UPTAKE OF LONG-ACTING REVERSIBLE CONTRACEPTIVES AND ITS ASSOCIATED FACTORS AMONG ADOLESCENT GIRLS AGED 17-19 YEARS AT GATUNDU KENYA MEDICAL TRAINING COLLEGE, KIAMBU COUNTY

CATHERINE MWONTUNENE MUNGANIA

MASTER OF SCIENCE

(Nursing)

JOMO KENYATTA UNIVERSITY

OF

AGRICULTURE AND TECHNOLOGY

2024

Uptake of Long-Acting Reversible Contraceptives and Its Associated Factors among Adolescent Girls Aged 17-19 Years at Gatundu Kenya Medical Training College, Kiambu County

Catherine Mwontunene Mungania

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science In Nursing (Midwifery and Reproductive Health) of the Jomo Kenyatta University of Agriculture And Technology

2024

DECLARATION

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

Signature……..……Date……

Catherine Mwontunene Mungania

This thesis has been submitted for examination with our approval as the University Supervisors

Signature……..……Date……

Dr. Mutisya Kyalo, PhD

JKUAT, Kenya

Signature……..……Date……

Prof. Sherry Oluchina, PhD

JKUAT, Kenya

DEDICATION

This thesis is dedicated to my family, who encourages me to strive for the best.

ACKNOWLEDGEMENT

I give glory to God Almighty for His entire support and blessings of loving people who have made my life lively and easier.

I thank my supervisors, Professor Sherry Oluchina and Dr Mutisya Kyalo, for their timely scholarly counsel and willingness to devote valuable time to instruct me tirelessly to ensure I acquire competitive skills in writing a thesis. I appreciate the efforts of all lecturers at the school of nursing for their invaluable assistance and all Jomo Kenyatta University staff of Agriculture and Technology for their constant hospitality.

I extend special thanks to my fellow students. Thanks to the Gatundu KMTC target population for participating in the study. To the Priest, for divine interventions. I am indebted to my husband, Charles Kimathi, for financing my post-graduate studies, which opened my mind to the possibilities, and to our children, Kelly and Kayla, for their love and moral support. Finally, I extend sincere God's blessings to all who got involved in one way or another.

TABLE OF CONTENTS

DECLARATION ..... **ii**

DEDICATION ..... **iii**

ACKNOWLEDGEMENT ..... **iv**

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

LIST OF TABLES ..... **x**

LIST OF FIGURES ..... **xi**

ACRONYMS AND ABBREVIATIONS ..... **xii**

ABSTRACT ..... **xiv**

CHAPTER ONE **1**

INTRODUCTION **1**

1.1 Background of the Study 1

1.2 Problem Statement 2

1.3 Justification 3

1.4 Research Questions 4

1.5 Objectives of the Study 5

1.5.1 Broad Objective 5

1.5.2 Specific Objectives 5

1.6 Hypothesis 5

CHAPTER TWO 6

LITERATURE REVIEW 6

2.1 Introduction 6

2.2 Proportion of Adolescent Girls Using Contraceptives 7

2.3 Association between Level of Knowledge and Use of Long Acting Reversible Contraceptives (LARCS) among Adolescent Girls 11

2.4 Socio-Cultural Factors Associated with the Use of Long-Acting Reversible Contraceptives (LARCS) among Adolescent Girls 13

2.4.1 Religion 13

2.4.2 Myths 13

2.4.3 Culture 14

2.4.4 Facilities 15

2.5. Summary of Literature Review 15

2.6 Gap in Literature Review 16

2.7 Theoretical Framework 16

2.8 Conceptual Framework 17

CHAPTER THREE 19

METHODOLOGY 19

3.1 Study Design 19

3.2 Study Area 19

3.3 Study Population 19

3.4 Sample Size 20

3.5 Eligibility Criteria……..……..... 20

3.5.1 Inclusion Criteria 20

3.5.2 Exclusion Criteria 20

3.6 Sampling Procedures 21

3.7 Data Collection Tool 21

3.8 Pre-Testing of the Study Tools 22

3.9 Validity and Reliability of Data Collection Tool 22

3.10 Data Collection Procedure And Training of Research Assistants 23

3.11 Data Analysis 23

3.12 Ethical Consideration 23

CHAPTER FOUR 25

RESULTS 25

4.1 Introduction 25

4.2 Socio-Demographic Characteristics of the Study Respondents 25

4.3 The proportion of adolescent Girls Aged 17-19 Years Using Long Acting Reversible Contraceptives LARC Methods at Gatundu KMTC Campus 26

4.3.1 Sexual and Pregnancy History 26

4.3.2. Uptake of Family planning 28

4.4 Association between Level of Knowledge on Long Acting Reversible Contraceptives (LARC) and Uptake of LARC among Adolescent Girls Aged 17-19 at Gatundu KMTC Campus 31

4.5 Socio-Cultural Factors Associated with the Use of LARCs among Adolescent Girls Aged 17-19 Years at Gatundu KMTC campus 32

4.5.1 Source of Decision To Use LARCs 32

4.5.2 Religion 32

4.5.3 Misconceptions 33

4.5.4 Culture 34

4.5.5 Myths 34

4.5.6 Social Class/Groupings 35

4.5.7 Association between Socio-Cultural Factors and Uptake of LARCs 35

4.5.9 Hypothesis Testing 37

CHAPTER FIVE 38

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS 38

5.1 Introduction 38

5.2 Discussion 38

5.2.1 Proportion of LARC Use among Adolescent Girls Aged17 to 19 Years 38

5.1.2 Level of Knowledge on the Use of LARC among Adolescent Girls Aged 17-19 39

5.1.3 Social and Cultural Factors and Their Association with the Use of LARCs... 39

5.3 Conclusions 41

5.3 Recommendations 41

REFERENCES 43

APPENDICES 48

LIST OF TABLES

Table 3.1: Proportionate Sample per Department 21

Table 3.2: Reliability Results 23

Table 4.1: Socio-Demographic Characteristics of Study Respondents 26

Table 4.2: Knowledge of Long Acting Reversible Contraceptives (LARC) among Respondents 30

Table 4.3: Chi-Square Test of Association between Level of Knowledge and Uptake of LARCs 31

Table 4.4: Chi-Square/Fisher Exact Test of Association between Socio-Cultural Factors and Uptake of LARCs 36

Table 4.5: Multi-Variate Logistic Regression of Association between Socio-Cultural Factors and Uptake of LARCs 37

LIST OF FIGURES

Figure 2.1: Conceptual Framework 18

Figure 4.1: Respondents' sexual history 27

Figure 4.2: Respondents' Pregnancy History At The Time Of The Study 27

Figure 4.3: Respondents' Pregnancy History before the Time of the Study 28

Figure 4.4: Respondents' Using Any Family Planning Methods 28

Figure 4.5: Respondents Using The Different Types of Family Planning Methods 29

Figure 4.6: Respondents Using Short-Acting Contraceptives 29

Figure 4.7: Respondents Using Long-Acting Contraceptives 30

Figure 4.8: Respondents' Level of Knowledge on LARCs 31

Figure 4.9: Respondents' Source Of Decision to Use LARCs 32

Figure 4.10: Respondents' Report on Religion Influence on the Use of LARCs 33

Figure 4.11: Respondents' Report On Misconceptions Influence on Use of LARCs 33

Figure 4.12: Respondents' Report on Culture Influence on the Use of LARCs.....34

Figure 4.13: Respondents' Report on Myths Influence on the Use of LARCs 34

Figure 4.14: Respondents' Report on Social Class/Groupings Influence on the Use of LARCs 35

LIST OF APPENDICES

Appendix I: Participant's Information 48

Appendix II: Respondents Consent Form 50

Appendix III: Adolescent Information and Assent Form.....51

Appendix IV: Participant Assent 53

Appendix V: Respondents' Questionnaire 54

Appendix VI: Authorization from the College of Health Sciences 61

Appendix VII: Authorization from Ethical Review Committee 62

Appendix VIII: NACOSTI Permit 63

Appendix IX: Authorization from County Commissioner Kiambu 64

Appendix X: Authorization From County Government of Kiambu Department of Health Services.....65

Appendix XI: Data Collection Authorization from KMTC Gatundu Campus.....66

ACRONYMS AND ABBREVIATIONS

CPR	Contraceptive prevalence rate
FDGs	Focused Group Discussions
ICPD	International Conference on Population and Development
IPPF	International Planned Parenthood Federation
KDHS	Kenya Demographic Health Survey
KMTC	Kenya Medical Training College
LARC	Long Acting Reversible Contraceptives
MDGs	Millennium Development Goals
MOH	Ministry of Health
NGO	Non-Governmental Organization
PPS	Proportionate Sampling
R.H.	Reproductive Health
SRH	Sexual and Reproductive Health
UNFP	United Nations Population Fund
WHO	World Health Organization
YFS	Youth Friendly Services
SDG	Sustainable developmental goals
χ^2	Pearson's Chi-square
L.R.	Likelihood Ratio

ABSTRACT

The World Health Organization (WHO) has shown that fertility regulation and pregnancy prevention is one of the twenty-first century's most important healthcare issues, evidenced by many adolescent abortions and yearly births globally. In developing countries, few girls engage in long-term reversible contraceptive care. The objective is to determine uptake of long-acting reversible contraceptives among teenage girls aged 17-19 years at Gatundu Kenya Medical Training College, Kiambu County. An analytical cross-sectional study design was utilized. A purposive sampling method was used to select the institution, while stratified sampling was adapted to select a sample of 238 subjects. Data was collected using a self-administered questionnaire. Quantitative data was analyzed using descriptive and inferential statistics via the Statistical Package for Social Sciences (SPSS) version 25. Chi-square tests and Multi-variate logistic regression analysis were applied to assess factors associated with the uptake of long-acting reversible contraceptives among adolescent girls aged 17-19 years in Gatundu Medical College. Majority of the respondents (65.8%) had not used any contraceptive, and 9.2% of respondents were using long-acting reversible contraceptives (LARCs). Regarding respondents' knowledge of LARCs, 39% of the study respondents had a moderate level of knowledge, 33.3% had a low level, and 27.7% had a high level of knowledge of LARCs. The association between the level of knowledge of LARCs and uptake was found not to be statistically significant (chi-square =2.125, df=2, p-value =0.346). The sources of the decision to use LARCs, myths, and social class/grouping were significantly associated with the uptake of LARCs (P value 0.029). At the same time, religion, misconceptions, and Culture were statistically insignificant. In conclusion, utilization of LARCs was low, with only 9.2% of the participants reporting using them. The researcher, therefore, recommends full disclosure and discussion of LARCs, the types of LARCs'-: benefits, and the adverse effects on nurses and gynecologists. Information, education, and reproductive health integration into training programs are recommended to the curriculum developers. Deploy a Multi-sectoral strategy on contraceptives that involves the ministries of education, gender, and health to increase the uptake of LARCs. In particular, strategies should be explored to enable youths to access and use LARCs at their points of use.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Adolescence (10-19 years old) is a transition period between childhood and adulthood, which is a critical life period during which an individual undergoes marked biological, psychological, and social changes. During this time, sexual and reproductive health pose serious challenges to adolescents(World Health Organisation [WHO], 2019)

This age (adolescents 10-19 years old) consists of heterogeneous subgroups with different socio-economic, parity, employment, marital, education, sexual, reproductive health (SRH), and family planning (F.P.) needs. Unintended pregnancy among adolescents is a worldwide public health issue. Unintended pregnancy is a risk factor for abortion, disruption of education, future unemployment, and poor socio economic status. Preventing unintended pregnancies in adolescents is crucial yet challenging. Two-thirds of unsafe abortions occur among women between 15 and 30 years old, and almost 14 percent in developing countries who are 20 years or younger (Bwalya *et al.,* 2018). These unsafe abortions have been reported to be a major contributor to the high rates of morbidity and mortality among adolescent girls and young females (Millinium developmental goals, 2015).

