week. The patch should be applied to clean, dry skin. You should not use any creams or lotions near a patch you're already wearing, or where you'll be applying a new one (Shriver, 2013).

Likewise Vaginal Ring is a soft, flexible, clear plastic ring and is inserted into a woman's vagina where it slowly releases estrogen and progestin for three weeks. These hormones enter into the woman's bloodstream and prevent pregnancy mainly by stopping the ovaries from releasing an egg. It may also thicken the cervical mucous and make the uterine lining thin. The ring is worn inside the vagina for three weeks, followed by a one-week (seven day) ring-free interval. When the ring is removed, a woman usually has a period within a few days. At the end of the ring-free week, the woman inserts another ring to begin a new cycle. The ring should be left in place during sex (Nsubuga et al., 2016).

Far fewer young women use implants, with rates of use below 1 percent nearly everywhere. Data from the same surveys shows that despite the high awareness of hormonal methods among youth, there is much lower rates of use among adolescent's ages 15 to 19 years than among young adults ages 20 to 24.

Related to the above is Depo-Provera which is a hormonal birth control method that contains a progestin. It is administered by a needle in the muscle of the arm or buttocks every 12-13 weeks. It stops ovaries from releasing an egg every month (ovulation). It also thins the lining of the uterus (Smith, 2016). According to a study by Tamire and

Enqueselassie (2007) found that oral contraceptives or injectables are the most popular hormonal method among university students in Ethiopia.

Another hormonal method is the Intra-uterine Device (IUD) that is made up of a small T-shaped frame with a small cylinder containing the hormone levonorgestrel. IUD is inserted in the uterus through the cervix. This cylinder slowly releases the hormone that acts on the lining of the uterus. The lining of the uterus becomes thinner and the cervical mucus becomes thicker which makes it harder for sperm to enter the uterus (Kindersley, 2014). Most youth know about this method and are using it.

### **2.5.3 Natural Family Planning and Fertility Awareness**

Natural family planning is a method that a woman monitors her menstrual cycle to predict those days when she is most likely to conceive from unprotected sex. In Rhythm method is calculation of a woman's cycle is done in order to determine fertility time and is only possible if a woman has regular 28-day periods. In Fertility Awareness, it requires a woman to monitor cervical fluid, temperature and symptoms daily for changes in response to the hormones that cause ovulation. In either case, abstinence or use of barrier method during fertile times must be practices in order to prevent pregnancy (Herbert, 2015). This method is not advised in youth because their cycle has not yet stabilized. This method needs time and patience to learn it.

### **2.5.4 Surgical Methods**

The most common surgical method of contraceptive are tubal occlusion for female and vasectomy for male. Female sterilization-operative sterilization is done via tubal occlusion which is highly successful and safe, and has a low risk of complications. The fallopian tubes are occluded by ligation, blocking with clip or rings or cauterization. It may be done as a laparoscopic procedure or as a laparotomy. It can be done on the outpatient basis as ambulatory surgery. After the procedure, women may resume having sexual intercourse as they feel comfortable (Ripley and Salem, 2012). The method is not recommended for the youth because it is non-reversible.

On the other hand, Vasectomy is surgical sterilization of a man. It ensures that no sperm will exit from his penis when he ejaculates during sexual intercourse. The vas deferens (tubes that carry sperm from the testicles into the urethra, also known as ductus deferens) from each testicle is severed and open ends are then closed off. It involves making two small openings in the scrotum. It does not interfere with a man`s ability to erect or quality of his ejaculatory fluid (Bayu, 2013). The method is not recommended for the youth because it is non-reversible.

Although we have various methods of contraceptive available for combating consequences of irresponsible sexual behavior among university students, evidence for literature review show that the most preferred methods include condoms, pills, injectables and intra uterine devise. For instance a study by Bankole and Onasote (2015) (2016) demonstrated that the most commonly known contraceptive method was the male condom, cited by 98.1% of respondents. This was followed by oral pills, known to 90.0%, injectables (86.1%), the female condom (70.5%), emergency contraception



(65.3%) and intra uterine devise (IUD) (50.3%). The least known methods of contraception were female sterilization (22.8%) and male sterilization (16.0%). This findings were affirmed in a study by Nsubuga et al. (2016) on contraceptive use, knowledge, attitude, perceptions and sexual behavior among female University students in Uganda. The finding of this study revealed that The most commonly known modern methods were pills (86.7 %) and male condoms (88.4 %), followed by injectables (50.3 %), IUDs (35 %) and implants (26.7 %), female condom (22.1 %), while withdraw (34.2 %) was the most commonly mentioned traditional methods.

Further the Central Statistics Office (2006) found that condom is the most commonly used method, among both males and females, followed by the withdrawal method. According to Somba et al. (2014) the most popular method of contraception used were condoms, withdrawal and periodic abstinence. A study by OyeAdeniran et al. (2006) on community-based study of contraceptive behavior in Nigeria also affirmed that female and male sterilization were the least known contraceptive methods among young women of child bearing age in Nigeria.

## **2.6 Factors Influencing Contraceptive Use**

Review of literature suggest several factors that affect utilization of contraceptives. These factors comprises socio-demographic, contraceptive knowledge and sources of information regarding contraceptives.

### **2.6.1 Socio- Demographic Factors**

Various studies have demonstrated that Socio demographic factors such as age, gender, education, parental status and religion play a very critical role in determining contraceptive utilization. For instance studies by Karl and Pengpid (2016) regarding contraceptive non-use and associated factors among university students in 22 countries found that age and religion affiliation were not associated with the use of contraceptive. While a study by Musiime and Mugisha, (2015) found that among the sexual active youths who had both parents alive, 67% had used contraceptives the last time they had sex while among Orphans, only 39% had used contraceptives the last time they had sex.

Regarding the type of school attended Musiime and Mugisha (2015), revealed that 63% of students from Students of Uganda Martyrs University who had attended mixed schools had used contraceptives the last time they had sex compared to 52 % from single set school (52%). Further the study revealed that students from mixed schools are more likely to use condoms than those from single set schools. Regarding gender, the study also found that male students were 2.5 times more likely to use condoms than female students (OR=2.49. CI=1.95-4.15).

### **2.6.2 Contraceptive Knowledge and Utilization**

Previous studies have shown that knowledge of contraceptive is likely to determine contraceptive choice and therefore utilization. A study by Hoque *et al.* (2013) on the awareness and practices of contraceptive use among university students in Botswana found that male and female students had 'good awareness regarding contraceptives' as more than half of them (58.6% and 59.1%) for both males and females respectively scored nine or above. The males and the females also had almost 'similar awareness' as

their mean scores were 8.79 and 8.72, respectively. A similar study by Nsubuga *et al.* (2016) reported knowledge of contraceptives was nearly universal (99.6 %) and the most commonly known modern methods were pills (86.7 %) and male condoms (88.4 %), followed by injectables (50.3 %), IUDs (35 %) and implants (26.7 %), female condom (22.1 %), while withdrawal (34.2 %) was the most commonly mentioned traditional methods. Interestingly, a study by Oyedokun, A. O. (2007) found no association between the level of awareness and contraceptive use. The awareness level was ‘good but’ there is still a need to investigate, if this ‘awareness results’ can be acceptable for use, since literature generally agrees that better ‘awareness’ about contraception, increases the chances of better contraceptive practices.

Further findings by the Central Statistics Office (2006) indicate that although respondents had wide knowledge of various contraceptive methods 93.3% of the sexually active participants used condoms. While among the university students in Ethiopia the contraceptive method mostly used was the pill, followed by the injection Tamire and Enqueselassie (2007). Somba *et al.*, (2014) found the most popular method of contraception used were condoms, withdrawal and periodic abstinence. However the majority of the respondents in the study had knowledge of contraception, but we found that the utilization of contraception is still low. It is therefore evident from the findings of the previous studies that there exist a disparity between knowledge and contraceptive utilization.

### **2.6.3 Sources of Information and Contraceptive Utilization**

Findings from previous studies have provided evidence of a link between sources of information and contraceptive utilization. The information relates to availability of various methods of contraceptive, side effect of these methods and accessibility of the contraceptives. According to Oguntona et al., (2013) the electronic media ranked next to peer group as the leading sources of information on contraception among undergraduates in Lagos, Nigeria. Manda (2008), in a study of access to and use of reproductive health information by university students in Tanzania, found that the students had access to several sources of sexual and reproductive health information, but actual use was concentrated on radio, television and friends. However a study by Bankole and Onasote (2015) show that the respondents strongly preferred physicians/health workers (mean: 4.62) and parents (mean: 4.54), university lectures (mean: 4.11), Internet/websites (mean: 4.06), chemists/ patent medicine vendors (mean: 3.78), newspapers/ magazines (mean:3.72), television (mean: 3.71), friends (mean: 3.64) and radio (mean: 3.62). The library was placed in the 11<sup>th</sup> position, third from the bottom in terms of preference.

A study done in Nigeria established strategies to increase contraceptive use to be; taking into consideration the quality, quantity, and variety of methods available, and to building capacity for effective service delivery (Adeniran *et al.*, 2005).

In their study, Lindberg *et al.* (2006), and Anochie and Ikpeme (2003) indicated that close to half of the boys and girls identified mass media channels and friends as sources of useful information on contraceptives. Similarly, the result of a study by Iyoke (2014) showed that receiving information from health personnel, media, or workshops (odds

ratio 9.54, 95% confidence interval 3.5–26.3), health science-related course of study (odds ratio 3.5, 95% confidence interval 1.3–9.6), and previous sexual exposure prior to university admission (odds ratio 3.48, 95% confidence interval 1.5–8.0) all increased the likelihood of adherence to modern contraceptives, while age group, year of study, and Christian denomination had no significant predictive effect. These results are supported by the findings from a study by Olubank et al., (2016) which indicate that the most common sources of information regarding contraception were friends, television (both public- and private-owned), and health facilities. Similar finding was reported in a study in Botswana, but it is in contrast to a study done in Nigeria which indicated hospital or clinics to be the most common source of information on contraceptives (Hoque et al., 2013). The most common sources of information about contraception were friends/peers (44.8%), television, and health facilities (40.3%). Most (93.8%) of the respondents were aware of the types of contraceptives. Condoms (78.0%) and pills (60%) were the most commonly heard of contraceptive methods, respectively, (Sweya, et al., 2016).

## **2.7 Social Relation and Contraceptive Utilization**

A study by Lebesse (2013) showed that friends contributed to access to sexuality information. However, this was often insufficient to help the girls adjust their sexual behavior. Since male adolescents are perceived as having more decision-making power than their female counterparts. The study concluded that it is important to encourage male involvement in reproductive health programs, as this may contribute to the reduction of the HIV pandemic, sexually transmitted infections and unwanted pregnancies. According to Velasco and colleagues, women in Bolivia, who were often too shy to discuss

contraceptive use with their husbands, expressed even greater fear about talking to a male provider

Purvis *et al* (2014) carried out a study on *Parental Involvement and Contraceptive Use Frequency during College* and found the frequency of contraceptive use during college and parental involvement during adolescents indicated a positive correlation between contraceptive use frequency among females and their father's involvement. Females who reported higher rates of father involvement reported higher frequency of contraceptive use. In addition, frequency of hormonal contraceptive use among females was positively related to mother's involvement during adolescents. The study further reported that African American females most frequently reported that their father was "never" in their lives 19.8% of the time compared with White females who reported only 3.2% of the time that their fathers were never involved. Racial differences were statistically significant when examining the reported father involvement by both males ( $p=.007$ ) and females ( $p=.000$ ). No statistically significant differences existed between mothers' involvement and racial differences. One very interesting finding within the study is the lack of a statistically significant relationship between female sexual behaviors, contraceptive use, and mothers' involvement. Research has continued to indicate that adolescent and emerging adult females desire male attention and when they do not receive the attention from a father figure they will look elsewhere for said attention. One final possibility is that females may participate in safer sexual behaviors through the use of contraceptives as a result of respect for their fathers and potentially fear of their father's reaction to an unplanned pregnancy.

A study by Iyoke (2014) found that an overwhelming proportion of university students obtained the information that enabled them to make choices about contraception from peers. This is similar to the findings of studies in other parts of Nigeria. For instance, in the study by Ezebialu and Eke (2013) 51% of students obtained contraceptive information from friends, whereas in the study by Abiodun and Balogun (2009) in Ilorin, approximately 74% obtained contraceptive information from friends. It would appear, therefore, that contraceptive information among students in tertiary institutions of learning in Nigeria is largely peer-driven. It was concluded that with an apparent low level of knowledge of contraceptives among young people, a high dependency on peer information by young people could result in the poor uptake of modern methods of contraception or the use of nonpharmacological agents or off-label drug use with unproven contraceptive efficacy. Sexual behavior is therefore one of the many areas in which teens are influenced by their best friends and peers. If teens believe their friends support condom use or actually use condoms, chances are greater that they will use condoms themselves.

## **2.8 Addictive Behaviors and Contraceptive Use**

Alcohol addiction was associated with increased likelihood of sexual activity and a concomitant increase in unprotected sex (Michael et al., 2009). Ingersoll et al., (2008) found risk drinking to be related to ineffective contraception and condom use (Karen et al., 2008). A research done by Ingersoll et al., (2014) show that, rates of binge drinking and ineffective contraception or ineffective condom use among college women was high. They said that women reported of both risk level drinking and ineffective condom use,

and a handful reported of both risk level drinking and ineffective contraception that may have led to unplanned pregnancy (Ingersoll et al, 2014). Interestingly in their study, Mehra et al., (2012) were surprised to find that alcohol consumption did not have an association with non-use of contraception in our sample.