Adolescents aged 15 to 19 account for 14 million births annually. These births put the girls at high risk of death and lifelong complications because they are still not well fully developed for pregnancy and child bearing processes. The average birth rate among girls between 15 and 19 years in developed countries is two times less than that of those from developing countries, estimated at 143 per 1000 births (WHO, 2019). The age-specific fertility rate among adolescents aged 15-19 years in Kenya is 103 per 1000 women. While this is the scenario, the contraceptive prevalence rate among unmarried sexually active adolescent girls aged 15- 19 years in Kenya is 23% (Kenya National Bureau of Statistics,

2019). Adolescent fertility regulation and pregnancy prevention are among the most important healthcare issues of the twenty-first century (WHO, 2019).

Unmarried adolescents have a higher unmet need for contraceptives than adolescents who are married (United Nations & Department of Economic and Social Affairs, 2020). Their contraceptive uptake is influenced by several factors at the individual, community, and policy levels, including the desire to avoid pregnancy, knowledge of contraceptive methods, access to contraceptive methods, socio-economic status, and societal norms. There are differences within and between countries in relation to availability, costs, and access to contraceptives and other reproductive health services. Increasing long-acting reversible Contraceptive uptake is particularly important in sub-Saharan Africa. Evidence from sub-Saharan Africa suggests a large discrepancy between the proportion of women who want to limit the number of births and the proportion using Long Acting Reversible Contraceptive Methods (LARCs). This implies the unmet need for LARCs such as Intrauterine devices (IUD). Furthermore, contraceptive provision in many Sub-Saharan African countries has relied predominantly on short-term methods, such as oral pills, condoms, and injectables (Prata *et al.*, 2018).

In Kenya, while contraceptive prevalence has reached 58%, only 3.4%of girls aged 15-19 in Kenya are currently using the long-acting Acting Reversible Contraceptives (Kenya National Bureau of Statistics [KNBS] *et al.,* 2022). It is, therefore, of great importance to understand uptake and associated factors with the utilization of long-acting reversible Contraceptives among adolescent girls aged 17-19 years seeking Family Planning (F.P.) services to enhance its use.

1.2 Problem Statement

Globally, studies on adolescent sexual behavior show premarital sexual encounters are generally unplanned, frequent, and sporadic (Khalili *et al.,* 2020). This pattern predisposes adolescents to unplanned pregnancies, with more than 16 million giving birth while 5 million end up procuring unsafe abortions every year, leading to global maternal

mortality of 13%. This becomes more dangerous for adolescents as they tend to seek abortion services late in pregnancy or from back street clinics (Ibrahim & Onwudiegwu, 2019). Sub-Saharan Africa accounts for 50% of these occurrences (Prata *et al.,* 2018).

Long-Acting Reversible Contraceptives (LARCs) are highly effective, long-term use, and reversible family planning methods, but the method is underutilized regionally and locally (WHO, 2010). According to a study by the Kenya National Bureau of Statistics (2019), in Kenya, by the age of 15 years, adolescent girls have had their first sexual experience, and this makes them have unsafe abortions. Although many adolescent girls in Kenya wish to avoid unwanted pregnancies, they are not using contraceptives to make this possible, and as a result, 47% of their births are unplanned. In Kenya, the trend of long Acting Reversible Contraceptives use shows a decline from previous years. According to KDHS reports, long Acting Reversible Contraceptives use between 1993 and 2019 was from 4.2 to 1.6 percent, respectively, among girls aged 15-19 years (KNBS, 2022).

The choice for Gatundu Kenya Medical Training College (KMTC) as the site for studying the use of Long-Acting Reversible Contraceptives (LARCs) among adolescent girls aged 17-19 years is grounded in a critical need for targeted research within a demographic that is both vulnerable and significant in the context of reproductive health in Kenya. Despite the known efficacy and safety of LARCs, their underutilization remains a pressing public health issue, particularly among adolescents. Likewise, Gatundu KMTC is strategically located in Kiambu County, which is representative of both urban and rural dynamics in Kenya. It serves a diverse student population, many of whom may have direct experience with the challenges of accessing and using contraceptive methods. Conducting this study in such a setting will allow for understanding of uptake LARC among adolescents.

1.3 Justification

The states that are members of the United Nations signed the Sustainable Developmental Goals (SDGs) in 2015; up to now, there has been uneven progress towards these goals. Of concern is (SDG3) which focuses on ensuring healthy lives and promoting well-being for

all ages. Sustainable Development Goal 3.7 aims to ensure that by 2030, there will be universal access to sexual and reproductive health care services, including contraceptive information and education, and the integration of reproductive health into national strategies and programs. Therefore, this study on the uptake of long-acting reversible contraceptives contributes information toward understanding where our Country is in achieving these sustainable developmental goals.

Prior studies on adolescent girls had focused on sexual activity among this sub-population and on the consequences of risky sexual behavior. However, the researcher could not find any study on the uptake of long-acting reversible contraceptives among adolescent girls aged 17-19 years in a Kenya medical training College. The study was done at the Kenya Medical Training College because this college admits central students directly from secondary schools and across the country; the students are aged anywhere between 17 years old and 19 years old. After admission, the college distributes students to all its campuses across the country. The study, therefore, set to determine the uptake of long-acting reversible contraceptives among adolescent girls aged 17-19 years in the Gatundu KMTC campus.

This study suggests strategic policy areas to strengthen the uptake of long-acting reversible contraceptives that have a significant impact on improving the lives of adolescent girls since they will be able to reach their academic potential. They are useful to health management teams in future planning in increasing long-acting reversible contraceptive uptake as a method of contraception, especially among college girls in institutions of higher learning. The findings point out reasons for the low uptake of long-acting reversible contraceptives among girls despite its benefits in terms of cost and effectiveness.

1.4 Research Questions

1. What is the proportion of adolescent girls aged 17-19 years using LARC methods at the Gatundu KMTC campus?

2. What is the influence of the level of knowledge on the use of LARC among adolescent girls aged 17-19 years at the Gatundu KMTC campus?
3. What are the socio-cultural factors associated with the use of LARCs among adolescent girls aged 17-19 years at the Gatundu KMTC campus?

1.5 Objectives of the Study

1.5.1 Broad Objective

To determine the uptake of long-acting reversible contraceptives and its associated factors among adolescent girls aged 17-19 years at Gatundu KMTC campus.

1.5.2 Specific Objectives

1. To determine the proportion of adolescent girls aged 17-19 using LARC methods at the Gatundu KMTC campus.
2. To establish the influence of level of knowledge on the use of LARC among adolescent girls aged 17-19 at Gatundu KMTC campus.
3. To determine the socio-cultural factors associated with LARC use among adolescent girls aged 17-19 years at the Gatundu KMTC campus.

1.6 Hypothesis

H_0: There is no significant relationship between the level of knowledge and use of LARCs among adolescent girls aged 17-19 Years in the Gatundu KMTC campus.

H_1: There is no significant relationship between socio-cultural factors and the use of LARCs among adolescent girls aged 17-19 years at the Gatundu KMTC campus**.**

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

According to Baker & Creinin (2022), Long-Acting Reversible Contraceptives (LARC) are birth control methods that are effective as they offer contraceptive protection for a long time without the intervention of the users. LARC methods include depo provera; other forms are intrauterine devices (IUDs) and contraceptive implants. These methods are called “reversible” since fertility usually returns shortly after discontinuing the methods. LARCs are very reliable, with failing rates below 1%, making them among the most effective contraceptive methods (Menon, 2020). They are used because they do not require the action to be performed daily, weekly, or monthly.

Two main types of Long-Acting Reversible Contraception (LARC) are Intrauterine Devices (IUDs) and hormonal IUDs. These devices release small amounts of progestin, which makes the cervical mucus thicker, hinders the sperm from getting into the egg, and causes the uterine lining to become thinner (Baker & Creinin, 2022). Some examples of IUDs are Mirena, Skyla, Liletta, and Kyleena. It usually ranges from 3 to 7 years, depending on the type. Copper IUDs: These are non-hormonal devices whose working mechanism is that they have copper that will make the surrounding environment toxic to sperm. The most well-known example is Paragard, which may be effective for up to ten years. Subdermal Contraceptive Implants: These thin wires are implanted in the upper part of the upper arm to administer progestin that helps suppress ovulation (Menon, 2020). The most familiar implant is called Nexplanon; its effectiveness lasts up to three years.

Globally, efforts are in place through reproductive health services to avoid unplanned pregnancies and improve pregnancy spacing among adolescent girls. The use of long-term methods of family planning would result in a reduction of maternal and infant morbidity and mortality, decrease rates of unsafe abortion, decrease sexually transmitted infection

(STI) among HIV/AIDS incidences, improve maternal nutritional status, keep girls in school, improve economic opportunities, and contribute to Sustainable Development Goals(Prata *et al*., 2018)

In sub-Saharan Africa, the use of long-acting methods is scant among adolescent girls, while the rates of unintended pregnancy are high. The sexual reproductive health of teenagers is a major concern because the world has a larger population of teenagers now than ever before. Adolescence is a period of emerging sexual desires, behaviors, and relationships that are part of normal development and, when supported by healthy decision-making, access to information and services, can form the basis for lifelong sexual health and overall well-being (Hubacher *et al*., 2019).

Adolescent girls are at high risk of adverse sexual and reproductive health outcomes due to a host of biological, social, and economic factors, which include unintended pregnancies, unsafe abortion, HIV, and other STIs. In addition, young college girls are at high risk for poor health outcomes after birth for themselves and their newborns, which may include maternal and neonatal death at the extreme. Access to needed health services and preventing these undesirable outcomes among adolescents are vital in helping to protect the health of future generations. Again, adolescents have a right to accurate and comprehensive reproductive health information, education, and services. Despite this dire need, too little is being done to help fulfill these rights and obtain needed sexual and reproductive health services (Chandra-Mouli *et al*., 2019).

2.2 Proportion of Adolescent Girls Using Contraceptives

Global statistics show that adolescents do not have a satisfying and safe sexual life with the capability to make decisions freely about accessing reproductive health services, contraceptive methods, and what to use (Cavallaro *et al*., 2020). However, adolescent girls who have overcome the barriers to the methods receive the services(Frost *et al*., 2018). Study findings show that the use of modern contraceptives among sexually active female adolescents has increased in most parts of the world and low in some, given the unique

challenges that they face, among them the stigma associated with sexual reproductive health (SRH) and the use of long-acting contraceptives(Sedgh et al., 2017).

Evidence has further established that, although early childbearing has declined, there is a need for adolescents to use LARC, as indicated by women subjects interviewed between ages 20 and 24 years, who reported having had a child at 18 years of Age. In addition, a third of sexually active women aged between 15 and 24 years expressed having unmet contraceptive needs (Sedgh *et al.*, 2017).

A survey conducted in Nigeria revealed that cultural practices such as early marriages for girls prevent adolescents from taking contraceptives, which hinders individual girls from using effective birth control methods. On the other hand, contraception use is still low, as revealed in the Factsheet, since only 9% of married women aged 15- 49 years used LACS as a modern contraception (Agbana *et al*., 2023). The survey reveals that 78 percent of women in Nigeria marry before age 15, while 89 percent marry before age 18 with little or no use of contraceptives. Nevertheless, about 22 percent of women aged 15 – 49 years had one form or another of long-acting reversible contraceptives(Agbana *et al*., 2023).

Numerous contraceptive opinions about teenagers support the use of IUDs and implants in a wide range as first-line choices. This is so because adolescent girls contribute to the high number of unintended pregnancies in most countries (American College of Obstetricians and Gynecologists [ACOG], 2018). ACOG suggested that LARCs should be the top-tier method of contraception due to fewer side effects and universal use by women of all ages. Due to aforesaid, the studies on the matter show that more than 60 percent of the three-month injectable and daily pill users would like to change to long-acting reversible contraceptives but are not able to do so related to myths about IUCDS and Implants. A study by Obare *et al.*,. (2019) shows increased sexual activities outside of marriage, evidenced by a high number of adolescent pregnancies and unsafe abortions within the communities. Among the affected, less than half of those who want to avoid pregnancy are using other modern methods of contraception, which require consistency, remembering, and resources like money and time, unlike LARCS(Obare *et al*., 2019).

Overall, the use of LARCs remains low among 16 – 19-year-olds in the U.K. despite the method being available free of charge in government health facilities, as reflected by a persistent high abortion rate in this age group (ACOG, 2018). Although the World Health Organization (WHO) has recommended the use of fertility control measures among adolescent girls as a priority intervention measure to reduce and improve maternal and child health globally, many governments in the world have not yet developed guidelines on ideal strategies for implementation of the methods. This is especially true for adolescents in lower school (Chandra-Mouli *et al*., 2019). Around 300 million girls and young women between the ages of 15 and 19 years globally in 2019 who are now, or soon will be, sexually active from countries like Northern America and Europe; a greater 90% proportional number of these girls live in low- or middle-income countries and often experience unobserved unmet needs for contraceptives (WHO, 2019). Other studies found that a proportion of adolescent girls from humanitarian crises are vulnerable to accessing long-term contraceptives compared to those from ideal settings due to the disruption of settings with families to areas with no adequate service provision equipment. Nevertheless, interviewed adolescents and young women indicated willingness to take long-term contraceptives when available.

Countries like the Caribbean and America have undergone a decline in the proportion of married adolescents taking contraceptives of any kind aged 15–19, as revealed in the year 1990-2019 survey from 15.3% to 14.4%, and it is projected to decline further to 11.7% by 2030. Surveys done from 2002-2014 showed that only 15 percent of adolescent girls, married or in union aged 15-19, used modern contraception (UNFPA, 2014). Globally, the number of adolescents who are 18 years and over contraceptive use has been low(Chola *et al*., 2020; Khalili *et al*., 2020).

Out of 300 million women aged 15–19 years in 2019, 29.8% used any one of contraception as a higher proportion of the contraception needed by modern methods, while 15 million have an unmet need for family planning(Chola *et al*., 2020). A study of 26.5 million adolescents using modern methods of contraception revealed that the number of unmarried adolescents using modern methods was greater in 2019 than the number of

users among married adolescents. Surveys have revealed that 54,000 women, among them adolescent girls, die each year from pregnancy-related complications in the world(WHO, 2019).

(Population Reference Bureau Fact Sheet, 2019) reveals that the maternal mortality ratio remains about 500 per 100,000 live births. At the same time, the fertility rate is still very high, which is at 6.1 children per woman, meaning the proportion of women accessing fertility control measures is few. Low contraceptive uptake among teenagers has received global attention, with numerous reports in the recent past. With all the risks associated with early pregnancies, various surveys indicate that sexually active 15 - 19-year-old adolescents rarely use contraceptives when compared to older women reproductive Age (Prata *et al*., 2018).

In Sub-Saharan Africa, sexual reproductive health (SRH) problems and contraceptive use among teenagers continue to pose a great challenge to governments and program organizers, which leads to a lack of programs to meet the SRH's effective needs, like information and service. This shortcoming hence exposes the affected group to unwanted pregnancies that are associated with poor outcomes, such as miscarriages, stillbirths, unsafe abortion, and other complications that often lead to infant or maternal deaths(Sedgh *et al*., 2017). In addition, available evidence shows that most pregnancies to adolescent girls in sub-Saharan Africa are unplanned, and the use of family planning methods remains low among this group, unlike older women.

In Kenya, few adolescents seek contraceptives, although knowledge of family planning (F.P.) is above 98 percent. The uptake of contraceptives among currently married adolescents below 20 years old is only 19.6 percent, while about 36 percent of young women begin childbearing before the Age of 19 years (Obare *et al*., 2019).

Kahili et al.,.(2019) assert that local trends in contraceptive use among currently married women within the reproductive period 15-49 years show that the contraceptive prevalence rate (CPR) increased from 39% in 2003 to 46% in 2008-2009 Although the increase in

CPR after 2003 is encouraging, there is limited understanding of how these changes affect girls within this ages especially adolescent girls(Kantorová *et al*., 2020).

2.3 Association between Level of Knowledge and Use of Long Acting Reversible Contraceptives (LARCS) among Adolescent Girls

Access to adequate information about LARCS by adolescent girls can help them make choices that work best for their needs. On the other hand, inadequate information on family planning methods can become a negative factor in the acceptance and uptake of LARCS contraceptives. However, high knowledge levels of contraceptive methods would bring behavior changes about LARCS contraceptives, especially when the commodities are available for the girls' free choice and are affordable. Despite these observed benefits, the use of intrauterine contraceptives such as LARCs is not widely utilized among young women. Youth-friendly service providers, educators, and health care providers should know the facts about these methods and impart the knowledge (Division of Reproductive Health Kenya, 2009) in 10-12 years for the intrauterine cervical devices. The advantages include that the methods do not require follow-up and that remembering is clearly explained for better acceptability. The availability of contraceptive methods for choices is very important to family planning programs meant for adolescents(Tebeje & Workneh, 2017).

All Family planning methods available in different forms, such as oral contraceptive pills, injectable creams, jellies, and barrier methods in the form of condoms for females and males, sponges, and cervical caps, may be explained for the adolescent to make informed choices. Some of these commodities are available only in family planning clinics and hospitals, and some must be given only by skilled healthcare providers (such as IUCDs and implants); others can be found in many other places, including retail chemists (Division of Reproductive Health, 2009).

Not knowing the settings of conventional family planning clinics and knowing whether the facility offers the preferred family planning choice may discourage certain groups of

girls from utilizing the facilities, hence LARCS, which may be one reason for the reported low uptake of LARCS as a form of family planning method. Again, the lack of proper and adequate knowledge on contraception and sexually transmitted diseases has not only impacted the reproductive health of adolescents, but it has deplorable consequences on the future lives of adolescents and the nation as a whole. This is so because there is an unfounded belief that the use of contraceptives prevents sexually transmitted diseases, which have led to increasing infections, school dropouts, early deaths, and other social-related problems prevailing among this population(Khalili et al., 2020) (Rahman *et al.*, 2010).

Knowledge of clients' source preferences can help to ensure that the commodities are provided where they are most likely to be accessed and accepted. Such knowledge has been very helpful in social marketing for such commodities as condoms and, to some extent, oral contraceptives. In some countries, such as Zimbabwe, community-based distributors bring the commodities closer to users; peer-to-peer educators may be employed in other situations. Taking contraceptive commodities, especially barrier methods such as condoms, closer to the people is an acceptable, culturally sensitive, and friendly way to encourage use and cannot be more urgent than it is now, with the need to contain the HIV/AIDS pandemic. The sources of contraceptive commodities cannot only limit the number of available methods but can also affect the kind of information clients receive on the methods chosen. Incorrect information leads to unsatisfactory usage, resulting in high discontinuation and failure rates ((Marrone et al., 2018).

Understanding the sources of contraceptive commodities supplies and users' preferences will help strengthen existing networks and plan strategies to address areas that require improvement to promote use (Karimi, 2020). Observation revealed that when the young girls have no clue about the LARCS side effects, they fear the unknown and negative outcomes of the method used. Full disclosure and discussion about contraceptive expected side effects and adverse effects, which should include the health action to be taken by the adolescents, is crucial for the acceptability and sustainability of method use (Falakhe, 2021). Research has further revealed that low uptake is attributed to little or no knowledge

and skills for discussing sexual and reproductive health preferences and needs with adolescents(Sedgh *et al.*, 2017).

2.4 Socio-Cultural Factors Associated with the Use of Long-Acting Reversible Contraceptives (LARCS) among Adolescent Girls

This section highlights the Several social-cultural factors that have been associated with the utilization or lack of utilization of the LARCs among adolescent girls aged 17 to 19 years, and these include religion, myths, Culture, misconceptions, and social class.

2.4.1 Religion

Religion is one of the social concerns that affect reproductive health, hindering adolescent girls from taking contraceptives like long-acting reversible contraceptives. These concerns about a desired health behavior reduce the use of the methods by the individuals and, at the same time, increase unwanted pregnancies and abortions, which often lead to fatal outcomes**.** Further, the emphasis on abstinence by parents, guardians, teachers, religious leaders, and other opinion shapers has functioned to demonize sex amongst adolescents. The impression that sex before marriage is wrong has discouraged sexually active adolescents from seeking contraceptive products and services in spite of the fact that such adolescents need them (WHO, 2019). Furthermore, most of the opinion shapers have publicly denounced contraceptive use amongst adolescents, further discouraging the use amongst adolescents (African Population and Health Research Center [APHRC, 2022).

2.4.2 Myths

Several factors have been associated with the low use of contraceptives among sexually active adolescents. The other barriers to modern contraceptive uptake among young women are myths and misconceptions. Factors like the ability to get a contraception method with the other adolescent's knowledge end in fear of myths that the use of LACS results in the user being included into a group of loose persons from fellow adolescents

and the general society which discourages unmarried sexually active adolescents from using contraceptives(APHRC, 2022).