Several studies had concluded that alcohol abuse by university students was associated with elevated rates of risky sexual behavior with regard to inconsistent condom use. In such relationships both instigator cues (arousal) and inhibitory cues (restraint) are presumed to be high, as each partner weighs potential sexual health risks. According to the alcohol myopia theory, alcohol may limit a person's capacity to weigh negative outcomes. A study by Gilchrist (2012) show that more frequent alcohol consumption was significantly associated with reports of negative sexual experiences ( $p < .01$ ). Single-episode heavy drinking was related with not using condoms ( $p < .05$ ) and negative sexual experiences ( $p < .01$ ). These relationships did not vary significantly by age, country of birth, or place of residence.

Musiime and Mugisha (2015) found that of those respondents that agreed to having friends who consume alcohol, 99% had had sex under the influence of alcohol either all the time or some times. It is only 1% that had never had sex under influence of alcohol at all. This finding concurs with a study that was conducted in Wolaita Sodo University in Ethiopia where a significant association was found between alcohol intake and sexual activity (Gelibo, et al., 2013). Tripp and Viner (2005) argue that unsafe sex was associated with having sex while drunk or stoned or inadequate self-efficacy to resist pressure. Consequence of irresponsible sexual behavior included sexually transmitted



diseases (STD) including human immune deficiency virus (HIV) infections and unwanted pregnancies

Studies have also associated parting and clubbing by university students as a source of risk sexual behavior. For instance Harford et al., (2003) and Wechsler et al., (2000) posit that parties constitute an integral part of the college culture and serve as primary settings where students engage in heavy drinking, often leading to negative outcomes. Some of the things that can go wrong at teenage parties and clubs include: binge drinking, unprotected sex and sexual assault among others. According to Pedersen and LaBrie (2007) the pervasiveness of “pre-partying” behaviors (alcohol consumption prior to attending an event where more alcohol may be consumed) has also been documented among collegiate populations. Further, research has shown that students’ drinking behaviors at college parties vary as a result of their own individual characteristics like gender (males vs. females) and perceived campus drinking norms, as well as party specific situational influences, such as party size, location, duration and level of social control (Demers et al., 2002).

Research also suggests that students are more likely to binge drink when presented with the opportunity to “get drunk” without having to worry about safety issues like driving when intoxicated or engaging into unprotected sex (Lange et al., 2002). Studies have also demonstrated that cigarette smoking adversely affects cycle control among oral contraceptive users (Rosenberg et al., 2016). The study further found oral contraceptive efficacy impairment in smokers.

## **2.10 Research Gaps**

Concerns have been raised regarding the extent of contraceptive use among undergraduate students in universities in Kenya. Most studies reviewed show that the use of contraceptives can protect the youth from a wide range of reproductive health problems such as sexually transmitted diseases, unwanted pregnancies, unsafe abortions and maternal mortality. The studies farther revealed the causes of pregnancies and the associated social, psychological and economic effects. However, little information is provided on the utilization of contraceptives among university students in Kenya. It is against this background that the study seeks to investigate contraceptive use, factors associated with uptake, and the effects associated with unwanted pregnancies. This is because, despite the students being knowledgeable enough to understand more on family planning methods, unwanted pregnancies, unsafe abortions, spread of sexually transmitted infections among them is still a global problem.

This study demonstrates how the students utilize the contraceptives provided by the University clinic so that they can reduce pregnancies that affect their studies. In addition, developing of policies, and generally Public Health policies by the University are done from the outcome of these results. Other universities can borrow from the results of this study to formulate policies to improve University education performance, and lastly, other researchers in the same area will use the results of this study as reference materials.

## **CHAPTER THREE**

### **METHODOLOGY**

### **3.1 Overview**

This chapter contains the methodological base used in the study including; research design, study area, study population, sampling procedure, sample size, data collection procedures, reliability and validity, data analysis and presentation, pre-test and ethical considerations.

### **3.2 Study Design**

This study employed a descriptive cross sectional survey design. A descriptive study design is convenient in collecting substantial amount of data from respondents (Koul, 1997). According to Kothari (1992) descriptive data are obtained through the use of questionnaires, interview and observation methods. A descriptive survey research design was therefore used to investigate the factors influencing utilization of contraceptives among undergraduate students at Masinde Muliro University of Science and Technology

### **3.3 Study Area**

The study was carried out at Masinde Muliro University of Science and Technology (MMUST), main campus. This was purposively selected due to its accessibility, its target group and it serves undergraduate students from all over the country. MMUST is situated along the Kisumu Webuye road in the western part of Kenya, in Kakamega County, Kakamega town, about a kilometer west of the central business district of Kakamega town. MMUST stands on a 140 acre plot of land with a population of 21,454 undergraduate students. The study was done in the MMUST clinic situated at the main campus. The clinic has a staff of 34, among them, we have one (1) medical officer, five (5) clinical officers and seven (7) nurses. All the nurses have basic knowledge in family

planning while three (3) of them have specialized in family planning. The MMUST clinic has a variety of contraceptives procured through the Ministry of Health.

### **3.4.0 Study Population**

The study population comprised of a population of 21,454 undergraduate students in MMUST's main campus. The study population gender ratio was male: female, 49.6%: 50.4% respectively.

#### **3.4.1 Inclusion criteria was**

- i) MMUST undergraduate students
- ii) Students who consented to participate in the study

#### **3.4.2 Exclusion criteria**

- i) Students who did not belong to MMUST (main campus).
- ii) Students who failed to consent to participate in the study

#### **3.4.3 Sample Size Determination**

The sample size was determined using Fischer *et al.*, 1998 formula.

$$n = \frac{z^2 pq}{d^2}$$

Where n=Desired sample size

$z=1.96$  (standard normal deviation)

$p$  = known character of the study population. Contraceptive prevalence rate among the youth in Kenya is 22%.

$P=0.22$

q= contact usually set at 1-p (0.78)

d=degree of accuracy will be set at 0.05

$n=1.96 \times 1.96(0.22) (0.78) (0.04) (0.04)$

=453

### **3.4.4 Sampling Procedure**

The sampling techniques namely; stratified sampling was used to group respondents into year of study, simple random sampling used to pick respondents from the stratum. The sample was stratified to reflect the distribution of undergraduate students at MMUST by the year of study. The list of various categories of undergraduate students formed a sampling frame each category, that is 1<sup>st</sup> years, 2<sup>nd</sup> years, 3<sup>rd</sup> years, 4<sup>th</sup> years and 5<sup>th</sup> years formed a stratum. Simple random sampling was then used to select those from each category to participate in the study. This technique allowed for selection of sample without bias. According to Oso *et al*, (2005), simple random sampling ensures that each member in the population has an equal and independent chance for inclusion in the sample.

### **3.5.1 Data Collection Procedures**

The researcher collected both primary and secondary data through the questionnaires, in-depth interviews and document analysis. The selection of these tools was informed by the nature of the data to be collected, time available as well as the objective of the study.

Data collection team composed of three research assistants, one staff and two students. They were trained for two days. The training covered; research ethics, research tools, sampling of respondents, data management and storage which enabled the team to

explain the purpose of the study and to clear any suspicion from the participants about the use of information they will provide. Before information was collected, consent of respondents was sought. Further the respondents were assured of confidentiality of the information given by them. Respondents were identified by the codes placed on the questionnaires.

### **3.5.2 Tool Development**

The respondents were asked about their social demographic factors that included age, sex and marital status. Other items included the uptake of family planning. To inquire about factors associated with uptake, respondents were asked questions on awareness of contraceptives, sources of information and attitudes of the provider of the contraceptives. Also inquiry was made on sexual health coping mechanisms. This tool was adopted from Asking Young People about Sexual and Reproductive Behaviors: Illustrative Core Instruments (Cleland *et al.*, 2001).

### **3.5.3 Data Management**

All study participants received a unique participant identification number that was recorded on the questionnaire. Collected data from the study was thoroughly checked and validated for accuracy and completeness. The data was stored in both electronic and hard copy formats. Questionnaires were kept in lockable cabinets that had authorized access. It was directly accessible only to investigators.

### **3.6 Reliability and Validity**

The reliability of a measure indicates the extent to which it is without bias and hence ensures consistent across time and across various items in the instrument (Nachmias and

Nachmias, 1996). Reliability is a measure of the degree to which a research instrument yields consistent result or data after repeated trials (Kombo, 2006). To estimate the reliability of the instrument, a pilot survey involving 60 undergraduate students was carried out in Kibabii University, Cronbach alfa was then established from the responses using statistical package for social science (SPSS). Reliability refers to a measure's consistency in producing similar results on different but comparable occasion (Coolican, 1999). The Cronbach's alpha was closer to 1 meaning there was higher internal consistency reliability was considered to be good.

On the other hand validity refers to the extent to which an instrument measures what it purports to measure (Kombo, 2006). The researcher determined the content validity of the questionnaires as a way of ensuring that the data collected using the instrument represent adequately the domain of the variables measured. Thus assistance was sought from the researcher's supervisors and other research experts from the School of Nursing and Midwifery of Masinde Muliro University of Science and Technology to assess the relevance of the content in the research tools against the objectives of the study. Their suggestion were then used to improve the clarity of the items on the questionnaires used in this study.

### **3.7 Data Analysis**

Data from the completed questionnaires was coded, cleaned and, analyzed using Statistical Package for Social Science (SPSS). Measures were put to minimize entry

errors on the entry screen. Data entering process was conducted concurrently as the data collection continued. Access to computers was for authorized users only. Quantitative procedures were used through data collected from questionnaires. Quantitative method involved the use of descriptive statistics to analyze data into frequencies, means, and percentages. Data was coded, tabulated, analyzed. SPSS was used to obtain statistical measures such as frequencies, percentages and means that were obtained statistically.

Factors associated with contraceptive use were analyzed using bivariate analysis. In bivariate analyses, Odds ratios (OR) and 95% confidence intervals (CI) was done to check the direction of association and to test hypothesis. Information generated was then presented in the text in the form of tables, bar graphs and pie charts.

### **3.8 Ethical Considerations**

The research permit was acquired from Masinde Muliro University of Science and Technology Ethical review committee (Appendix 4) and National Council of Science and Information (NACOSTI) (Appendix 6). The full explanation and the purpose of the study were provided to respondents to give their consent to participate in the study and to foster full co-operation of participants. Ethical commitment with regard to informed consent, confidentiality and anonymity through the process was maintained. The names of respondents were not used in the study. All questionnaires were coded with numbers that were used to identify respondents.

## **CHAPTER FOUR**

### **RESULTS**

#### **4.1 Overview**



This chapter reports study findings by presenting a comprehensive statistical analysis of the data. The results of descriptive information and logistics regression are reported in 4 sections. Section 4.2 describes the socio-demographic distribution of the respondents while section 4.3 to 4.7 presents findings with respect to the variables in the objectives.

The main objective of the study was to explore utilization of contraceptives among undergraduate students in Masinde Muliro University of Science and Technology (MMUST). The first specific objective of the study sought to determine the extent of contraceptive utilization among undergraduate university students. The second objective sought to establish the Influence of social relation on contraceptive utilization among undergraduate students while the third objective was to examine the influence of addictive behavior on uptake of contraceptives.

#### **4.2. Socio-demographic Distribution of the Respondents**

The respondents comprised ungraduated students in MMUST who were in their first, second, third and fourth year of study. A total of 453 undergraduate students from MMUST participated in the study. Table 4.1 presents the number of respondents categorized by gender, age, religion, age left high school, type of the school, nature of parents, religion affiliation of the school and the nature of the school. As indicated in table 4.1, almost an equal number of male (49.6%) and female (50.4%) gender participated in the study. Majority (67.1%) of respondents left high school when they were less than 18 years old while 32.9% of them completed high school when they were above 18 years old.

**Table 4.1: Socio-Demographic Characteristics of the Respondents**

<b>Variable</b>	<b>Category</b>	<b>Frequency (n=453)</b>	
		<b>n</b>	<b>(%)</b>
<b>Gender</b>	Male	225	49.6
	Female	228	50.4
<b>Age</b>	20 or below	218	48.1
	Above 20	235	51.9
<b>Age left high School</b>	18 or below	304	67.1
	Above 18	149	32.9
<b>Type of School</b>	Public	387	85.4
	Private	66	14.6
<b>Religion affiliation of the School</b>	Affiliated	381	84.1
	Not affiliated	72	15.9
<b>Nature of School</b>	Mixed	228	50.3
	Single Set	225	49.7
<b>Parents Status</b>	Mother alive	386	85.2
	No	67	14.8
	Father alive	357	78.8
	No	96	21.2
	Stay with both Parents	275	60.7
	Stay with single Parent	178	39.3
<b>Religion</b>	Catholic	158	34.9
	Protestants	252	55.6
	Muslim	18	4.0
	Others	25	5.5

In terms of the type of the high school attended, table 4.1 indicate that majority (85.4%) of the respondents reported that they attended public schools while 14.6% attended privately owned schools. Majority (84.1%) of the respondents went to religion affiliated

schools while 15.9% did not attend religion affiliated schools. On the side of nature of the school, almost an equal number of respondents attendant both mixed (50.3%) while 49.7% attended single set schools respectively. As concern parental status, majority (85.2%) of respondents said that their mothers were alive compared to a paltry 14.8% who indicated that they were not alive. Similarly, the fathers of 78.8% of respondents were alive and 21.2% were not. Consequently, majority (60.7%) stayed with both parents compared to 39.3% who stayed with single parent.

As regards religion, majority (55.6%) of respondents were Protestants followed by Catholics at 34.9% and Muslims at 4.0% with only 5.5% not being affiliated to any religion. Respondents who stayed with both parents were 60.7% and those who stayed with single Parents were 39.3%.

#### **4.3 Extent of Contraceptives Utilization among Respondents**

The first objective of the study was to determine extent of contraceptive utilization among undergraduate university students at MMUST. To tackle this objective an analysis of the following key indicators was done: a) socio-demographic distribution of contraceptive prevalence, b) socio-demographic predictors of contraceptive utilization, c) contraceptive methods preferred, d) contraceptive knowledge and uptake, e) sources of information on contraceptives services and, f) sources of contraceptives.

##### **4.3.1 Socio-Demographic Characteristic and Contraceptives Prevalence**

The analysis of socio-demographic characteristics and contraceptives prevalence was based on eight items where the respondents were asked to indicate 'yes' or 'no'. As illustrated in table 4.2, the result of the study revealed that contraceptive prevalence rate among the undergraduate students was 62.7%. Majority (65.6%) were respondents in their second year of study and those in fourth (64.6%), first (61.7%) and third (61.5%) year of study. The study also sought to find out the male and female students respondents who reported the use of contraceptives. The study found that 63.5% of male respondents used contraceptives during sexual intercourse compared to 61.8% of female respondents. At the same time 36.5 % of male respondents and 38.2% of female respondents reported non-use of contraceptives.

Among respondents aged less than 20 years, majority (67.0%) reported that they used contraceptives compared to 33.0% who indicated that they had not used contraceptives. On the other hand, 58.7 % of respondents above 20 years said that they had used contraceptives while 41.3% reported in the negative. The findings of the study further revealed that majority (67.2%) of respondents who left high school below or when they were 18 years old had used contraceptives compared to 32.8% who indicated they had not used contraceptives. On the other hand, 52.3% of those who left high school when they were above 18 years reported the use of contraceptives as opposed 47.7% responded to the contrary.

Regarding the type of high school attended and the use of contraceptives, 63.1% of the respondents from public schools indicated that they had used contraceptives and 36.9%

reported in the negative. Similarly, 62.1% of those who attended privately owned schools had used contraceptives compared to 37.9% said that they had not used contraceptives. Further, 62.5% of respondents who attended religion sponsored schools had used contraceptives and 37.5% had not. Likewise, 63.9% of those who attended schools not sponsored by any religion used contraceptives as opposed to 36.1% who reported non-use.

On the nature of school attended and contraceptive usage, the study found that majority (65.9%) of those who attended mixed school used contraceptives while 34.1% reported the contrary. On the other hand, 59.5% of respondents who attended single set schools used contraceptives and 40.5% reported non-use. The study further found that majority (63.9%) of Protestants had used contraceptives while only 36.1 % reported to the contrary. Similarly, 60.1% of the Catholics pointed out that they had used contraceptive while 39.9% had not. Among the Muslims, the results show that 55.6% had used contraceptives and 44.4% pointed out to the contrary.

Further, mother being alive [.081], father being alive [0.20] and staying with both or single parent [0.28] was found not to be significantly associated with contraceptives utilization.

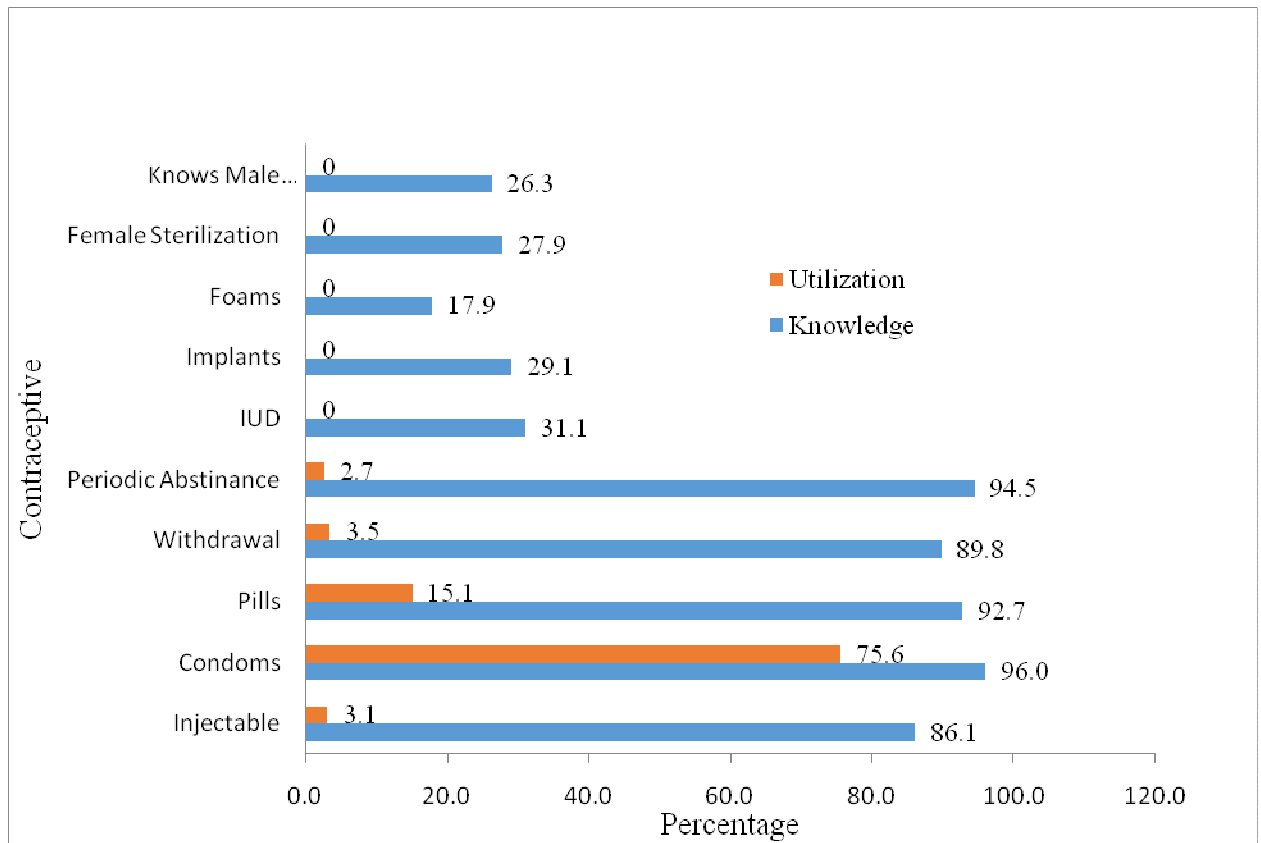
**Table 4.2: Socio-Demographic Characteristics of Respondents and Contraceptive Prevalence**

Variable	Category	Frequency [n=453]  n (%)	Contraceptive Prevalence	
			Yes n (%)	No n (%)
<b>Year of Study</b>	First Year	115 (25.4)	71 (61.7)	44 (38.3)
	Second Year	163 (36.0)	107 (65.6)	56 (34.4)
	Third Year	100(22.1)	62 (61.5)	38 (38.5)
	Fourth Year	65 (14.3)	42 (64.6)	23 (35.4)
	Fifth Year	10 (2.2)	2 (20.0)	8 (80.0)
<b>Gender</b>	Male	225(49.6)	143 (63.5)	82 (36.5)
	Female	228(50.4)	141 (61.8)	87 (38.2)
<b>Age</b>	20 or below	218(48.1)	146 (67.0)	72 (33.0)
	above 20	235(51.9)	138 (58.7)	97 (41.3)
<b>Age Left High School</b>	18 or Less	304(67.1)	204 (67.2)	100 (32.8)
<b>Type of school</b>	Public	387(85.4)	244 (63.1)	143 (36.9)
	Private	66(14.6)	41 (62.1)	25 (37.9)
<b>Religion affiliation of School</b>	Affiliated	381(84.1)	238 (62.5)	143 (37.5)
	Not affiliated	72(15.9)	46 (63.9)	26 (36.1)
<b>Nature of School</b>	Mixed	238(50.3)	157 (65.9)	81 (34.1)
	Single Set	215(49.7)	128 (59.5)	87 (40.5)
<b>Religion</b>	Catholic	158(34.9)	95 (60.1)	63 (39.9)
	Protestants	252(55.6)	161 (63.9)	91 (36.1)
	Muslim	18 (4.0)	10 (55.6)	8 (44.4)
	Others	25 (5.5)	18 (72.0)	7 (28.0)
<b>Status of parents</b>	Mother alive	386 (85.2)	241 (62.4)	145 (37.6)
	Not alive	67 (14.8)	41 (61.2)	26 (38.8)
	Father alive	357 (78.8)	234 (65.5)	123 (34.5)
	Not alive	96 (21.2)	56 (58.3)	40 (41.7)
	Stay with both parents	275 (60.7)	178 (64.7)	97 (35.3)
	Stay with Single parent	178 (39.3)	103 (57.9)	75 (42.1)

#### 4.3.2 Contraceptive Knowledge and Utilization

An analysis was done to ascertain whether respondents had the knowledge of contraceptive methods and utilization. As indicated in figure 4.1, an overwhelming majority indicated that they had knowledge of condoms (96%), pills (92.7%) and withdrawal method (89.9%). Others included periodic abstinence (94.5%) and injectables contraceptive method (86.1%). On the other hand, 26.3% and 27.9% pointed out that they had knowledge of male sterilization and female sterilization respectively. The study further revealed that 29.1% of the respondents had knowledge of implant, 31.1% IUD and an insignificant 17.9% had knowledge of foams method.

Regarding utilization of various methods of contraceptives, majority (75.6%) of the respondents indicated that they preferred condoms followed by pills (15.1%), injectables (3.1%), withdrawal (3.5%) and abstinence (2.7%). The results further show that respondents reported non-use of male or female sterilization, IUD, foams or implant methods of contraceptives. Despite high levels of knowledge on pills, injectables, withdrawal and abstinence, fewer students had used those methods. Overall the study found that there exist a disparity between the knowledge on contraceptives and utilization.



**Figure 4.1: Contraceptive Knowledge and utilization**

### 4.3.3 Sources of Information and Contraceptive Utilization

The study also sought to determine the main sources of information regarding contraceptives for respondents who had utilized contraceptives. Table 4.3 shows that majority (40.1%) obtained information from electronic media (Radio=15.8% and Television=24.3%) while 31.7% got the information from health practitioners. Similarly, 22.6% of the respondents received the information from print media (Newspapers=9.9% and Magazines=12.7%), and a paltry 7.3% got the information from community based health and extension workers. These show that electronic media is the most preferred form of source of information by respondents who had used contraceptives.



**Table 4.3: Sources of Information on Contraceptive and Utilization**

Source	Contraceptive Utilization	
	(n)	(%)
Radio	45	15.8
Television	69	24.3
Newspaper	28	9.9
Magazine	36	12.7
Health practitioners	90	31.7
Community based health workers	16	5.6

#### **4.3.4 Sources of Contraceptives and Utilization**

Further the study wanted to determine the sources of contraceptives for respondent who reported that they had used contraceptives. The findings in table 4.4 show that of respondents who reported having used contraceptives, majority (25.4%) had obtained the services from government facilities followed by drug stores (23.9%) and MMUST health services (13.0%). On the other hand, 15.8%, 12.0 % and 9.9 % indicated that they had obtained contraceptives from other service providers, peers and private health facilities respectively. Government facilities appear to be the most preferred source contraceptives.

**Table 4.4: Sources of Contraceptives and Utilization**

Source	Contraceptive Utilization	
	(n)	(%)
Government health facility	72	25.4
Private health facility	28	9.9
Pears	34	12.0
Drug store	68	23.9
MMUST health services	37	13.0
Others	45	15.8

#### **4.4 Social Relation and Contraceptive Uptake**

The second objective of the study was to establish the respondent's social relation and contraceptives uptake. The result in table 4.5 study revealed that majority (68%) of male respondents who discussed sexuality with their father used contraceptive compared to 36.1 % who reported non-use. Similarly, 58.6% of male respondents who did not discuss sexuality with their father used contraceptive as opposed to 41.4% who did not use. On the side of female respondents, 61.0% who discussed sexuality with their father indicated that they had used contraceptives compared to 39% who reported non-use.

Regarding discussing sexuality with the mother, 56.4% of male respondents reported that they had used contraceptives compared to 43.6% who said the contrary. On the other hand, 68.4% of male respondents who had not discussed sexuality with mother reported

the use of contraceptives as opposed to 31.6% who reported non-use. Consequently, majority (56.5%) of female respondent who discussed sexuality with mother had used contraceptives compared to 43.6% who reported non-use. In contrast, 66.5% of female respondent who had not discussed sexuality had used contraceptives while 30.5% did not.

The findings of the study further show that majority (66.7%) of male respondents who discussed sexuality with their father used contraceptives in contrast to 33.3% who reported non-use. Likewise, 62.3% of male respondents who had not discussed sexuality with their partner used contraceptives and 37.7% had not used. On the other hand, majority (66.1%) of female respondents who discussed sexuality used contraceptives compared to 33.9% who did not. Further, 50.8 % of female respondents who did not discuss sexuality with their partner used contraceptives as opposed to 49.2% who did not.

As regard discussing sexuality with peers, the study found that 54.5% of male respondents who discussed sexuality with peers used contraceptives as opposed to 45.5% who reported non-use. Consequently, 69.8% of male respondents who had not discussed sexuality with peers had used contraceptives while 30.2% did not. Regarding female respondents, of those who had discussed sexuality with their peers, 63.2% indicated that they had used contraceptives while 36.8% reported in the negative. Only 43.8% of female respondents who had not discussed sexuality with their peers used contraceptives and majority 56.2% did not use contraceptives.