Perceptions about contraceptive use are influenced by myths adolescents receive from the family, school, and the media, where many sexually related talks to the adolescents are incorrect, ambiguous, and misleading; this has a negative consequence on the adolescent's sexual behavior. Further to this, there is no clear guidance on the method or language to use when discussing sexuality issues with adolescents, leaving passed messages to individual interpretations. Sexually explicit content that is without pregnancy prevention messages has also been found to cause negative perceptions and beliefs about unprotected sex among adolescents. To respond to the challenges of the effects of perceptions on contraceptive use, it is important to understand the content of the messages/information on sexual matters and contraception that adolescents receive while at school and home through their teachers, fellow students, parents, and other family members (APHRC, 2022).

2.4.3 Culture

The social and physical environment also affects adolescents' perceptions of reproductive health and contraceptive use. Maternal approval, for example, has been associated with a higher probability of contraceptive use among adolescents. Consequently, sex decisions among adolescents are based on beliefs, as was established in a study carried out in Bangladesh and Nigeria, which revealed that adolescent females believed that they could not get pregnant if they washed their genitalia or jumped up and down after intercourse. However, in many traditional cultures, sexual activity is sanctioned only in marriage (APHRC, 2022).

With the breakdown of social structures used traditionally to educate young people on sexuality in Africa, adolescents are becoming sexually active without proper guidance. For example, in a study conducted in Nigeria, only 39 percent of parents surveyed had

discussed issues of sex with their children in the year preceding the study (Obare *et al.*, 2019).

2.4.4 Facilities

In Kenya, only 7 percent of public health facilities provide youth-friendly services; hence, the lack of quality youth-friendly centers and services is another problem associated with the low use of contraceptives among the youth. Most of the youth-friendly set-ups in Kenya are enshrined within Hospitals where clinics open from Monday to Friday between 8.00 am and 5.00 pm and are therefore inaccessible to adolescents who are likely to be in school during these hours (Obare *et al.*, 2019).

2.5. Summary of Literature Review

Adolescence (10-19 years old) is a transition period between childhood and adulthood. This age comprises heterogeneous subgroups with different socio-economic, parity, employment, marital, education, sexual, reproductive health (SRH), and family planning (F.P.) needs. Unintended pregnancy among adolescents is a worldwide public health issue. Preventing unintended pregnancies in adolescents is crucial yet challenging. Globally, efforts are in place through reproductive health services to avoid unplanned pregnancies and improve pregnancy spacing among adolescent girls.

Study findings show that the use of modern contraceptives among sexually active female adolescents has increased in most parts of the world and low in some, given the unique challenges that they face, among them the stigma associated with SRH and the use of long-acting contraceptives(Sedgh *et al*., 2017). Although the World Health Organization (WHO) has recommended the use of fertility control measures among adolescent girls as a priority intervention measure to reduce and improve maternal and child health globally, many governments in the world have not yet developed guidelines on ideal strategies for implementation of the methods. This is especially true for adolescents in lower school (Chandra-Mouli *et al*., 2019). Research has further revealed that low uptake is attributed

to little or no knowledge and skills for discussing sexual and reproductive health preferences and needs with adolescents (Sedgh., *et al*., 2017).

2.6 Gap in Literature Review

There is no literature showing the reason why there is a discrepancy between the high level of knowledge and awareness of long-acting reversible contraceptives among adolescent girls and the low utilization of long-acting reversible contraceptives.

2.7 Theoretical Framework

This study was guided by the Health Belief Model by U.S. social psychologists Hall (2018) and is one of the first theories developed to explain the change process in relation to health behavior. The health belief model (HBM) was developed in the 1950s. It is a psychological health behavior change model developed to explain and predict health-related behaviors, particularly in regard to the uptake of health services. The Health Belief Model is a framework for motivating people to take positive health actions that use the desire to avoid a negative health consequence as the prime motivation.

The HBM asserts that the motivation for people to take action to promote their health status is based on how strongly they believe the action will work positively for them, whether failure to take action would have serious effects on their lives, for example, taking a contraceptive before engaging in sex to prevent pregnancy, whether the suggested health intervention is of value, whether the effectiveness of the action is worth the cost and their time, which barriers people must overcome to institute and maintain specific behaviors and the influence of another person close by, who may have taken the same action before.

The model is divided into three major components: the individual's perceptions about health, the modifying factors, which include demographic, socio-psychological, and structural variables, and the benefits of taking preventive measures.

The HBM is a cognitive, interpersonal framework that views humans as rational beings who employ a multidimensional approach to decision-making regarding whether to take a certain health action or not. This study is based on this framework. The model is applicable for complex preventive and sick-role health behaviors such as contraceptive use. Its dimensions are derived from an established body of social psychology theory that relies heavily on cognitive factors oriented towards goal attainment, for example, motivation to prevent pregnancy by use of a contraceptive implant or IUCD. It majorly emphasizes modifiable factors rather than fixed variables, which enable feasible interventions to reduce adolescent sexual and reproductive health issues such as unplanned pregnancies, induced abortions, and school dropouts by adolescent girls.

According to Hall (2018), the HBM's adaptability and holistic nature facilitate applications in diverse contexts like reproductive health and complex behaviors like contraceptive behavior of adolescent girls. Family planning is a dynamic and complex set of services, programs, and behaviors that regulate the number and spacing of children within a family. Contraceptive behavior, one form of family planning, refers to activities involved in the process of identifying and using a contraceptive method to prevent pregnancy, especially LARC, which is underutilized worldwide because of perceptions and barriers; it also includes specific actions such as contraceptive initiation and continuation or discontinuation.

It is after understanding the uptake of LARC among adolescent girls, their level of knowledge of LARC, and the social factors considered by adolescents in their choice of contraceptive methods that it can be possible to increase the prevalence of LARC use among this age group, hence, reducing the percentage of unwanted pregnancies as well as improve the health of women, children, and families.

2.8 Conceptual Framework

Uptake or non-uptake of long-acting reversible contraceptive methods by adolescent girls aged 17-19 years may depend on knowledge about the methods, age, social-cultural

factors associated with the use of LARCs such as Culture, religion, facilities, misconceptions, affordability, and perceptions as found in number of unintended pregnancies and abortions as shown in the dependent and independent variables in Figure 2.1.

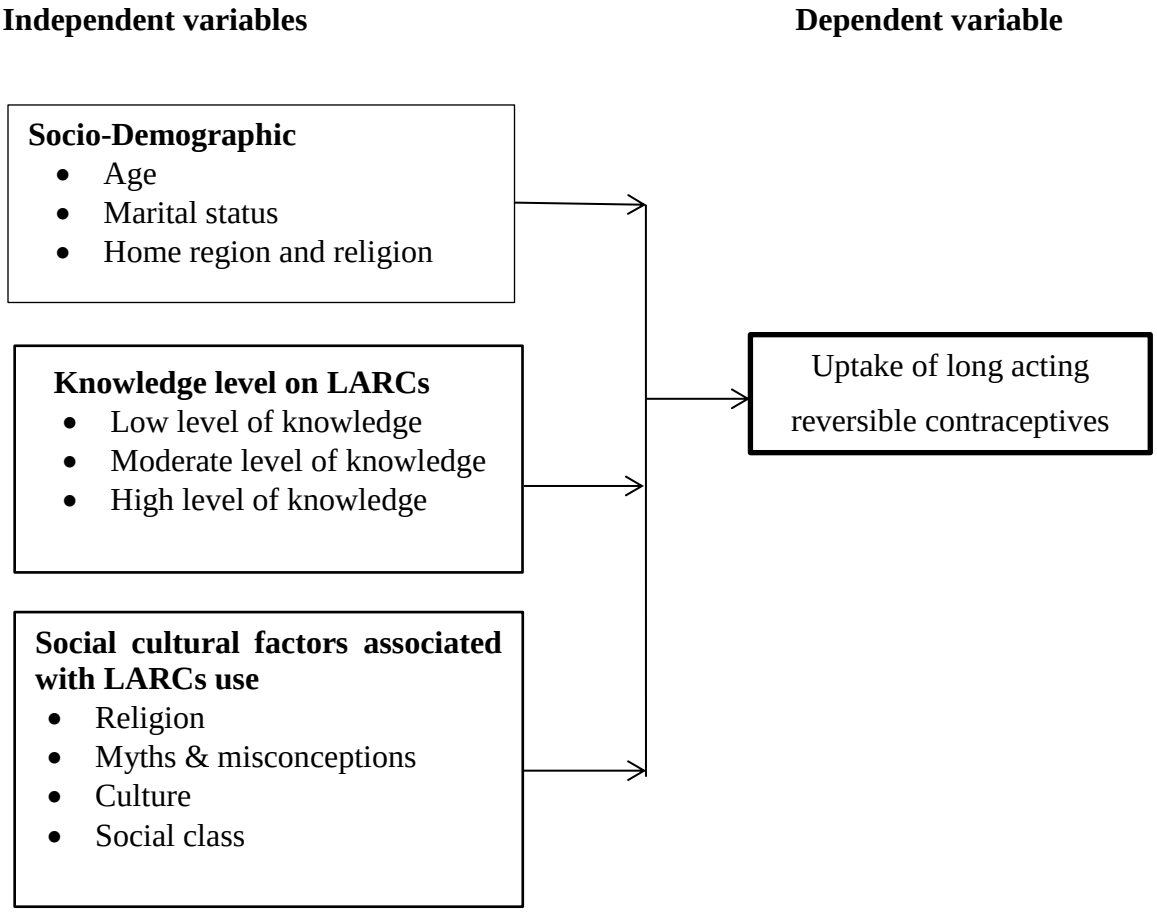

Figure 2.1: Conceptual Framework

CHAPTER THREE

METHODOLOGY

3.1 Study Design

An analytical cross-sectional design was utilized in this study. This is because the design captures information at a specific time and analyses data to understand the relationship between the independent and the dependent variable (Capili, 2021); hence, it was the most appropriate for use in this study to determine the uptake of LARC among adolescent girls aged 17-19 years in Gatundu KMTC campus.

3.2 Study Area

The study was carried out at Kenya Medical Training College Gatundu campus; the Campus is located in Kiambu County, Gatundu South Constituency. It was established in April 2016. Programs provided on the campus include a diploma in clinical medicine and surgery, a diploma in community health nursing, a diploma in physiotherapy, a diploma in community health assistance, and a certificate in a foundation course in community health. The institution has 1300 students, comprising 700 girls and 600 boys. This study area was purposively selected because of many adolescents who are admitted and many of them who become pregnant.

3.3 Study Population

The study population included all adolescent girls aged 17-19 years who were 500 in number according to the admission register at Kenya Medical Training College Gatundu. Students from this campus, like any other, were admitted from all over the country directly from high school.

3.4 Sample Size

Using the Cochran formula (Nanjundeswaraswamy *et al.*, 2021), the sample size was calculated as follows:-.