**Table 4.5. Influence of Social Relation and Uptake of Contraceptive**

<b>Factor</b>	<b>Category</b>	<b>Contraceptive Use</b>	
		<b>Yes (%)</b>	<b>No (%)</b>
<b>Discuss Sexuality with Father</b>			
Male	Yes	78 (68.4)	36 (31.6)
	No	65 (58.6)	46 (41.4)
Female	Yes	50 (61.0)	32 (39.0)
	No	91 (62.3)	55 (37.7)
<b>Discuss Sexuality with Mother</b>			
Male	Yes	52 (56.5)	40 (43.5)
	No	91 (68.4)	42 (31.6)
Female	Yes	75 (56.4)	58 (43.6)
	No	66 (69.5)	29 (30.5)
<b>Discussing sexuality with Partner</b>			
Male	Yes	44 (66.7)	22 (33.3)
	No	99 (62.3)	60 (37.7)
Female	Yes	109 (66.1)	56 (33.9)
	No	32 (50.8)	31 (49.2)
<b>Discussing Sexuality with Peers</b>			
Male	Yes	55 (54.5)	46 (45.5)
	No	88 (69.8)	38 (30.2)
Female	Yes	134 (63.2)	78 (36.8)
	No	7 (43.8)	9 (56.2)
<b>Discussing Sexuality Employees</b>			
Male	Yes	70 (64.2)	39 (35.8)
	No	73 (63.0)	43 (37.0)
Female	Yes	71 (59.7)	48 (40.3)
	No	70 (64.2)	39 (35.8)

The results of the study further reveal that 64.2% of male respondents who had discussed sexuality with university employees used contraceptives and 35.8% had not. Also, 63.0% of male respondents had used contraceptives though they had not discussed sexuality with university employees compared to 35.8% who reported non-use. Likewise, 59.7% of female respondents who had discussed sexuality with university employees said that they

had used contraceptives and 40.3% indicated the contrary. In addition, 64.2% of female respondents used contraceptives though they had not discussed sexuality with university employees while 35.8% did not use contraceptives.

#### 4.5 Influence of Addictive Behavior on Uptake of Contraceptive

The third objective was to examine the influence of addictive behavior on uptake of contraceptives. The researcher considered three key addictive behavior variables namely; attending clubs and parties, alcohol consumption and smoking. The descriptive results of the study in table 4.6 suggest that majority (71.6%) of respondents who indicated that they frequented club and parties used contraceptives as opposed to 28.4%.

**Table 4.6 Influence of Addictive Behavior and Contraceptive Utilization**

Factor	Category Frequency		Contraceptive Utilization	
			Yes n(%)	No n(%)
Attends Club and Parties	Yes	102	73 (71.6)	29 (28.4)
	No	207	174 (84.1)	33 (15.9)
Alcohol Consumption	Yes	69	44 (63.8)	25 (36.2)
	No	263	222 (84.4)	41 (15.6)
Smoking	Yes	31	20 (64.5)	11 (35.5)
	No	355	223 (62.8)	132 (37.2)

Regarding alcohol consumption, 63.8% of those who reported the frequent consumption of alcohol used contraceptives while 36.2 % did not used contraceptives. On the other hand, 64.5% of the participants who were smokers indicated that they used contraceptives and 35.3% reported that they did not use.

#### **4.6 Factors that Influence Contraceptives Uptake among the Respondents**

A number of factors were identified and considered in the study. Namely; socio-demographic predictors of contraceptives uptake, social relation and contraceptives uptake and addictive behavior and contraceptive uptake.

##### **4.7.1 Influence of Socio-Demographic Predictors of Contraceptives Uptake**

Various demographic factors were identified for the study and a logistic regression was done to determine the association between demographic factors and utilization of contraceptives. The demographic factors which were compared to utilization of contraceptives included years of study, gender, age, age left school, religion and status of parents. The results in table 4.3 show that there was statistically significant association between age of respondents and contraceptive utilization. Consequently, the probability of using contraceptives was 1.43 times higher among respondent who were below 20 years old compared to those who were above 20 years old [OR=1.43: 95%CI=1.02-2.14, p=0.05]. These findings also show that the age at which the respondents left school was significantly associated with contraceptives usage [OR=1.88: 95%CI=1.21-2.92, p=0.005]. Odds ratio result analysis show that those who left school at the age of less than 18 years were 2 times more likely to have used contraceptives compared to those who left when they were above 18 years old.

**Table 4.7: Socio-demographic Determinants of Uptake of Contraceptive**

Factor	Category	Contraception Utilization		OR	95% CI	P Value
		Yes (n/%)	No (n/%)			
<b>First Year</b>	Yes	71 (61.7)	44 (38.3)	0.96	0.61-1.51	0.852
	No	214 (63.3)	124 (36.7)			
<b>Second Year</b>	Yes	107 (65.6)	56 (34.4)	1.26	0.82-1.92	0.286
	No	177 (61.5)	111 (38.5)			
<b>Third Year</b>	Yes	62 (62.0)	38 (38.0)	0.92	0.57-1.49	0.741
	No	251 (71.1)	102 (28.9)			
<b>Fourth Year</b>	Yes	42 (64.6)	23 (35.4)	1.07	0.6-1.91	0.811
	No	243 (62.7)	145 (37.3)			
<b>Fifth Year</b>	Yes	2 (22.0)	8 (80.0)	0.16	0.03-0.79	0.015
	No	284 (64.1)	159 (35.9)			
<b>Gender</b>	Male	143 (63.5)	82 (36.5)	1.08	0.72-1.61	0.719
	Female	141 (61.8)	87 (38.2)			
<b>Age</b>	20 or below	146 (67.0)	68 (33.0)	1.43	1.02-2.14	0.050
	above 20	138 (58.7)	97 (41.3)			
<b>Age Left High School</b>	18 or below	204 (67.2)	100 (32.8)	1.88	1.21-2.92	0.005
<b>Religion</b>	above 18	78 (52.3)	71 (47.7)	0.83	0.55-1.26	0.393
	Catholic	95 (60.1)	63 (39.9)			
	Non-Catholic	292 (64.5)	161 (35.5)	1.09	0.73-1.63	0.666
	Protestant	161 (63.9)	91 (36.1)			
	Non-protestant	281 (62.0)	172 (38.0)	0.07	0.28-1.87	0.502
	Muslim	10 (55.6)	8 (44.4)			
	Non-Muslim	287 (63.4)	166 (36.6)	2.84	0.8-10.04	0.092
	Others	18 (72.0)	3 (28.0)			
<b>Status of Parents</b>	No	282 (62.2)	171 (37.8)	1.06	0.63-1.79	0.815
	Mother alive	241 (62.4)	145 (37.6)			
	Not alive	41 (61.2)	26 (38.2)	1.38	0.83-2.29	0.204
	Father alive	234 (65.5)	123 (34.5)			
	Not alive	56 (58.3)	40 (41.7)	1.34	0.78-2.27	0.285
	Both parents	178 (64.9)	97 (35.3)			
	Single Parent	103 (57.9)	75 (42.1)			

Being in first, [p=0.85] second [p=0.28], third [0.74] and fourth [0.81] year of study was not significantly associated with contraceptives utilization. Also, there was no statistical significant association between being male or female and contraceptive uptake [0.719]. Other factors that had no statistical significant association with contraceptives utilization included being Catholic [0.39], Protestant [0.66] or Muslim [0.502]. Further, mother being alive [.081], father being alive [0.20] and staying with both or single parent [0.28] was found not to be significantly associated with contraceptive utilization.

#### **4.7.2 Influence of Social Relation and Contraceptive Uptake**

In order to establish the influence of social relationship on contraceptives uptake, logistic regression analysis was carried out. Social factors that were compared with utilization included discussing sexuality with parents, partner, peers and university employees. The results of logistic regression in table 4.8 suggest that there was statistical significant association between male respondents who discussed sexuality with their father and use of contraceptives [OR=1.56: 95%CI=1.05-2.35, p=0.027]. Further, odds analysis show that male respondents who discussed sexuality with their father increased the probability of using contraceptives by 1.56 times more compared to those who had not discussed sexuality with their father. Similarly, there was significant association between female respondents who discussed sexuality with their mother [OR=0.54: 95%CI=0.31-0.95, p=0.032]. However, Odds analysis revealed that the probability of using contraceptives reduced by 54% for female respondents who discussed sexuality with their mother compared to those who did not. Similarly, female respondents discussing sexuality with their peers was significantly associated with contraceptives usage [OR=2.47: 95%CI=1.01-6.05, p=0.042]. Likewise, the probability of using contraceptives for female



students who discussed sexuality with their peers increased by 2.47 time more compared to those who did not discuss sexuality with their peers.

Also, male respondents who discussed sexuality with their peers were significantly associated with contraceptives utilization [OR=0.47: 95%CI=0.29-0.78, p=0.003]. However, odds ratio reveal that male respondents who had discussed sexuality with their peers reduced the probability of using contraceptive by 0.47% compared to those who had not discussed sexuality with their peers. Female respondents who discussed sexuality with their partners were significantly associated with the use of contraceptives [OR=1.79: 95%CI=1.96-3.24, p=0.049]. Odds ratio show that the probability of using contraceptive for female respondents who discussed sexuality with their partner increased by 1.79 times more than those who had not discussed.

Variables that were not statistically significant associated with contraceptives usage included female respondents discussing sexuality with their fathers [p=0.28] and male respondents discussing sexuality with their mothers [p=0.10].

Other variables which were not statistical significantly associated with contraceptives utilization comprised male respondents discussing sexuality with their partners [p=0.65] and university employees [p=0.73] and female respondents discussing sexuality with university employees [p=0.45].

**Table 4.8. Influence of Social Relation and Uptake of Contraceptive**

Factor	Category	Contraceptive Use		OR	95% CI	P Value
		Yes n (%)	No n (%)			
Discuss Sexuality with Father						
<b>Male</b>	Yes	78 (68.4)	36 (31.6)	1.56	1.05-2.35	0.027
	No	65 (58.6)	46 (41.4)			
<b>Female</b>	Yes	50 (61.0)	32 (39.0)	1.24	0.80-1.92	0.284
	No	91 (62.3)	55 (37.7)			
Discuss Sexuality with Mother						
<b>Male</b>	Yes	52 (56.4)	40 (43.6)	0.58	0.30-1.12	0.101
	No	91 (68.4)	42 (31.6)			
<b>Female</b>	Yes	75 (56.4)	58 (43.6)	0.54	0.31-0.95	0.032
	No	66 (69.5)	29 (30.5)			
Discussing sexuality with Partner						
<b>Male</b>	Yes	44 (66.7)	22 (33.3)	1.15	0.64-2.07	0.646
	No	99 (62.3)	60 (37.7)			
<b>Female</b>	Yes	109 (66.1)	56 (33.9)	1.79	1.96-3.24	0.049
	No	32 (50.8)	31 (49.2)			
Discussing Sexuality with Peers						
<b>Male</b>	Yes	55 (54.5)	46 (45.5)	0.47	0.29-0.78	0.003
	No	88 (69.8)	38 (30.2)			
<b>Female</b>	Yes	134 (63.2)	78 (36.8)	2.47	1.01-6.05	0.042
	No	7 (43.8)	9 (56.2)			
Discussing Sexuality Employees						
<b>Male</b>	Yes	70 (64.2)	39 (35.8)	1.10	0.64-1.88	0.728
	No	73 (63.0)	43 (37.0)			
<b>Female</b>	Yes	71 (59.7)	48 (40.3)	0.82	0.48-1.39	0.452
	No	70 (64.2)	39 (35.8)			

#### 4.7.3 Influence of Addictive Behavior Uptake on Contraceptives

The third objective was to examine the influence of addictive behavior on uptake of contraceptives. The study considered three key addictive behavior variables namely; attending clubs and parties, alcohol consumption and smoking. The descriptive results of the study in table 4.9 suggest that majority (71.6%) of respondents who indicated that they frequented club and parties used contraceptives as opposed to 28.4%. Regarding alcohol consumption, 63.8% of those who reported the frequent consumption of alcohol used contraceptives while 36.2 % did not used contraceptives. On the other hand, 64.5% of the participants who were smokers indicated that they used contraceptives and 35.3% reported that they did not use.

The socio-addictive variables were compared to uptake of contraceptive and the result of logistic regression indicate that there was a statistical significant relationship between respondent who frequently attended clubs and parties and contraceptives utilization (OR=0.48 95%CI; 0.27-0.84, p=0.01). However, patronizing clubs and parties frequently reduced the probability of using contraceptives by 48% compared to those who did not frequent clubs or parties. Also, alcohol consumption was significantly associated with contraceptives utilization (OR=0.33: 95%CI; 0.18-0.59, p=0.00). This result also revealed that respondents who consumed alcohol were 0.33 times less likely to use contraceptives than those who did not indulge in alcohol. Smoking was not statistically significantly associate with contraceptive utilization (p=0.85).

**Table 4.9 Influence of Addictive Behavior and Contraceptive Utilization**

Factor	Category Frequency	Contraceptive Utilization		OR	95% CI	P Value
		Yes n (%)	No n (%)			
<b>Attends Club and Parties</b>	Yes	73 (71.6)	29 (28.4)	0.48	0.27-0.84	0.010
	No	174 (84.1)	33 (15.9)			
<b>Alcohol Consumption</b>	Yes	44 (63.8)	25 (36.2)	0.33	0.18-0.59	0.000
	No	222 (84.4)	41 (15.6)			
<b>Smoking</b>	Yes	20 (64.5)	11 (35.5)	1.08	0.5-2.32	0.851
	No	223 (62.8)	132 (37.2)			

## CHAPTER FIVE

## **DISCUSSION**

### **5.1 Overview**

This chapter discusses results of the study objective by objective and make comparisons of between this study and the findings of related previous studies.

### **5.2 Discussion**

This study aimed at determining the extent of contraceptive utilization among the undergraduate students at MMUST. The results demonstrate that contraceptive prevalence among the undergraduate students was high. These findings are comparable to studies on contraceptive non-use among university students by Karl and Pengip, (2015) which found the overall rate of contraceptive to be high. The findings of this study show that the contraceptive prevalence was remarkable among students in the first, second and third year of study. Also, the utilization was found to be high among male and female students, and those who were less than 20 years old. These results are in consistent with the findings from a study done in Dar es Salaam among university students (Somba *et al.*, 2014). However, these findings are in contrast to a study done in Tanzania which indicated that less than half of the respondents had ever used any of the contraceptive methods (Swaya *et al.*2016). These differences can perhaps be attributed to the effort being done by various public and private institution and organizations in sensitizing the youth about risk sexual behavior and significance of family planning. It may also be due to effort by the government and non-governmental organization in combating HIV/AIDS and other sexually transmitted disease.

Further, the study revealed a high utilization of contraceptives among respondents who left high school when they were 18 years old or below and those who attended both public and private schools. Likewise, utilization was high among and those who attended school sponsored by religion and those who attendants non religion affiliated schools. The result also suggest that students who had attended mixed school and single set school had high contraceptive utilization. The above result were interpreted to mean that majority of undergraduate students at MMUST were using contraceptives and this may be attributed to adequate knowledge or awareness of the consequences of risky sexual behavior. These findings are supported in a study by Musiime and Mugisha (2015) which indicates that students who had attended single-set schools were more likely to use condoms than those of mixed schools.

The result of logistic regression analysis suggested that there was a statistical significant relationship between age of respondents and the age respondents left high school and contraceptive utilization. However, this is not consistent with the findings of a similar study among university students in 22 African countries (Karl and Pengpid, 2015) which reported that age was not associated with the use of contraceptives. This study also demonstrated that factors such as religion, year of study, status of parents, type and nature of school attended were not significantly associated with contraceptive utilization. Again, this findings `reaffirms the findings of other similar studies (Siegel et al., 1999 and Karl and Pengpid, 2015) which reported that religion affiliation were not associated with the use of contraceptive utilization. However, these findings may be interpreted to mean that age of a students and the age he or she left high school determines

contraceptive utilization. On the other hand, contraceptive utilization is not determined by religion, year of study, status of parents, type and nature of school attendant.

Also the findings of this study suggest that the use of contraceptives was high among respondents who were below 20 years and those who left high school at the age of 18 years or below. Likewise, the utilization was high among those living with father and respondents who's both parents were alive. Male respondents were found to have had a high uptake of contraceptives. However, the utilization by female respondents was slightly low compared to their male counterparts. These findings are in line with the results of a study among the Latino community which indicated that female were at a high risk of unprotected sex compared to their male counterparts (Pariani, et al., 1991). Similar studies have also shown that the uptake of contraceptive is high among respondents whose parents were alive compared to orphans (Musim and Mugisha, 2015).

The findings of this study further demonstrate that majority of undergraduate students had knowledge of common contraceptive methods namely condoms, pills, withdrawal abstinence and injectables. However, a small percentage was familiar with sterilization, implant and IUD methods of contraceptives. This is in agreement with a study by Bankole, and Onasote (2015) which found male and female sterilization to be the least known contraceptive methods. These findings are also in agreement with a study by Oye Adeniran et al., (2006) which also found that these were the least known contraceptive methods among the young people in Nigeria.

Further the result of the study indicate that condoms were highly preferred than all other methods of contraceptive. This is consistent with evidence from previous studies show that condom is the most commonly used method, of the (Hoque, et al., 2013), Central Statistics Office, 2006). However, this findings are contrary to the findings of a study in Ethiopia among the female university students which reported that the contraceptive method mostly used was the pill, followed by the injection (Tamire & Enqueselassie, 2007). This differences may be due to difference in the target populations for the two studies.

Interestingly, there seem to be a huge disparity between contraceptive awareness and usage yet awareness is expected to trigger usage. The low uptake of other methods could be probably due to easy access to condoms, cost involved or complications or side effects associated with those other methods or need for privacy. In general, there existed a huge disparity between knowledge and use of contraceptive methods. These findings are also in agreement with previous studies which demonstrate this disparity. For instance a survey on Uganda demographic and health reported that there was almost universal awareness of contraceptives methods, however the use remains low (International M, 2007). Although a study by Nsubuga, et al., (2016) concurs that knowledge of contraceptive methods and sexual reproductive health was nearly universal, a previous study by Oyadokun (2007) demonstrates that there is no association between the level of contraceptive awareness and uptake. Evidence from a study by Hoque (2013) on awareness and practices of contraceptive use among university students in Botswana



suggest that there was no significant association between the awareness level and the use of contraceptives hence supports the findings of this study.

Related to the above, the study revealed that electronic media (Radio and Television) electronic media was the most popular source of information regarding contraceptive services. This was followed by health professional, print media and community based health and extension. On the contrary, Hoque (2013) found that the main source of information received regarding contraceptive use was the school or the health facility followed by tele-vision and radio. Another study done in Nigeria indicated that hospital or clinics were the main source of contraceptive information (Oyedokun, 2007). Also, Somba, et al., (2014) found the main source of contraceptive to be friends, radio and schools respectively. This difference may be perhaps due to differences in institutional policies and the extent of accessibility to print and electronic media in the countries where these studies were conducted. Also the time lapse between the studies may course the differences. Nevertheless, the result demonstrates the importance of the media, peers and health professional in knowledge dissemination regarding contraceptive utilization.

In addition, the study demonstrated that government facilities and drug stores were the main sources of contraceptives. However, a few of those who participated in the study indicated that they obtained contraceptives from drug stores, university health facilities peers and community based health workers. This is evident that government facilities emains source of contraceptives for undergraduate students and this could result into enhanced uptake of contraceptives. The preference of government facilities may perhaps be attributed to free access of contraceptive in government facilities. Also the

accessibility of government facility may be an important factor when it comes to obtaining contraceptives. These results are consistent with results of the previous studies which show government facilities as a main source of contraceptives. For example, a previous study by Nsubuga, et al., (2016) found the commonest sources of contraceptives to be government hospitals, and clinics. This is also supported by a previous study in Botswana (Hoque, et al., 2013) which found that both male and female university students preferred to access contraceptives from government clinics and hospitals, but not the university clinic. This result is also in agreement with a previous study by Somba, et al., (2014) where it was reported that health workers, pharmacy and shops were the common sources of modern contraceptive methods.

An analysis of social relations revealed a statistical significant association between male respondents who discussed sexuality with their father and use of contraceptives [ $p < 0.027$ ]. Male respondents who discussed sexuality with their father were found to increase the probability of using contraceptives. Similarly, there was significant association between female respondents who discussed sexuality with their mother [ $p < 0.032$ ] however, their probability contraceptives reduced. In addition, male [ $p < 0.003$ ] and female [ $p < 0.042$ ] respondents discussing sexuality with their peers was significantly associated with contraceptives usage. Nevertheless, the probability of using contraceptives was found to be higher in female who discussed sexuality with peers compared to their male counterparts who discussed sexuality with peers. Female respondents who discussed sexuality with their partners were significantly associated

with the use of contraceptives [ $p < 0.049$ ] and their probability of using contraceptive to increase.

Variables that were not statistically significant associated with contraceptives usage included female respondents discussing sexuality with their fathers [ $p = 0.28$ ] and male respondents discussing sexuality with their mother [ $p = 0.10$ ]. Others which were not statistical significantly with contraceptives utilization included male respondents discussing sexuality with their partners [ $p = 0.65$ ] and university employees [ $p = 0.73$ ], and female respondents discussing sexuality with university employees [ $p = 0.45$ ]. The findings of this study agree with the findings of previous studies which reported the influence of parents and peers on contraceptive utilization. For instance, Purvis, et al., (2014) in their study found a positive correlation between contraceptive use among females and their parent's involvement. In addition, females who reported higher rates of mother and father involvement reported higher frequency of contraceptive use. On the other hand the study found the mother's involvement by African Americans male not to be statistical significant to significant associated to contraceptive uptake. This may be attributed to low level of intimidation from their mothers.

A study on peer-driven contraceptive choice and preference by Iyoke, et al., (2014) found that contraceptive usage among students in tertiary institution in Nigeria to be peer driven. Consequently the study indicated that a huge percentage of males and females made their contraceptive choice based on information from peers

The study also sought to determine the influence of addictive behavior on uptake of contraceptives. The findings of this study suggest that among the students who frequented clubs and parties, majority of them used contraceptives. Similarly, those who consumed alcohol frequently were found to have used contraceptives. Further the study suggest that there was a significant association between attending clubs and alcohol consumption and contraceptives uptake. This is similar to the findings of a study from Uganda which found that alcohol consumption did not have an association with non-use of contraceptive (Mehra, et al., 2012). However, respondents who frequented clubs and who consumed alcohol were found to be less likely to use condoms than those who did not engage in such activities. This position is supported by Tripp and Viner (2005) in their study which found that unsafe sex is associated with having sex while drunk and inadequate self-efficacy to resist pressure. In their study, Scott-Sheldon, et al. (2010) also concluded that alcohol abuse by university students was associated with elevated rates of risky sexual behavior with regard to inconsistency condom use. Although majority of students who frequent clubs and consume alcohol are conscious of the dangers associated with such excursions this consciousness tend to be blurred by peer pressure and lack of control while intoxicated. According to the alcohol myopia theory, alcohol limits a person's capacity to weigh negative outcome (MacDonald, et al., 2000).

Studies done elsewhere have also associated parting and clubbing by university students as a source of risk sexual behavior. For instance Harford et al., (2003) and Wecheler et al., (2000) posit that parties constitute an integral part of the college culture and serve as primary settings where students engage in heavy drinking, often leading to negative

outcomes. Some of the things that can go wrong at teenage parties and clubs include: binge drinking, unprotected sex and sexual assault among others. According to Pedersen and LaBrie (2007) the pervasiveness of “pre-partying” behaviors (alcohol consumption prior to attending an event where more alcohol may be consumed) has also been documented among collegiate populations

The study did not find any statistical relationship between student who were smokers and contraceptive usage. Consequently, smokers had a high probability of using contraceptives. This means that smoking does not influence the use of contraceptives. However, studies done elsewhere have demonstrated that cigarette smoking adversely affects cycle control among oral contraceptive users (Rosenberg et al., 2016).

## **CHAPTER SIX**

### **CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Overview**

This Chapter presents the summary of the findings contained in the preceding chapters. Based on the findings a number of conclusions are drawn and recommendations on utilization of contraceptives among undergraduate students made.

#### **6.2 Conclusions**

On the basis of these findings it is apparent that there is high level of contraceptive prevalence among the undergraduate students at MMUST. The prevalence was more less the same across gender, age, and the type of school attended, religion and the year of study of the respondents. Among the demographic factors, the status of parents had no association with contraceptive utilization. This shows that the presence or the absence of one's parent has no major bearing on sexual behavior of respondents. Respondents had a high knowledge of modern contraceptive method however, condoms were the most preferred methods. Interestingly, the use of other methods that are commonly used by the female gender, for instance oral pills, was very low. The implication of this kind of scenario therefore is that sex is still a male dominated activity and the scarcity of female condoms could be worsening the matter. Besides, it is also clear that there exist a disparity between knowledge and contraceptive utilization hence an indication that there is no association between the level of contraceptive awareness and uptake

The study also concluded that electronic media was the most popular and preferred source of information with government facilities and drug stores being the main sources of contraceptives. The study further concluded that there is an association between discussing sexuality with parents and peers, and contraceptive utilization. However, factors such as discussing sexuality with their partners and university employees had no much bearing when it comes to contraceptive utilization. This demonstrates that majority of students make their contraceptive choices based on influence from parents and peers.

There was also a clear association between attending clubbing and alcohol consumption, and contraceptives uptake. This finding point to the conclusion that although students were conscious of the risks associated with clubbing and alcohol consumption in relation to risky sexual behavior many still engage in heavy drinking, often leading to negative outcomes. Although smoking was not associated with contraceptive usage, smoking was found to adversely affect cycle control among oral contraceptive users.

It is therefore apparent that contraceptive prevalence among the university student was relatively high and there is need to upscale the usage. This can be achieved through enhancement of the involvement of parents, peers, partners and the university community. Expansion of the distribution channels to improve accessibility and use of various information channels that provide a fundamental link between contraceptive awareness, access and utilization.

## **6.4 Recommendations**

The following recommendations have been derived from the findings and conclusions;

1. To improve on uptake of contraceptives among undergraduate students of Masinde Muliro University of Science and Technology, the management should employ enough staff to provide Family Planning services to students.
2. HIV and AIDS peer educators should be tasked with educating on sexual and reproductive health.
3. Research findings highlight the importance of implementing specific programs in MMUST to limit the risks of addiction and partying, not only in terms of alcohol abuse, but also addictive behavior such as smoking.
4. More in-depth research is necessary to identify other potential factors related to contraceptive use by conducting multi-site university studies.



## REFERENCES

- Abiodun, O.M. and Balogun, O.R. (2009): Sexual Activity and Contraceptive Use among Young Female Students of Tertiary Educational Institutions in Ilorin, Nigeria. *Contraception*. 2009; 79(2):146–149.
- Acheampong Y.A., Ishmael K.S. and Yaw J. A., (2014). The Effect of Socio-Demographic Factors on Risky-Sexual Behaviours of Adolescents in the North West Province of Southh Africa. *African Population Studies*, 487-498
- Adeniran, A. U. Oladokum, . Odeyemi. E. (2005). Sources of Contraceptive Commodities for Users in Nigeria. *PLOS Med*, e366.
- Advancing Research, I. E. (2012). Teenage Parents and Their Educational Attainment. Texas Comprehensive Center.
- Aira, M.V., Kristina, K., Teppo, A. H., and Irma O. Virjo. (2007). Sexual Intercourse and Current Contraceptive Use among University Students in Finland. *European Journal of Obstetric & Gynecology and reproductive Biology*, 104-110.
- Alabi, B. O. (2014). Rampant Sexual Intercourse among Female Undergraduates in Nigeria and Induced-Abortion Related Morbidity. *Journal of Studies in Social Sciences, Volume 8, Number 1*, 61-80.
- Ambaw, F. (2009). The Effect of Socio-Demographic Factors and Sources of Sex Information on Romantic Love Levels among Jimma Universitystudents. *Ethiop.J.Health Dev.*, 23(1), 34-39.