$n=n_o \div \{1+(n_o-1)\div N\}$

But n_o is given by: $n_o= (z^2 \times p \times q) \div d^2$

Where: z=standard normal deviate at the desired 95% confidence level (1.96), p=prevalence, q=1-p, d=precision=0.05(margin of error), N=Population size, n_o=sample size

Therefore, using the current contraceptive prevalence among young girls of 37%:

$n_o=1.96^2 \times 0.37 \times (1-0.37) \div 0.05^2$

$n_o= (1.96^2 \times 0.37 \times 0.63) \div 0.05^2 = 358.191$

=358

$n_o=358 \div \{1+(358-1)\div 700\} = 358/1.51 =237.09 =238$

The study targeted a sample size of 238 respondents

3.5 Eligibility Criteria

3.5.1 Inclusion Criteria

Adolescent girls aged 17-19 years in Gatundu KMTC Campus

3.5.2 Exclusion Criteria

Adolescent girls aged 17-19 years who were physically or mentally sick

3.6 Sampling Procedures

A stratified random sampling procedure was adopted. The study population was divided into four strata according to the courses offered on the campus, namely Nursing, Physiorepy, Clinical Medicine, and Community Health, with each stratum having 300, 200,100, and 100 girls, respectively, totaling 700. From the admission registers, the target population, the girls aged 17-19 years in nursing, physiotherapy, clinical medicine, and community health, were 250, 100, 80, and 70, respectively, totaling 500. The researcher then used proportionate allocation, using a sampling fraction in each stratum that was proportional to that of the target population. Using this proportionate allocation, the researcher got 119,48,38 and 33 from nursing, physiotherapy, clinical medicine, and community health to make the sample population of 238 respondents. The researcher then used simple random sampling from each stratum, where folded and thoroughly mixed papers with YES and NO were given to the target population. In nursing, there were 119 YES and 131 NO; in physiotherapy, 48 YES and 52 NO; in clinical medicine, 38 YES and 42 NO; and in community health, 33 YES and 37 NO. All the respondents who picked YES formed a sample size of 238.

Table 3.1: Proportionate Sample per Department

Department	**Number of girls aged 17-19 years in the department**	**Number of students sampled per department**
Nursing	250	119
Physiotherapy	100	48
Clinical medicine	80	38
Community health	70	33
Total	**500**	**238**

3.7 Data Collection Tool

Data was collected in 5 days using a semi-structured questionnaire. The semi-structured questionnaire contained closed and open-ended questions. The first part of the questionnaire gathered socio-demographic data; the second part proportion of adolescent

girls aged 17-19 years using long-acting reversible contraceptive methods; the third part assessed Knowledge level on long-acting reversible contraceptives; and the fourth part socio-cultural factors associated with the use of long-acting reversible contraceptive methods. The semi-structured questionnaires were suitable for data collection since they were quick and ideal for handling large data.

3.8 Pre-Testing of the Study Tools

Pre-testing was carried out before the actual data collection day among adolescent girls at Thika KMTC Campus on 10% of the sample size. That is, 24 subjects with the same characteristics as the study population were selected through a random sampling to take part in pre-testing. This helped find out whether the respondents interpreted the questions in the way they should have. Necessary amendments were made before the actual data-collecting day.

3.9 Validity and Reliability of Data Collection Tool

To establish the validity of the research instrument, a pre-test study was carried out before the actual data collection day among adolescent girls at the Thika KMTC Campus.

Reliability is the measure of the degree to which research instruments give similar results over several related trials. A test-retest of the research tool was done to measure data collection tool reliability. Cronbach's alpha was used to determine the reliability of the instrument. The pre-test had Cronbach's alpha of 0.82, as shown in Table 3.1. All the variables registered a Cronbach's alpha coefficient above 0.7, which implied high reliability (Taber, 2018).

Table 3. 2: Reliability Results

Variable	Number of items	Cronbach's alpha
Socio-demographic characteristics	4	0.88
The proportion of adolescent girls aged 17-19 years using long-acting reversible contraceptive methods	7	0.73
Knowledge level of long-acting reversible contraceptives	7	0.87
socio-cultural factors associated with the use of long-acting reversible contraceptive methods	6	0.79
Average		**0.82**

3.10 Data Collection Procedure And Training of Research Assistants

Data was collected using self-administered semi-structured questionnaires. The investigator, assisted by five trained research assistants, did data collection. To ensure quality data collection, five registered community health nurses from Gatundu Level Five Hospital were trained for one day as research assistants. The nurses are knowledgeable and trainable, with the required level of education, to answer questions from the subjects for clarification. The subjects in the inclusion criteria were enrolled in the study, and semi-structured questionnaires were administered after the minors signed informed consent and assent forms. Respondents had enough time to give well-thought-out answers.

3.11 Data Analysis

The data was cleaned, coded, and entered into SPSS version 25. A descriptive and analytical analysis was performed. Inferential statistics measured the association between independent and dependent variables (LARC uptake). The Chi-square/fisher exact test assessed the relationship between categorical independent and dependent variables. The significant variables were further analyzed using binary logistic regression.3.12 Ethical Consideration

Approval to carry out the research was sought from the Jomo Kenyatta University of Agriculture and Technology (JKUAT) ethical review committee (REF: JKU/2/4/896B).

Permit to conduct the study was obtained from the Kenya National Commission for Science, Technology and Innovation (NACOSTI) (REF:569535). Authority to conduct the study was also obtained from the Kiambu County Commissioner and Kiambu county Director of Education. Participants' autonomy and privacy were maintained, and any information shared with them was kept confidential. The purpose and benefits of the study were explained to the participants. The adolescents that were 18 and 19 years old signed consent to participate in the study, and the 17-year-olds, since they were minors according to the Kenyan constitution, were given an assent form that they signed; this was backed and protected by the Adolescent Sexual Reproductive Health policy and guidelines which allow minors the right to seek and receive reproductive health services and information without parents or guardians consent. The principal investigator sought a signed informed consent (Appendix I) from participants. The participants were not coerced to participate in the study.

CHAPTER FOUR

RESULTS

4.1 Introduction

The chapter focuses on the study findings. This study aimed to determine the uptake of long-acting reversible contraceptives among adolescent girls aged 17-19 years at the Gatundu KMTC campus. The responses were analyzed into frequencies, percentages, and mean and presented in tables and pie charts

The study participants were adolescent girls aged 17-19 years at the Gatundu KMTC campus. The study sample size was 238. The questionnaires distributed to the study participants were 238, but only 228 were returned, giving a response rate of 95.8%. The return rate of 96%, according to Mugenda and Mugenda (2008), was adequate for analysis.

4.2 Socio-Demographic Characteristics of the Study Respondents

In terms of socio-demographic characteristics, the majority of the study respondents were single, 98.3% (n=224). Furthermore, most of the study respondents, 94.3% (n=215), were Christians. Almost all, 97.8% (n=223) of the respondents reported on home region, with 50.7% (n=113) coming from central. The study respondents had a mean age of 18.39 years (Table 4.1).

Table 4.1: Socio-Demographic Characteristics of Study Respondents

Variable	Category	Frequency (n)	Percentage (%)
Marital status	Married	4	1.7%
	Single	224	98.3%
	Total	**228**	**100.0%**
Religion	Christian	215	94.3%
	Muslim	13	5.7%
	Traditionalist	0	0.0%
	Total	**228**	**100.0%**
Home Region	Central	113	50.7%
	Eastern	14	6.3%
	Rift Valley	37	16.6%
	Coast	0	0.0%
	Western	17	7.6%
	Nyanza	21	9.4%
	Nairobi	21	9.4%
	Total	**223**	**100.0%**
Age	N=228, Mean=18.39, Range=17-19, SD=0.72		

4.3 The Proportion of Adolescent Girls Aged 17-19 Years Using Long Acting Reversible Contraceptives LARC Methods at Gatundu KMTC Campus

4.3.1 Sexual and Pregnancy History

Regarding sexual history, 35.1 % (n=80) of the study respondents had a history of sexual intercourse, while 64.9% (n=148) had no sexual history (Figure 4.1).

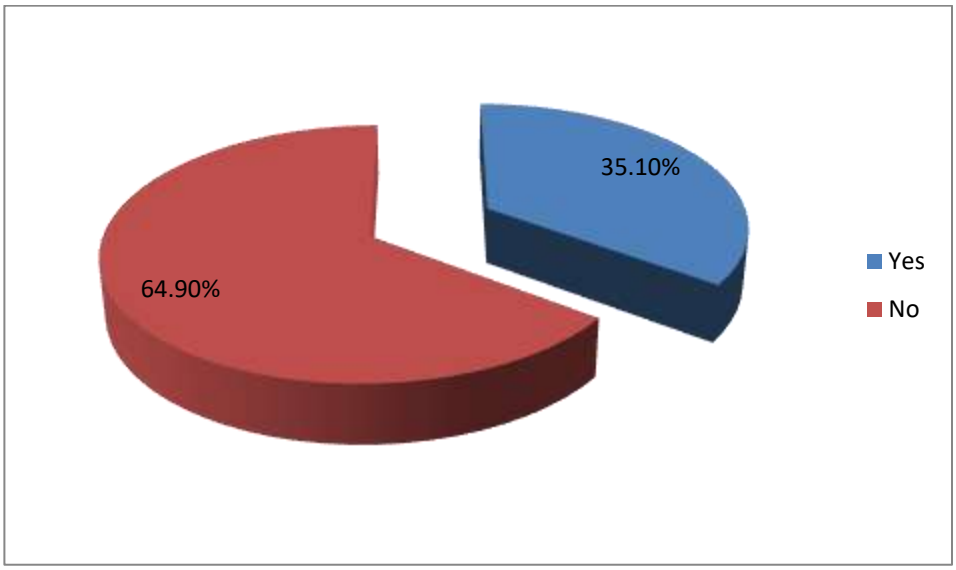

Figure 4.1: Respondents' Sexual History

On pregnancy, the majority of the study respondents (88.6%, n=202) reported not being pregnant at the time of the study, 3.5% (n=8) were pregnant, while 8% (18) did not know their pregnancy status (Figure 4.2).

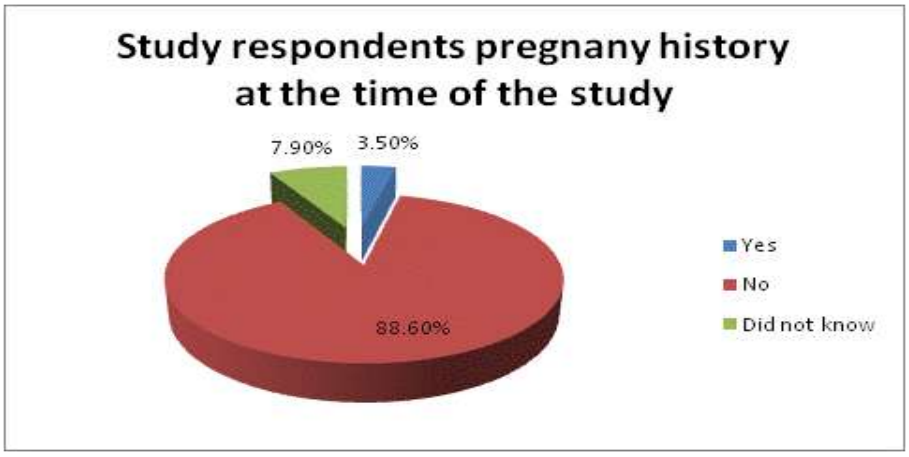

Figure 4.2: Respondents' Pregnancy History At The Time Of The Study

Only 97.8% (n=223) of the study respondents reported whether they had been pregnant before. The majority of the study respondents (91.9%, n=205) reported they had never been pregnant before, while 8.1% (n=18) reported being pregnant before (Figure 4.3).