- Anochie, I. and Ikpeme, E. (2003). 'The Knowledge, Attitude and Use of Contraception amongst Secondary School Girls in Port Harcourt', *Nigerian Journal of Medicine* 12940, 217–220.
- Apanga, P. A. (2015). Factors Influencing The Uptake of Family Planning Services in The Talensi District, Ghana. *The Pan African Medical Journal*, 5301.
- Appiah-Agyekum, N.M. and Kayi, E.A. (2013). Students' Perceptions of Contraceptives in University of Ghana. *Journal of Family and Reproductive Health*, 39-44.
- Ayada, W. and McNIFF. (1994). Sources of Contraceptive Methods. *Demographic and Health Survey comparative studies No. 11*.
- Bankole, O.M. and Onasote, A.O. (2016): Awareness and Sources of Contraception Information among Female University Students in Nigeria. *Journal of Information Development* 1-11
- Bankole, A., Biddlecom, A., Guiella, G., Singh, S. and Zulu E., (2007): Sexual Behaviour, Knowledge and Information Sources of Very Young Adolescents in Four Sub-Saharan African Countries. *African Journal of Reproductive Health* 11(3): 28–43.
- Brenton, R. Lower, C. and Leonard, E. L., (1970). *Intrauterine contraceptive device*. ohio: [en.m.wikipedia.org/wiki/intrauterine](http://en.m.wikipedia.org/wiki/intrauterine).
- Brown, J.L. and Vanable, P.A., (2007). Alcohol Use, Partner Type, and Risky Sexual Behavior among College Students: Findings from an Event-Level Study. *Addictive Behavior*; 32 (2) 940–952.

- Center, S. H. (2015). *The Birth Control Sponge: What to Know*. Web MD.
- Center, T. C. (2012). Teenage Parents and Their Educational Attainment. *Advancing Research, Improving Education*.
- Central Statistics Office (2006). *Family Planning by Method*, Gaborone, Botswana.  
<http://www.cso.gov.bw> (Accessed 10 March 2017).
- Cleland, J., Ingham, R., and Stone, N. (2001). Asking Young People about Sexual and Reproductive Behaviours: Illustrative Core Instruments.  
*UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction*.  
[http://www.who.int/reproductivehealth/topics/adolescence/sample\\_core\\_instruments.pdf](http://www.who.int/reproductivehealth/topics/adolescence/sample_core_instruments.pdf)
- Coolican, H. (1999). *Research Methods and Statistics in Psychology*, Second Edition  
Hodder and Stoughton, Great Britain
- Demers, A., Kairouz, S., Adlaf, E., Gliksman, L., Newton-Taylor, B., and Marchand, A. (2002). Multilevel Analysis of Situational Drinking among Canadian Undergraduates. *Social Science & Medicine*. 55(3):415–424
- Department of Reproductive Health and Research, W. (2011). *Unsafe Abortion Global And Regional Estimates Of The Incidence Of Unsafe Abortion And Associated Mortality In 2008*. *encyclopedia, M. (2016)*.

Eunice Kennedy Shriver, E.K., (2013). The Contraceptive Choice. *Contraception*. 2013  
*Mar*; 87(3): 319–330.

Equality Act 2010. Handbook for Advisors: Equality and Human Right Commission  
Scotland

[http://www.legislation.gov.uk/ukpga/2010/15/pdfs/ukpga\\_20100015\\_en.pdf](http://www.legislation.gov.uk/ukpga/2010/15/pdfs/ukpga_20100015_en.pdf)

Ezebialu, I.U. and Eke, A. (2013). Knowledge and Practice of Emergency Contraception  
among Female Undergraduates in South Eastern Nigeria. *Ann Medical Health  
Science Research*. 2013; 3(4):541–545.

Fatima. L, Steffanie, A. Strathdee, D. M., Patricia A. J., Robert, S. H. and Glenda G.  
(2010). *Contraceptive Use and Method Preference among Women in Soweto,  
South Africa: The Influence of Expanding Access to HIV Care and Treatment  
Services*. Plos.org.

Fletcher, J.M, and Wolfe, B.L. (2012). The Effects of Teenage Fatherhood on Young  
Adult Outcomes. *Econ Inq*. 2012; 50(1):182-201.

Fornos, W. (2016): Abortion in Kenya - East Africa Centre for Law and Justice:  
[eaclj.org/about-us/7-fida-and-kclf-landscaped-comparison.html](http://eaclj.org/about-us/7-fida-and-kclf-landscaped-comparison.html) accessed on  
26/4/2017

Frost, J. J., Zolna, M. R. and Lori Frohwirth, L., (2012). Contraceptive Needs and  
Services, Guttmacher institute

<https://www.guttmacher.org/sites/default/files/pdfs/pubs/win/contraceptive-needs-2012.pdf>

Gelibo T., Belachew, T. and Tilahun, T. (2013). Predictors of Sexual Abstinence among Wolaita Sodo University Students, South Ethiopia. *Reproductive Health*, 10: 18.

Gilchrist, H., Smith, K., Magee, C.A., and Jones, S (2012): A Hangover and a One-Night Stand; Alcohol And Risky Sexual Behavior among Female Students at an Australian University *Youth Studies Australia* Vol: 31 pp 35-43.

Harford, T.C., Wechsler, H. and Muthén, B.O. (2003). Alcohol-related Aggression and Drinking at Off-Campus Parties and Bars: A National Study of Current Drinkers in College. *Journal of Studies on Alcohol*. 64(5):704–711.

Hebert, S., (2015). Social Norms, Contraception and Family Planning.

<https://assets.publishing.service.gov.uk/media/57a08967ed915d3cfd00021e/HDQ1249.pdf>

Hoque, M.E., Ntsipe, T. and Mokgatle-Nthabu, M. (2013). Awareness and Practices of Contraceptive Use among University Students in Botswana, SAHARA-J: *Journal of Social Aspects of HIV/AIDS*10 (2) 83-88.

<http://www.acog.org/Patients/ACOG-Pregnancy-Book>. (2014). *Barrier Methods of Birth Control: Diaphragm, Sponge, Cervical Cap, and Condom*.

- Huber, L.R. and Elsek, J.R. (2009). Contraceptive Use among Sexually Active University Students. *Journal of Women's Health*, 1063-70.
- Ikamari, L., Izugbara, C., and Ochako, R. (2013). Prevalence and determinants of unintended pregnancy among women in Nairobi, Kenya. *BMC Pregnancy Childbirth*. <https://www.ncbi.nlm.nih.gov/pubmed/23510090>
- International, M. (2006). Uganda Demographic and Health Survey: Calverton Maryland, USA: UBOS and Macro International Inc., 2007.
- Ingersoll, K. S., Ceperich, S.D., Nettleman, M. D. and Johnson, B. A. (2014). Risk Drinking and Contraception Effectiveness among College Women. *Psychol Health*, 965–981.
- Iyoke, C.A., Ezugwu, F.O., Lawani, O.L., Ugwu, G.O., Ajah, L.O. and Mba, S.G. (2014): Peer-Driven Contraceptive Choices and Preferences for Contraceptive Methods among Students of Tertiary Educational Institutions in Enugu, Nigeria; *Patient Prefer Adherence* Vol. 8 1043-1050
- Kalma, S. (1993, August 30). Measuring University Student Satisfaction With A Campus Family Planning Clinic In Costa *J Nurs Stud.*, 4, 343-54. (2015). Rica. *Int J Nurs Stud.*, 4, 343-54. (2015).

- Kananu I., Kiao E. and Kimari, L. (2014). Unveiling the Mind of Kenyan Undergraduates. *Strathmore University 9th Annual Ethics Conference*, (pp. 1-26). Nairobi Kenya.
- Karl, P. and Pengip, S. (2015). Contraceptive Non-Use and Associated Factors among University Students in 22 Countries, *African Health Science* 15(4): 1056–1064.
- Kayongo, S. B. (2013). *Uptake Of Modern Contraception Among Youths (15-24) At Community Level In Busia District, Uganda*.  
<http://www.musphcdc.ac.ug/files/pdf/> accessed on 15/12/2016.
- Kenya National Bureau of Statistics (2009). Kenya Population and Housing Census Volume 1A Population Distribution by Administrative Units  
<https://www.knbs.or.ke/2009-kenya-population-and-housing-census-volume-1a-population-distribution-by-administrative-units/>.
- Kenya National Bureau of Statistics (KNBS) and ICF Macro. (2010). Kenya Demographic and Health Survey 2008-09.  
<https://dhsprogram.com/pubs/pdf/fr229/fr229.pdf> accessed on 10/8/2015
- Kindersley, G. D. (2014). *Contraception – diaphragms and cervical caps*. netdoctor.
- Kiptoo, M., Brooks, J., Lihana, R. W., Sandstrom, P., Ng'ang'a, Z., Kinyua, J., Lagat, N., Okoth, F., and Songok. E.M. (2013). HIV-1 Drug Resistance-Associated Mutations among Hiv-1 Infected Drug-Naïve Antenatal Clinic Attendees in Rural Kenya. *BMC Infectious Diseases* volume 13:517  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4228423/>

- Kombo, Donald Kisilu Tromp, Delno L.A. (2006). *Proposal and Thesis Writing: An Introduction*. Nairobi: Paulines Publications Africa.
- Kost, K., (2015). Unintended Pregnancy Rates at the State Level: Estimates for 2010 and Trends since 2002, New York: Guttmacher Institute, 2015, <<http://www.guttmacher.org/pubs/StateUP10.pdf>.
- KNBS and ICF Macro. (2010). *Kenya Demographic Health Survey 2008-09*. Calverton, Maryland: KNBS & ICF Macro.
- Lange, J.E, Clapp, J.D, Turrisi, R., Reavy, R., Jaccard, J., Johnson, M.B., Voas, R.B. (2002) College Binge Drinking: What Is It? Who Does It? *Alcoholism: Clinical and Experimental Research*. 26(5):723–730.
- Lebese, R.T., Maputle, S.M., Ramathuba, D.U. & Khoza, L.B. (2013) ‘Factors Influencing The Uptake of Contraception Services By Vatsonga Adolescents in Rural Communities of Vhembe District in Limpopo Province, South Africa’, *Health SA Gesondheid* 18(1), 654- 660.
- Leticia, M., David, L. and Vimal, R. (2009). Sexual Behavior, Pregnancy, and Schooling among Young People in Urban South Africa. *US National Library of Medicine*, 351–368.
- Lindberg, C., Lewis-Spruill, C. and Crownover, R. (2006). Barriers to Sexual and Reproductive Health Care: Urban Male Adolescents Speak Out; *Comprehensive Paediatric Nursing* 29, 73–88.



- MacDonald, T.K, MacDonald, G., Zanna, M.P., and Fong, G.T. (2000): Alcohol, Sexual Arousal, and Intentions to Use Condoms in Young Men: Applying Alcohol Myopia Theory to Risky Sexual Behaviour. *Health Psychology*; 19: 290–298.
- MacPhail, C., Pettifor, A.E., and Pascoe, S., Rees, H.V. (2007). Contraceptive Use and Pregnancy among 15–24 year Old South African Women: a Nationally Representative Cross-Sectional Survey. *BMC Med.* 2007; 5:31
- Macro, K. (2010). *Kenya Demographic Health Survey 2008-09*. Calverton, Maryland: KNBS and ICF Macro.
- Manda, P. (2008). Gender Analysis of Sexual and Reproductive Health Information Access and Use: A Study of University Student Communities in Tanzania. *University of Dar es Salaam Library Journal* 10 (1and 2).
- Marta Tessema & Hinsermu Bayu. (2013). Knowledge, Attitude and Practice on Emergency Contraception and Associated Factors among Female Students of Debre-Markos University, Debre-Markos Town, East Gojam Zone, North West Ethiopia. *Global Journal of Medical Research: E Gynecology and Obstetrics*, 15 Issue 1 Version 1.0, 1-8.
- Matheka, R. (August 2012). “*The Boys Get The Pleasure The Girls Get The Pain*”.*The views of teenage girls in Kenya concerning the causes.*
- May, K. and Mahlmeister, L. (1990). In *Maternity Nursing: Nursing Process and the Childbearing Family (Nursing maternity/child care)Comprehensive*. Amazon.

MedicineNet.com. (n.d.). Hormonal Methods of Birth Control.

Mehra D, Agardh A, Petterson KO, Östergren P. (2012): Non-Use of Contraception: Determinants Among Ugandan University Students. *Glob Health Action*; 5 (1)85-99.

Michael, D. S., Bradley, J. A., Celeste, M. C., Cynthia, R., Susan K., Peter, F. and Jennifer, G. C. (2009). Relationship of Alcohol Use and Sexual Risk Taking Among Hazardously Drinking Incarcerated Women: An Event-Level Analysis. *J. Stud Alcohol Drugs*, 508-515.

Ministry of State for Planning, National Development and Vision 2030 (2010). 8<sup>Th</sup> Poverty and Economic Policy Research Network Conference in Dakar, Senegal [http://anciensite.pep-net.org/fileadmin/medias/pdf/files\\_events/8th-PEPmeeting2010Dakar/CBMS/Actual\\_uses\\_of\\_CBMS\\_for\\_MDG\\_Monitoring\\_in\\_Kenya\\_2\\_.pdf](http://anciensite.pep-net.org/fileadmin/medias/pdf/files_events/8th-PEPmeeting2010Dakar/CBMS/Actual_uses_of_CBMS_for_MDG_Monitoring_in_Kenya_2_.pdf)

Mumah, J.N., Ziraba,A.K., and Sidze, E.M., (2014). Effect of HIV status on fertility intention and contraceptive use among women in nine sub-Saharan African countries: evidence from Demographic and Health Surveys. *Glob Health Action*. Vol. 7

Musiime, K.E. and Mugisha, J.F. (2015): Factors Associated with Sexual Behavior among Students of Uganda Martyrs University. *International Journal of Public Health Research*. Vol. 3, No. 1, 2015, pp. 1-9.

National Center for Health Statistics (2011). Health, United States: With Special Feature on Socioeconomic Status and Health. Hyattsville, MD.

<https://www.cdc.gov/nchs/data/hus/hus11.pdf>

Nachmias, Frankfort Chava and Nachmias David. *Research Methods in Social Sciences*. 5<sup>th</sup> Ed. London: Arnold, 1996.

Nduvi, O. C. (2015). Influence Of Free Maternity Healthcare Programme On Maternal Mortality Rate In Kenya: A Case Of Kenyatta National Hospital. Nairobi.

Nothando N.G (November 2008). The Effects Of Unplanned Pregnancy On Female Students of The University of Zululand

<http://uzspace.uzulu.ac.za/handle/10530/132>

Nsubuga, H., Sekandi, J.N., Sempeera, H., and Makumbi F.E. (2016). Contraceptive Use, Knowledge, Attitude, Perceptions and Sexual Behavior among Female University Students in Uganda: a Cross-Sectional Survey,

<http://bmcwomenshealth.biomedcentral.com/articles/10.1186/s12905-016-0286-6>;

accessed on 21/12/2016

NSW, F. p. (February 2015). *Reproductive and sexual health for every body in the every family*. Family planning nsw.

Ochieng, R. M. (2016). The Culture of Early Sex and Schooling of Girls in Kilifi County, Kenya. *British Journal of Education* Vol.4, No.7, pp.1-12.

Oguntona, T., Adedeji, O.O and Odusanya, O.O. (2013).The Knowledge Attitude and Practice of Contraceptives by Undergraduates in Lagos Nigeria. *Journal of Biology, Agriculture and Healthcare* 3(12): 61–66.

Olubanke M Bankole,O.M. and Onasote, A.O (2016). Awareness and sources of contraception information among female university students in Nigeria Article Information Volume: 33 issue: 2, page(s): 199-209  
<http://journals.sagepub.com/doi/pdf/10.1177/0266666916652185> (Accessed on 4 may2016)

Oso, W.Y. and Onen, D. A. (2005). *General Guide to Writing Research Proposal and Reports, a Handbook for Beginning Researchers*. Kisumu: Option Press.

Osulah, W. (2007). *The Impact of Teenage Pregnancy on School Dropout among Secondary School Girls in Embu Municipality*,. your knowledge has value.  
<https://www.amazon.com/>. accessed on 18/2/2015

Owino, M. (2015). *Giving a second chance and a home to pregnant teens*.

Oye-Adeniran, B.A., Adewole, I.F., Umoh A.V, Oladodun, A., Gbadegesin, A., Ekanem E.E. and Mahmoud, P. (2006): Community-Based Study of Contraceptive Behaviour In Nigeria. *African Journal of Reproductive Health* 10(2): 90–104.

Oyedokun A. O. (2007) Determinants of Contraceptive Usage: Lessons from Women in Osun State, Nigeria. *Journal of Humanities and Social Sciences*. 1(2):1–14

- Pariani, S. (1991) "Does Contraceptive Choice Make a Difference to Contraceptive Use? Evidence from East Java," *Studies in Family Planning* 22(6).
- Pedersen, E.R. and LaBrie, J. (2007) .Partying Before the Party; Examining Pre-Partying Behaviour among College Students. *Journal of American College Health*. 56(3):237–245.
- Planning, F. (2015). *Male condom*. New Zealand: Family planning.
- Population Reference Bureau (2013). The World's Youth Population <http://www.prb.org/pdf13/youth-data-sheet-2013.pdf>
- Professionals, A. o. (2014). Female sterilization. *Contraceptive Journal*.
- Purvis, P.C., Barnett, R. V.; and Forthun, L. (2014): Parental Involvement during Adolescence and Contraceptive Use in College," *Journal of Adolescent and Family Health*: Vol. 6: (2) 234-250.
- Rosenberg, M,J., Waugh, M.S., Stevens, C.M. (1996). Smoking and Cycle Control among Oral Contraceptive Users. *AM J Obstet Gynecol*; 628-32.
- Sibeko, P.G., (2012). The effect of pregnancy on a schoolgirl's education. <http://uzspace.uzulu.ac.za/bitstream/handle/10530/1238/The%20effect%20of%20pregnancy%20on%20a%20schoolgirl.pdf?sequence=1>

Siegel, F.R., (2013). Countering 21st Century Social-Environmental Threats to Growing Global population.

<https://books.google.co.ke/books?id=IQZYBAAAQBAJ&pg=PA6&lpg>

Somba M.J, Mbonile M, (2013). Advancing the Evidence-Base for Repositioning Family Planning in Tanzania. *Local Solutions to Local Problems*.

Somba M.J, Mbonile, M., Obure, J., and Mahande, M.J. (2014). Sexual Behavior, Contraceptive Knowledge and Use among Female Undergraduates' Students of Muhimbili and Dar es Salaam Universities, Tanzania: A Cross-Sectional Study. *BMC Women's Health*; 14(1):94.

Smith, C., (2017). Increasing Contraception Use with Mobile Phone-Based Interventions. PhD (research paper style) Thesis, London School of Hygiene & Tropical Medicine. DOI: 10.17037/PUBS.03894556

Sweya, M. N., Msuya, S.E., Mahande, M.J., Manongi, R (2016): Contraceptive Knowledge, Sexual Behavior, and Factors Associated With Contraceptive Use among Female Undergraduate University Students in Kilimanjaro Region in Tanzania: *Adolescent Health, Medicine and Therapeutics* Vol: 7, 109-115.

Swierzewsk, S. J (2015). *Teen Pregnancy, Consequences of Teenage Pregnancy*. <http://www.healthcommunities.com/> accessed on 4/6/2016.

Tamire, W. and Enqueselassie, F. (2007): Knowledge, Attitude, and Practice on

Emergency Contraceptive among the Female University Students in Addis

Ababa, Ethiopia. *Ethiopia Journal of Health Development*, 21(2), 111–116.

Tessema, M., and Bayu, N.,(2015) Knowledge, Attitude and Practice on Emergency

Contraception and Associated Factors among Female Students of Debre-Markos

University, Debre-Markos Town, East Gojam Zone, North West Ethiopia, 2013

Global Journal of Medical Research: E Gynecology and Obstetrics Volume 15

Issue 1

<https://medicalresearchjournal.org/index.php/GJMR/article/download/889/799/>

*accessed on 30/1/2017*

Tewodros Getachew Hailemariam<sup>1\*</sup>, Tamene Tesfaye<sup>2</sup>, Tedla Melese<sup>2</sup>, Wondimu

Alemayehu<sup>2</sup>, Yeshialem Kenore<sup>2</sup>,. (2015). *Sexual experiences and emergency*

*contraceptive use among female university students: a cross-sectional study at*

*Wachamo University, Ethiopia*. Sodo Ethiopia: BioMed Central.

Tripp J, Viner R (2005): ABC of Adolescent Sexual Health, Contraception and Teenage

Pregnancy. *British Medical Journal*, 330; 590-593.

Trussell, J., (2007). The cost of unintended pregnancy in the United States.

*Contraception*. 2007 Mar; 75(3):168-70

<https://www.ncbi.nlm.nih.gov/pubmed/17303484>

UNSECO, (2000). Promoting Population and Reproductive Health, Especially among Young People, Through Basic Education: Issues Paper Strategy Session III.2.

Available online at [http://www.unesco.org/education/wef/en-conf/coverage\\_sessionIII\\_2.shtm](http://www.unesco.org/education/wef/en-conf/coverage_sessionIII_2.shtm) viewed on 19/6/2016

UoN Website. (2015). *The utilization of modern family planning methods among women of reproductive age in Kisau Division, Makueni County*. Nairobi.

Velasco, C. (2016). Client-Centered Quality: Clients' Perspectives and Barriers to Receiving Care. Accessed online at [www.fhi.org/en/wsp/wssyn/syn4.html](http://www.fhi.org/en/wsp/wssyn/syn4.html), on 20<sup>th</sup> February 2016

Wangima, N. P. (2012). *Uptake of Family Planning Services Among Undergraduate University Students At Jomo Kenyatta University of Agriculture and Technology*. Nairobi.

Wechsler, H., Kuo, M., Lee, H., and Dowdall, G.W. (2000) Environmental Correlates Of Underage Alcohol Use And Related Problems Of College Students. *American Journal of Preventive Medicine*. 19(1):24–29.

World Health Organization (WHO) Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2000. Geneva: WHO; 2004. Unsafe Abortion. Available at:

[www.who.int/reproductivehealth/publications/unsafeabortion\\_2000/](http://www.who.int/reproductivehealth/publications/unsafeabortion_2000/)



## APPENDICES

### APPENDIX 1: CONSENT FORM

My name is Eldah Oburenyi Ochieng`. I am a graduate student at the Masinde Muliro University of Science and Technology (MMUST), department of Nursing and Midwifery. I am carrying out a research on “Utilization of contraceptives among undergraduate students in Masinde Muliro University of Science and Technology (MMUST)”

You are hereby invited to participate in the study.

Note that it is your right to decide if to participate in the study or not. Your refusal to participate in the study will not interfere with the services you are getting currently at MMUST. The questionnaire will take you about 20 minutes to fill.

**Objectives of the study:** The objective of the study is to determine utilization of contraceptives among undergraduate students in Masinde Muliro University of Science and Technology (MMUST)

**What the study entails:** If you accept to take part, you will be asked some questions in regard to the topic. There will be no procedures or tests done on you.

**Benefits of the research:** The information you give will contribute in promoting timely completion of university by undergraduate students. It will assist the university management in formulating policies that would help prevent the effects of youth sexuality and will contribute to the existing body of knowledge on youths` sexuality and its effect.

**Potential risks:** there are no risks anticipated in this study. However, the interview will take some of your time.

You are assured that the information you will provide will not be linked to you directly and your personal details will not be revealed to any person.

**Follow up schedule:** No follow up is required after participating in the study.

**Further information:** for more information, you can contact the researcher through Telephone number; 0720365503 or the MMUST ethics Committee directly.

**Researcher's statement:** I confirm that I have exhaustively explained the study to the participant and sought voluntary informed consent from him/her

Signed.....Date.....

**Respondent's Statement:** I confirm that this study has been explained to me and all the questions satisfactorily answered to me by the interviewer.

Sign.....Date.....

## APPENDIX 2: QUESTIONNAIRE

Year of study (.....)

1. Gender of respondent MALE 1..... FEMALE 2.....
2. What day, month and year were you born? Day.....Month.....Year.....
3. How old were you at your last birthday?  
  
..... Years old. *Cross-check with date of birth and reconcile*
4. How old were you when you left high school? .....years.
5. Is the school you attended a government or private institution?  
  
Government 1 .....Private 2 .....
6. Is it run by a particular religion or religious group? Yes 1 .....No 2.....
7. Is the school you attended for Boys and girls (mixed)? 1 ...Only boys 2... only girls?
8. What is your religion?  
  
None 01 .....Catholic 02 .....Protestant 03.....  
  
Muslim 04 .....Hindu 05 .....Jew 06 .....
- Other.....
9. How important is religion in your life?  
  
Very important 1 .....Important 2 .....
- Not important 3.....

10. Is your father alive?

Yes 1 .....No 2 .....if no skip to 14

11. Does he live in the same household as you? Yes 1 .....No 2 .....

12. Do you find it difficult or easy to talk with your father about things that are important to you?

Very easy 1 .....Easy 2.....

Average 3 .....Difficult 4.....

Very difficult 5 .....Do not see him 6 .....

13. Have you ever discussed sex-related matters with your father?

Yes 1..... No 2.....

If YES, Often or occasionally?

Often 1 .....Occasionally 2..... Never 3 .....

14. Is your mother alive?

Yes 1 .....No 2..... if (2) skip to 18

15. Does she live in the same household as you? Yes 1..... No 2.....

16. Do you find it difficult or easy to talk with your mother about things that are important to you?

Very easy 1 .....Easy 2 .....Average 3 .....Difficult 4 .....Very difficult 5.....

Do not see her 6 .....

17. Have you ever discussed sex-related matters with your mother? If YES Often or occasionally?

Often 1 .....Occasionally 2 .....Never 3.....

18. Do you have any older siblings? Yes 1..... No 2..... if no go to 20

19. Do any live in the same household? Yes 1..... No 2.....

20. Do you ever go to clubs or parties where young people dance? IF YES. How many times in the last month? Number of times..... Never.....

21. Do you ever drink alcohol? IF YES. How many days in the last month did you drink alcohol?

Number of days..... Never.....

22. Do you ever smoke cigarettes? Yes 1....No 2..... IF YES. How many cigarettes have you smoked in the last 7 days?

Number of Cigarettes..... Never.....

23. Have you ever had a girl/ boyfriend? I mean someone to whom you were sexually or emotionally attracted and whom you 'dated'

Yes 1 .....No 2..... if no go to 54

24. How many girl / boy friends have you had? Number.....

*CURRENT (MOST RECENT) girl / boy friend*

26. How old is he/she? Age.....

27. When you started your relationship, was she/he single, married, divorced or separated?

Single 1 .....Married 2..... Divorce 3..... Separated 4.....

28. When you started your relationship with him/her, was she/he a full time student, working or neither?

Full time student 1 .....Working 2 .....Neither 3.....

29. How many months or years ago did you first 'date' him/her?

Months..... or Years..... Ago

30. Has the relationship ended? Yes 1 .....No 2.....

31. How many days/weeks/months did it last? I mean from the first time you 'dated' to the last time?

Days .....Or Weeks..... Or Months.....

32. Who decided to end the relationship? You, him/her or both of you?

Me 1 .....him/her 2 .....Both 3 .....Other 4.....

33. During the time you were/have been 'dating' he/she did you 'date'/have you 'dated' anyone else? Yes 1 .....No 2.....

34. How would you describe your relationship with him/her? Was (is) it

- (a) Casual 1 .....(b) Serious 2 .....(c) Important/might lead to marriage 3 .....
- (d) Engaged to be married 4 .....