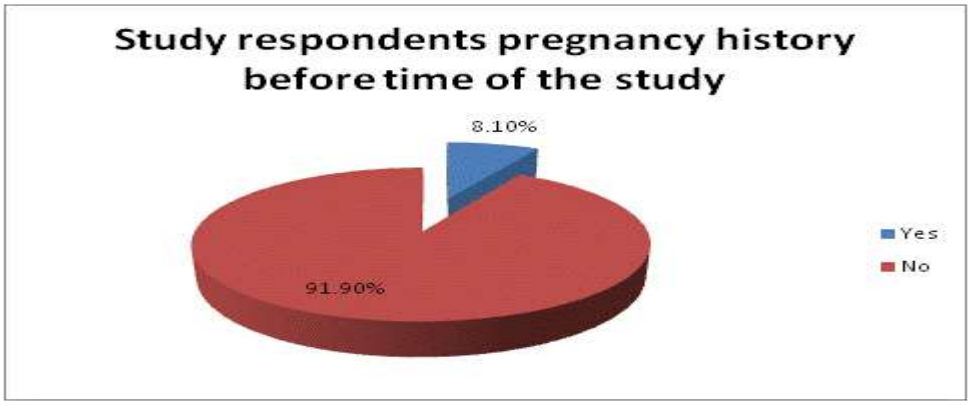

Figure 4.3: Respondents' Pregnancy History before the Time of the Study

4.3.2. Uptake of Family Planning

On the use of family planning methods, slightly more than a third, 34.2% (n=78) of the study respondents reported having used family planning methods. In contrast, close to two-thirds, 65.8% (n=150), had not used any family planning methods (Figure 4.4).

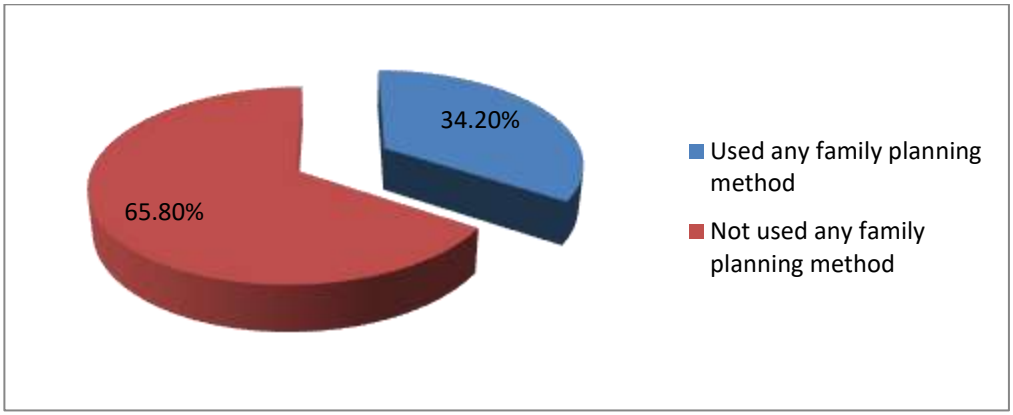

Figure 4.4: Respondents' Using Any Family Planning Methods

The majority of the study respondents, 18.9% (n=43), used e-pills, followed by 14% (n=9) who used condoms. The minority of the study respondents, 2.2% (n=5), used oral oral pills (Figure 4.5).

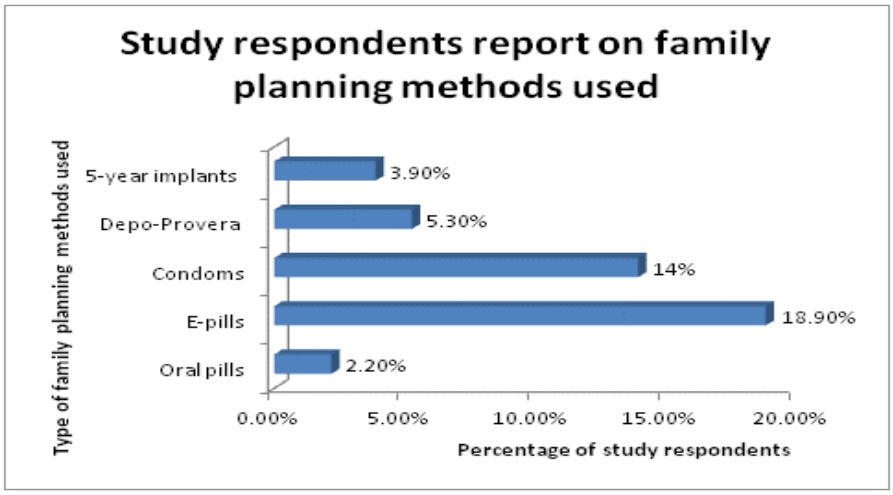

Figure 4.5: Respondents Using The Different Types of Family Planning Methods

A quarter of the respondents, 25% (n=57), reported having used short-acting contraceptives (SACs) (e-pills, oral pills, and condoms) while 75% (n=171) had not used

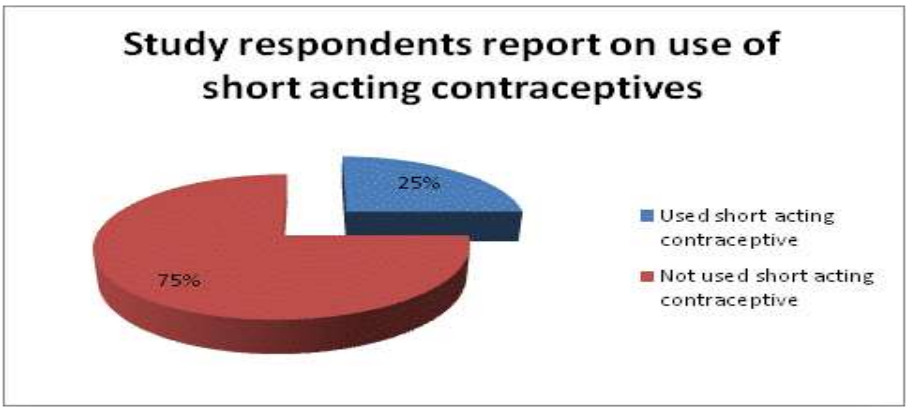

Figure 4.6: Respondents Using Short-Acting Contraceptives

The majority of the study respondents, 90.8% (n=207), were not using Long-acting reversible contraceptives (LARCs) (depo provera and five-year implants), while the minority, 9.2% (n=21) were using (Figure 4.7).

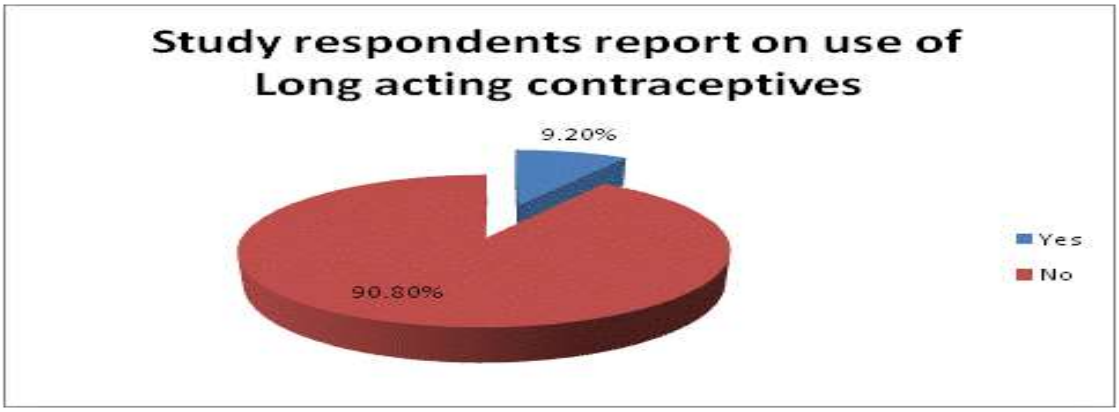

Figure 4.7: Respondents Using Long-Acting Contraceptives

Table 4.2: Knowledge of Long Acting Reversible Contraceptives (LARC) among Respondents

Variables	Correct answer		Incorrect answer	
	F	%	F	%
Definition of LARCs	184	80.7	44	19.3
Types of LARCs	100	43.9	128	56.1
Benefits of LARCs	80	35.1	148	64.9
Implants were hormone-releasing contraceptives	168	73.7	60	26.3
Intra-uterine cervical devices or the coil took time to be effective against conception	98	43.0	130	57.0

The minimum possible total score of knowledge was zero (0), and the maximum possible score was five (5). Dividing the attained score by the maximum possible attainable score (5) and multiplying by a hundred to come up with a percentage. A calculated level of knowledge of 80% to 100% was classified as high, 79% to 50% as moderate, and below 50% as a low level of knowledge Aryeetey *et al*. (2010). The majority of the study participants, 39.0% (n=89), had a moderate level of knowledge, while the minority, 27.6% (n=63), had a high level of knowledge of LACS (Figure 4.8)

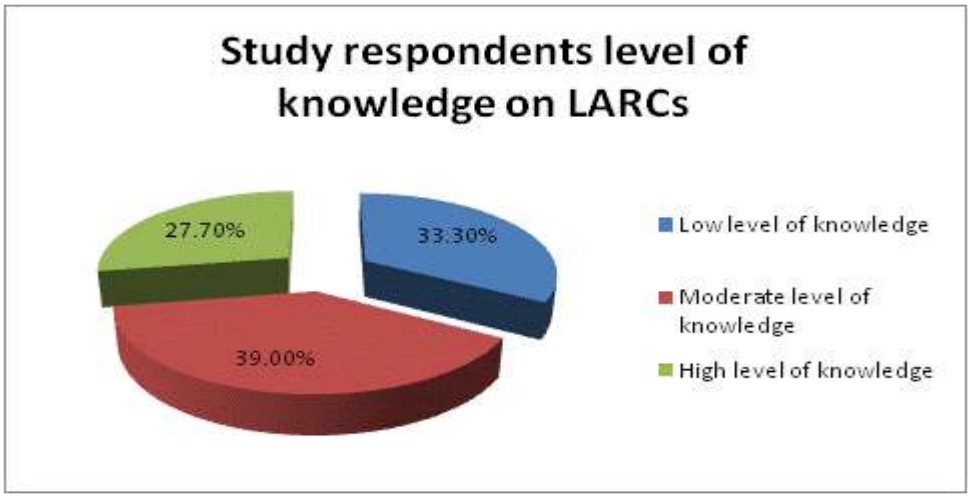

Figure 4.8: Respondents' Level of Knowledge on LARCs

A chi-square test was done to find the association between the level of knowledge and uptake of LARCs. This was found not to be statistically significant (chi-square value =2.125, df=2, p-value =0.346) (Table 4.3).

Table 4.3: Chi-Square Test of Association between Level of Knowledge and Uptake of LARCs.