35. And how do you think she/he would describe her /his relationship to you?

- (a) Casual 1 ..... (b) Serious 2 ..... (c) Important/might lead to marriage 3 .....

36. Did you have any physical contact, with him/her such as holding hands, hugging or kissing? Yes 1 .....No 2.....

37. MALES: Did you ever had sex with her?

Yes 1 .....No 2 ..... if no go to 54

38. Think back to the first time you had sex with him/her, you say

- (a) I forced him/her 1
- (b) I persuaded him/her 2
- (c) he/she persuaded me 3
- (d) she/he forced me 4
- (e) We were both willing

39. And would you say it was planned or unexpected?

Planned 1 .....Unexpected 2.....

40. Was this the first time that you had full sexual intercourse in your life?

Yes 1 .....No 2.....

41. How old were you at the time you first had sex with him/her? .....years

42. Did you regret having intercourse with him/her on that first time?

Yes, regretted 1 .....No, not regretted 2.....

43. On that first time did she or he do anything to avoid a pregnancy?

Yes 1..... No 2..... If no go to 45

44. What method did you use?

Condom 1 .....Pill 2.....

Injection 3 .....Withdrawal 4.....

Safe period 5 .....Other..... 6



45. Did you ever discuss contraception with him/her? IF YES did you discuss contraception before or after you first had intercourse?

Before first intercourse 1 .....After first intercourse 2 .....Never 3.....

46. How many times did you and him/her have full intercourse? (*estimate*)

Number..... Once only 1 .....If no go to 54

47. Apart from the first time, did you and him/her ever use a method to avoid pregnancy?

IF YES Always or sometimes?

Always 1 .....Sometimes 2 .....Never 3.....

48. What method did you and him/her mostly use? (MULTIPE RESPONSES PERMITTED)

Condom 1 .....Pill 2 .....Injection 3 .....Withdrawal 4 .....Safe period 5.....

Other..... 6

49. Where did you or him/her get this method? (CIRCLE ONLY ONE)

Shop 1 .....Pharmacy 2 .....Govt. Clinic/Health Centre/Hospital 3 .....

Private Doctor/Nurse/Clinic 4 .....Friend 5 .....Other..... 6

Don't know 9.....

50. SEE Q. 47 Whose decision was it to use a method always/sometimes/never? Was it mainly your decision, he's/her`s decision or a joint decision?

My decision 1 .....he`s/her decision 2 .....Joint decision 3.....

51. MALES: Did she ever become pregnant by you?

FEMALES: Did you ever become pregnant by him?

Yes 1 .....No 2 .....if no go to 54

52. What happened to the pregnancy?

Currently pregnant 1 .....Abortion 2 .....Miscarriage 3 .....Live-birth 4 .....Not sure 5

53. Were you able to do anything to reduce the risk of infection Yes 1 .....No 2.....

54. What did you do? Use condoms 1 .....Take medicines 2.....

Other (.....) 3

55. Some young people are forced to have sexual intercourse against their will by a stranger, a relative or an older person.

Has this ever happened to you? Yes 1 .....No 2 .....

56. How many different strangers, relatives or older persons have forced you to have sex against your will? Number.....

57. Did you or the sexual partner do anything to avoid a pregnancy on these occasions? IF YES Always or sometimes? Always 1 .....Sometimes 2 .....Never 3 .....

58. Some young people have 'one night stands' (*having sex at first meeting and ends their*), perhaps after a party or after drinking? Has this ever happened to you? Yes 1 .....No 2 .....If no go to 4.8

59. How many 'one night stands' have you had? Number.....

60. Did you or the sexual partner do anything to avoid a pregnancy on these occasions? 1Yes.....2No.....

IF YES Always or sometimes? Always 1 .....Sometimes 2..... Never 3.....

61. Some young people pay money or gifts in exchange for sexual intercourse. Has this ever happened to you?

62. Some young people receive money or gifts in exchange for sexual intercourse. Has this ever happened to you?

Yes 1 .....No 2.....

Yes 1 .....No 2..... If no go to 65

63. How many women/men have you had sex with for money or gifts? Number.....

64. Did you or the sexual partner do anything to avoid a pregnancy on these occasions?

IF YES Always or sometimes?

Always 1 .....Sometimes 2 .....Never 3 .....

65. Have you ever had sexual intercourse in your whole life?

Yes 1 .....No 2.....

66. In your whole life how many people have you had sexual intercourse with?

Number.....

67. How long ago did you last have intercourse with a woman/man?

**If less than one week, enter 00 weeks**

Weeks ago..... Or Months ago.....

68. On that last occasion did you or your partner do anything to avoid pregnancy?

Yes 1 .....No 2..... if no go to 4.18

69. What method was used? Condom 1.....Pill 2 .....Injection 3 .....Withdrawal

4 .....Safer Period 5 Other .....6

70 MALES: Have you ever made a girl or woman pregnant? IF YES How many times?

FEMALES: Have you ever been pregnant? IF YES How many times?

Number..... Never 0..... Not Sure 9..... if no go to 73

71. Thinking of the most recent pregnancy, did you want the pregnancy at that time or not want it? Want 1 .....Not want 2.....

72. What happened to the (last) pregnancy? Currently pregnant 1 .....Abortion 2 .....Miscarriage 3 .....Live-birth 4..... Not sure 5.....

**Circle 1 for each method you know.**

**For each method you do not know, read the description bellow it and respond**

**For each method known answer question bellow it**

73. Pill

Women can take a pill every day

Knowledge of Method

Yes 1..... No 2.....

Knowledge of Source

"Do you know any place or person where young people could obtain this method?"

Yes 1..... No 2.....

74. Injection

Women can have an injection every 2 or every 3 months

Yes 1..... No 2.....

"Do you know any place or person where young people could obtain this method?"

Yes 1..... No 2.....

75. Condom

A man can put a rubber device on his penis before intercourse

Yes 1..... No 3 .....

"Do you know any place or person where young people could obtain this method?"

Yes 1..... No 2.....

76. Emergency Contraceptive Pills

A woman can take pills soon after intercourse

Yes 1..... No 2.....

"Do you know any place or person where young people could obtain this method?"

Yes 1..... No 2.....

77. Withdrawal

A man can pull out of a woman before climax

Yes 1..... No 2.....

78. Periodic Abstinence/Rhythm

A couple can avoid sex on days when pregnancy is most likely to occur.

Yes1 .....No 3.....

79. There are other methods of contraception that I have not mentioned. What other methods have you heard of?

IUD 1.....

Implant 2.....

Jelly/foam 3 .....

Male Sterilization 5.....

Female Sterilization 4.....

Other (SPECIFY)..... 6

80. Which method do you think is most suitable for young people?

Pill 1..... Injection 2 .....

81. Have you ever heard of a method/methods that couples use to delay or avoid pregnancy?

1 = Yes.....2 = No.....

82. What was the source of FP information? Circle

1 = Radio 2 = Television 3 = Newspaper 4 = Magazine 5 = Health worker

6 = CHW/CHE

83. Which of the following FP methods **have you heard** of that are used in any way to delay or avoid getting pregnant? Circle 1 or 2

1 = Female sterilization

1= Yes 2= No

2 = Male sterilization

1= Yes 2= No

3 = Oral contraceptive pill

1= Yes 2= No

4 = IUCD/Coil

1= Yes 2= No

5 = Injectables

1= Yes 2= No

6 = Implants

1= Yes 2= No

7 = Male Condom

1= Yes 2= No

8 = Female condom

1= Yes 2= No

9 = Natural methods (Rhythm, periodic abstinence, withdrawal) 1= Yes 2= No

10 = Lactational Amenorrhea method (LAM)

1= Yes 2= No

11 = other (specify) \_\_\_\_\_

84. Which of the FP methods have you or your partner **ever used or tried** in any way to delay or avoid getting pregnant?

1 = Female sterilization

1 = Yes 2 = No

2 = Male sterilization

1 = Yes 2 = No

3 = Oral contraceptive pill

1 = Yes 2 = No

4 = IUCD/Coil

1 = Yes 2 = No

5 = Injectables

1 = Yes 2 = No

6 = Implants

1 = Yes 2 = No

7 = Male Condom

1 = Yes 2 = No

8 = Female condom

1 = Yes 2 = No

9 = Natural methods (Rhythm, periodic abstinence, withdrawal)

1 = Yes 2 = No

10 = Lactational Amenorrhea method (LAM)

1 = Yes 2 = No

11 = other (specify) \_\_\_\_\_

85. Are you currently doing something or using any method to delay or avoid getting pregnant?

1 = Yes 2 = No



86. Which method are you using? Circle

1 = Female sterilization

2 = Male sterilization

3 = Oral contraceptive pill

4 = IUCD/Coil

5 = Injectables

6 = Implants

7 = Male Condom

8 = Female condom

9 = Natural methods (Rhythm, periodic abstinence, withdrawal)

10 = Lactational Amenorrhea method (LAM)

11

=

Other

(specify) \_\_\_\_\_

87. Where did you obtain the method **you ever used/currently** using?

*Write name of facility*

**GOVERNMENT/PARASTATAL**

1 = Government Hospital

2 = Government Health Centre

3 = Government Dispensary

**PRIVATE**

4 = Mission Hospital/Clinic

5 = Private Hospital/Clinic

6 = Nursing/Maternity Home

**OTHER SOURCES**

7 = Mobile Clinic

8 = Community Health Volunteer

9 = Shop/chemist (buy drugs)

10 = Friend/Relative

88. If not, Why are you not using any method of contraception?

1. I want to get pregnant
2. Fear of side effects/got severe side effects with last one
3. Don't know where I can get one
4. Don't know which one to use
5. I am in between making a decision
6. I just got a baby (Indicate age of baby: \_\_\_\_\_)
7. Others (specify

**Thank you for sparing your time to participate in this important study to save our generation.**

## APPENDIX 3: LETTER OF APPROVAL OF PROPOSAL



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870  
Fax: 056-30153  
E-mail: [deansgs@mmust.ac.ke](mailto:deansgs@mmust.ac.ke)  
Website: [www.mmust.ac.ke](http://www.mmust.ac.ke)

P.O Box 190  
Kakamega – 50100  
Kenya

Office of the Dean (School of Graduate Studies)

Ref: MMU/COR: 509079

Date: 7<sup>th</sup> March 2016

Eldah Ochieng Oburenyi  
HNR/G/29/14  
P.O. Box 190-50100  
KAKAMEGA

Dear Ms. Oburenyi,

### RE: APPROVAL OF PROPOSAL

Following communication from the Departmental Graduate Studies Committee and the Faculty Graduate Studies Committee, I am pleased to inform you that the Board of the School of Graduate Studies meeting held on 25<sup>th</sup> February 2016 considered and approved your Masters proposal entitled: *'Utilization of Contraceptives among Undergraduate Students in Masinde Muliro University of Science and Technology'* and appointed the following as supervisors:

1. Prof. Charles Mutai - School of Public Health, Biomedical Sciences & Technology – MMUST
2. Mr. John Arudo - Department of Clinical Nursing and Health Informatics - MMUST

You are required to submit through your supervisor(s) progress reports every three months to the Dean SGS. Such reports should be copied to the following: Chairman, School of Nursing and Midwifery Graduate Studies Committee and Chairman, Clinical Nursing and Health Management. Kindly adhere to research ethics consideration in conducting research.

It is the policy and regulations of the University that you observe a deadline of two years from the date of registration to complete your Masters thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,

PROF. HENRY KEMONI  
EXECUTIVE DEAN, SCHOOL OF GRADUATE STUDIES

## APPENDIX 4: LETTER OF ETHICAL APPROVAL TO CONDUCT RESEARCH



**MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
Tel: 056-31375 P. O. Box 190  
Fax: 056-30153 Kakamega  
E-mail: [rel@mmust.ac.ke](mailto:rel@mmust.ac.ke) 50100  
Website: [www.mmust.ac.ke](http://www.mmust.ac.ke) Kenya

### Institutional Ethics Review Committee (IERC)

MMU/COR: 403009(34)

14<sup>th</sup> April, 2016

Eldah Ochieng Oburenyi  
Registration No. HNR/G/29/14  
Masinde Muliro University of Science and Technology  
P. O. Box 190-50100  
**KAKAMEGA**

Dear Ochieng,

#### RE: ETHICAL APPROVAL TO CONDUCT RESEARCH

The IERC received your proposal titled "*Utilization of Contraceptives among Undergraduate Students in Masinde Muliro University of Science and Technology (MMUST)*" for review. Having reviewed your work, the committee has given ethical clearance for you to conduct research as proposed.

On behalf of IERC and the University Senate, my congratulations. We wish you success in your research endeavour.

Yours faithfully

Dr. Gordon Nguka

**Ag. Chairman, Institutional Ethics Review Committee**

Copy to:

- The Secretary, National Bio-Ethics Committee
- Vice Chancellor
- DVC (PR&I)
- DVC (A & F)
- DVC (A&SA)

## APPENDIX 5: LETETR OF RESEARCH AUTHORIZATION



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349, 3310571, 2219420  
Fax: +254-20-318245, 318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
when replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No  
**NACOSTI/P/16/02640/11334**

Date:

**16<sup>th</sup> June, 2016**

Eldah Oburenyi Ochieng'  
Masinde Muliro University of  
Science and Technology  
P.O. Box 190-50100  
**KAKAMEGA.**

#### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on "*Factors influencing utilization of contraceptives among undergraduate students in Masinde Muliro University of Science and Technology (MMUST)*," I am pleased to inform you that you have been authorized to undertake research in **Kakamega County** for the period ending **13<sup>th</sup> June, 2017**.

You are advised to report to the **Vice Chancellor, Masinde Muliro University of Science and Technology, the County Commissioner, the County Director of Education and the County Coordinator of Health, Kakamega County** before embarking on the research project.

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

**DR. STEPHEN K. KIBIRU, PhD.**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The Vice Chancellor  
Masinde Muliro University of Science and Technology.

The County Commissioner  
Kakamega County.