Variable		Uptake/use of LARCs		Chi-square test value	Degree of freedom (df)	p-value
		Yes	No			
Level of knowledge	Low	4	72	2.125	2	0.346
	Moderate	10	79			
	High	7	56			
Total		**21**	**207**			

4.4 Association between Level of Knowledge on Long Acting Reversible Contraceptives (LARC) and Uptake of LARC among Adolescent Girls Aged 17-19 at Gatundu KMTC Campus

The study respondents' knowledge of LARCs was assessed using five (5) questions. A Correct answer scored one mark while an incorrect one scored a 0 mark. Study findings showed that 80.7% (n=184) of the study respondents gave correct answers on the

definition of LARCs, while 56.1% (n=128) gave incorrect answers on types of LARCs. About three-quarters of respondents, 64.9% (n=148) did not know the benefits of LARCs. The majority of the study participants, 73.7% (n=168), knew that implants were hormone-releasing contraceptives. In comparison, 57% (n=130) gave incorrect answers on whether intra-uterine contraceptive devices or coils took time to be effective against conception (Table 4.2).

4.5 Socio-Cultural Factors Associated with the Use of LARCs among Adolescent Girls Aged 17-19 Years at Gatundu KMTC campus

4.5.1 Source of Decision To Use LARCs

Less than half of the study respondents, 38.2% (n=87), reported they decided to use LARCs on their own, while slightly more than a quarter, 29.8% (n=68), followed advice from friends 29.8% (n=68). A minority of the respondents, 4.8% (n=11), reported they got advice on the use of LARCs from relatives (Figure 4.9).

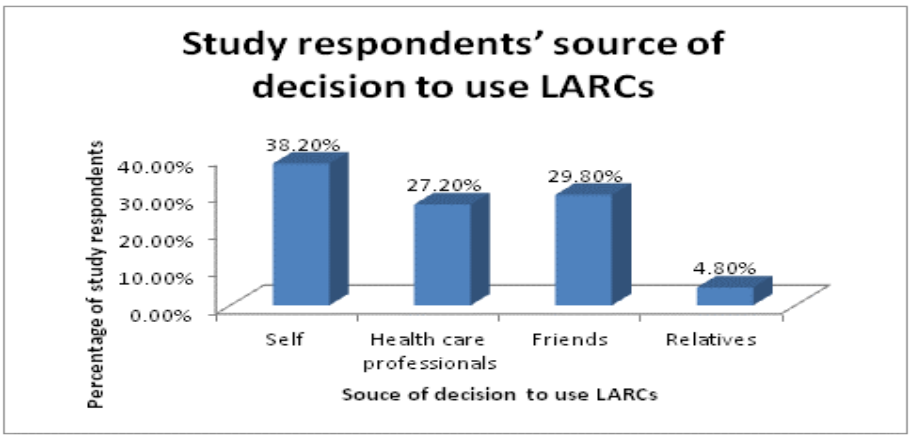

Figure 4.9: Respondents' Source Of Decision to Use LARCs

4.5.2 Religion

The majority of the study respondents, 64.5% (n=147), reported that religion did not influence their use of LARCs, while 35.5% (n=81) said it influenced (Figure 4.10).

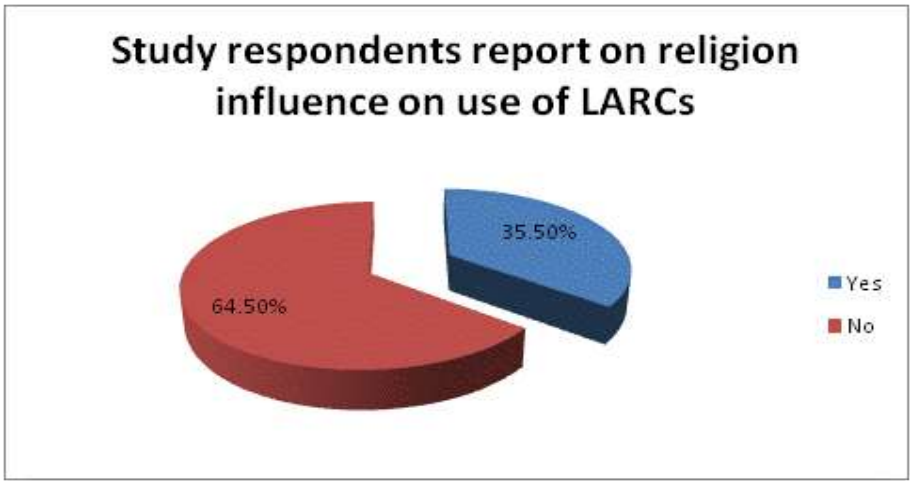

Figure 4.10: Respondents' Report on Religion Influence on the Use of LARCs

4.5.3 Misconconceptions

More than half of the respondents, 64% (n=146), reported that misconceptions did not influence their use of LARCs, while 36% (n=81) said it influenced (Figure 4.11).

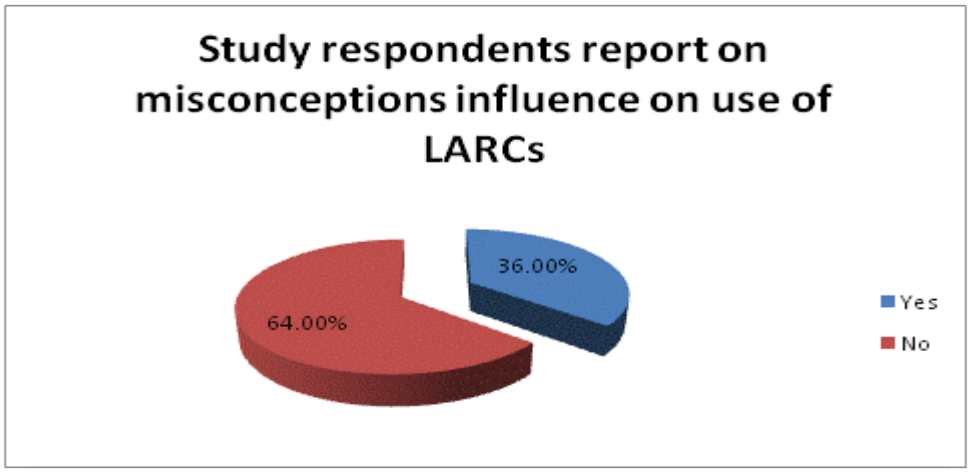

Figure 4.11: Respondents' Report On Misconceptions Influence on Use of LARCs

4.5.4 Culture

The majority of the study respondents, 65.8% (n=150), reported that Culture did not influence their use of LARCs, while 34.2% (n=78) said it influenced (Figure 4.12).

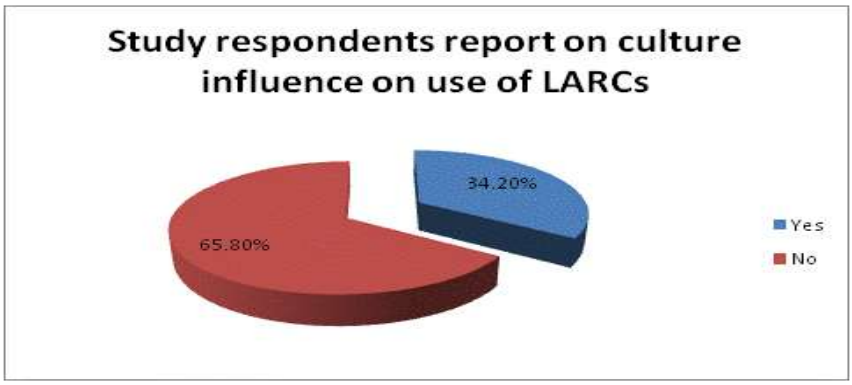

Figure 4.12: Respondents' Report on Culture Influence on the Use of LARCs

4.5.5 Myths

Nearly three-quarters, 71.5% (n=163) of the study respondents reported that myths did influence their use of LARCs, while 28.5% (n=65) said it did not influence (Figure 4.13).

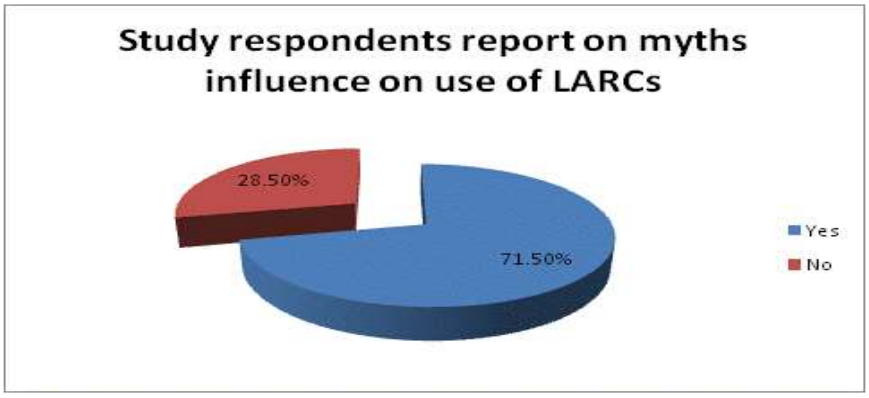

Figure 4.13: Respondents' Report on Myths Influence on the Use of LARCs

4.5.6 Social Class/Groupings

More than three-quarters of the study respondents, 83.3% (n=190), reported that social class/groupings did not influence their use of LARCs, while 16.7% (n=38) said it influenced (Figure 4.14).

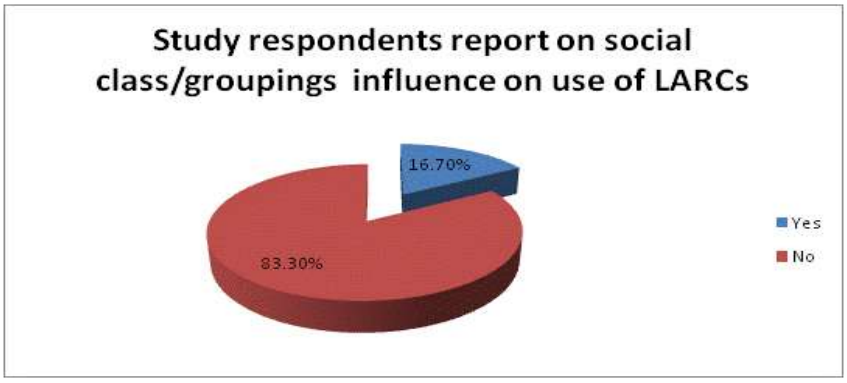

Figure 4.14: Respondents' Report on Social Class/Groupings Influence on the Use of LARCs

4.5.7 Association between Socio-Cultural Factors and Uptake of LARCs

The Chi-square/fisher exact test was used to determine the association between socio-cultural factors and uptake of LARCs. Who influenced the decision to use LARCs (χ^2=12.540, df=3, **p=0.006**), myths (χ^2=9.224, df=1, p= **0.002)** and social class/grouping (Fisher exact test p-value= **0.029)** were significantly associated with uptake of LARCs. In contrast, religion (χ^2=0.067, df=1, p=0.796), misconceptions(χ^2=0.477,df=1, p=0.490) and Culture (χ^2= 2.363, df=1, p= 0.124) were statistically insignificant (Table 4.4).

Table 4.4: Chi-Square/Fisher Exact Test of Association between Socio-Cultural Factors and Uptake of LARCs

Variable	Category	Uptake/Use of LARCs		Chi-square/fisher exact value, df, P value
		Yes	**No**	
Who influenced the decision to use LARCs	Self	4	83	χ^2=12.540
	Health care professionals	5	57	df=3
				p=0.006
	Friends	8	60	
	Relatives	4	7	
	Total	21	207	
Religion	Yes	8	73	χ^2=0.067
	No	13	134	df=1
	Total	21	207	p=0.796
Misconceptions	Yes	9	73	χ^2=0.477
	No	12	134	df=1
	Total	21	207	p=0.490
Culture	Yes	4	74	χ^2= 2.363
	No	17	133	df=1
	Total	21	207	p= 0.124
Myths	Yes	21	142	χ^2= 9.224[a]
	No	0	65	df=1
	Total	21	207	p= **0.002**
Social class/groupings	Yes	0	38	Fisher exact test p-value= **0.029**
	No	21	169	
	Total	21	207	

4.5.8 Independent Factors Associated with Uptake of LARCs

The finding revealed that the source of the decision to use LARCs was significantly associated with the uptake of LARCs. Study participants who reported that their source of decision to use LARCs was relatives were 17.6 times more likely to use LARCs than those who reported their source of decision to use LARCs was self (aOR=17.6, CI=1.602-193.391, p =**0.019**) (Table 4.5). Multi-variate regression analysis was done for all the variables that were considered statistically significant.

Table 4.5: Multi-Variate Logistic Regression of Association between Socio-Cultural Factors and Uptake of LARCs

Category	B	df	aOR	95% CI for EXP(B)		P value
				Lower	Upper	
Source of decision to use LARCs						
Self		Ref				
Health care professionals	-1.157	1	0.314	0.077	1.280	0.106
Friends	0.006	1	1.006	0.292	3.469	0.993
Relatives	2.868	1	17.600	1.602	193.391	0.019
Myths						
Yes		Ref				
No	-19.910	1	.000	.000	.	.997
Social class/groupings						
Yes		Ref				
No	19.862	1	422756362.926	.000	.	0.996

4.5.9 Hypothesis Testing

A chi-square test was done to find the association between the level of knowledge and uptake of LARCs. This was found not to be statistically significant (chi-square value =2.125, df=2, p =0.346); we, therefore, fail to reject the null hypothesis that states there is no significant relationship between the level of knowledge on LARCs and the use of LARCs among adolescent girls aged 17-19 Years in Gatundu KMTC campus.

Multi-variate logistic regression tested the association between socio-cultural factors and the uptake of LARCs, and the finding revealed that only the source of the decision to use LARCs was significantly associated with the uptake of LARCs; therefore, we accept the null hypothesis that states there is no significant relationship between socio-cultural factors and use of LARCs among adolescent girls aged 17-19 years at Gatundu KMTC campus.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter dealt with discussion as per the study objectives, conclusion and recommendations

5.2 Discussion

This study focused on the uptake of long-acting reversible contraceptives and their associated factors among adolescents aged 17 to 19 years at Kenya Medical Training College Gatundu campus.

5.2.1 Proportion of LARC Use among Adolescent Girls Aged17 to 19 Years

Only 9.2% of respondents utilized LARCs. The most prevalent LARCs were Depo-Provera and 5-year implants. Fewer girls used F.P. compared to those who were in need. The results of this study are consistent with those previously reported. Previous research indicated that fewer adolescents in Kenya sought contraceptives (Obare *et al.,* 2019). In an earlier study by Sedgh and Ashford (2009), it was found that a third of sexually active women aged 15 to 24 years reported unmet contraceptive requirements. According to the Factsheet, a Nigerian study concluded that contraception use was still low, as only 9% of married women aged 15-49 years used LARCS as modern contraception (Agbana *et al.,* 2023). In addition, the Nigerian study found that approximately 22% of women aged 15 to 49 years used some form of long-acting reversible contraception (Premium Times, 2013). Even in developed nations, the use of LARCs was very low. In the United Kingdom, for instance, the use of LARCs remained low among women aged 16- to 19-year-olds despite the method's availability and at no cost in government health facilities (American College of Obstetricians and Gynecologists, 2018). This study was congruent with a study by Sambah *et al.* (2022) that found LARC utilization was higher among adolescent girls

and young women who had at least one child compared to adolescents and young women with no children. The likelihood of using a LARCs increases as the number of children rises

5.2.2 Level of Knowledge on the Use of LARC among Adolescent Girls Aged 17-19

Two-thirds of the adolescents were found to be aware of LARCs despite their low uptake. Implants and Depo-Provera were the most well-known LARCs. These results were consistent with those of Obare *et al*.(2019), who noted that fewer eligible adolescents (19.6 percent) sought contraceptives despite having above 98 percent knowledge of family planning (F.P.), and a study done by Aryeetey *et al*. (2010) also highlighted a high awareness of family planning but low utilization

The current study discovered that there was no statistical significance in the association between the level of knowledge of LARCs and their utilization, However, this study was in sharp contrast with the study by Bolarinwa et al. (2019), which showed an association between 'women's knowledge of LARCs and their use. They explained that this was because women's knowledge about the efficacy and safety of LARC methods might strongly influence both the selection and decision to continue to use the selected method over time. The high level of knowledge of LARCs might be explained by the fact that the subjects of this study had all completed high school and had already undertaken a medical-related course, which was likely to increase their knowledge of contraceptives. However, there was a need for further research into why the high level of knowledge does not translate into actual utilization of LARCs by this population.

5.2.3 Social and Cultural Factors and Their Association with the Use of LARCs

Regarding social factors, society influenced more than half of the girls' decision to use a family planning method (friends, relatives, etc.). The demonization of sex among adolescents has been noted in the past (African Population and Health Research Center (APHRC), 2022). This is because parents, guardians, teachers, religious leaders, and other

opinion shapers strongly emphasize abstinence. More than half of the girls in this study thought LARCs were inappropriate for young people. Furthermore, the main barriers to using LARCs were myths about LARCs, social class, and marital status (the majority of girls were not married). The current findings have some similarities with past studies. Although sexually active adolescents need contraceptive products and services, they are deterred from using them because they perceive that having sex before Marriage is wrong (WHO, 2018). Furthermore, most opinion leaders have publicly criticized teenagers who use contraceptives, further discouraging their use (African Population and Health Research Center (APHRC), 2022).

Previously, myths and Culture have been recognized as obstacles to using LARC. APHRC. (2022) state that factors like the ability to obtain a method of contraception with other adolescents' knowledge results in a fear that the use of LACS will cause the user to be included in a group of loose people from other adolescents and the general public, which deters unmarried sexually active adolescents from using contraceptives.

Even though the current study identified several additional social issues as significant barriers to the use of LARCs, including unfavourable attitudes of healthcare professionals, a lack of accessibility, and a lack of availability, only a lack of accessibility and a lack of availability were significantly associated with LARC nonuse. These conclusions have been made before. Only 7% of Kenya's public health facilities, according to a study by Obare *et al*. (2019), offered services geared toward young people. Therefore, a significant barrier to the low use of contraceptives among young people is the lack of high-quality, youth-friendly centers and services. Most youth-friendly facilities in Kenya are housed in hospitals, with clinics open Monday through Friday from 8 am to 5 pm, making them inaccessible to teenagers who are likely to attend school during these times (Obare *et al*.,2019). The study findings agree with a previous study (Njilu, 2023), which discovered that social-cultural factors had a significant influence on the uptake of long-acting family planning methods. Social and cultural believes such as religious beliefs, cultural practices, and existing social norms have a role to play in the uptake of long-acting family planning methods.

sThe researcher concurs with the results of this study. However, due to the unmet contraceptive needs and the fact that LARCS provides highly effective protection against unintended pregnancies, more adolescent-targeted programs should be designed to encourage its uptake among non-users. I hope that this can increase the uptake of LARC and thus reduce the adverse effects of unintended pregnancies, such as lost schooling.

5.3 Conclusions

This study provides important information on the uptake of long-acting reversible contraceptives among adolescent girls aged 17 to 19 years at KMTC- Gatundu campus. Despite the high knowledge level of LARCs, that does not influence the uptake of LARCs, with only 9.2% of adolescent girls aged 17 to 19 years reported to use LARCs as a family planning method. Though utilization was not determined by the level of knowledge of the users, the decision to utilize the contraceptives was influenced by friends and relatives. With this information, the health care providers, that is, nurses, doctors, gynecologists, clinical officers, and obstetricians, will be better able to assist adolescents in identifying the positive influences and help them avoid factors that contribute to a large number of unintended pregnancies and its negative consequences.

5.3 Recommendations

Based on the aforementioned findings and conclusion, this study suggests that:

1. A multi-sectoral strategy on contraceptives that involves the ministries of education, gender, and health to increase the uptake of LARCs be deployed. In particular, strategies should be explored to enable youths to access and use LARCs at their points of use.
2. The nearby health facilities hold campaigns through outreach events and youth camps in collaboration with the KMTC Gatundu campus to raise awareness about contraceptives, including the different types, benefits, and safety of LARCs.

3. There is a need for a whole range of approaches to remove the myths in the whole population. The approaches include reproductive health professionals to dispel myths and misconceptions about F.P. use among young people and unmarried women by working with the community. The introduction of targeted sex education in schools could introduce the right information at an early age, training and equipping community health workers, and mass education of communities. This may lessen the stigma associated with girls who use contraceptives and raise interest in F.P., particularly among LARCs.
4. More enhanced education and information on prevention of sexually transmitted diseases along with contraceptives benefits and disadvantages is required to improve on the adolescents sexual reproductive health.

REFERENCES

Agbana, R. D., Michael, T. O., & Ojo, T. F. (2023). Family planning method discontinuation

American College of Obstetricians and Gynecologists. (2018). Adolescents and long-acting reversible contraception: Implants and intrauterine devices. Committee Opinion No. 539. *Obstet Gynecol, 120*(983), 8.

APHRC. (2022). *APHRC - African Population and Health Research Center—APHRC*. https://aphrc.org/

Aryeetey, R., Kotoh, A.M. and Hindin, M.J. (2010) Knowledge, Perceptions and Ever Use of Modern Contraception among Women in the Ga East District, Ghana. African Journal of Reproductive Health, 14, 27-32

Baker, C. C., & Creinin, M. D. (2022). Long-acting reversible contraception. *Obstetrics & Gynecology*, *140*(5), 883-897. https://doi.org/10.1097/AOG.0000000000004967

Bolarinwa, O, A., Olalekan Seun Olagunju, S, O,2019 Knowledge and factors influencing long-acting reversible contraceptives use among women of reproductive age in Nigeria

Bwalya, B. C., Sitali, D., Baboo, K. S., & Zulu, J. M. (2018). Experiences of antenatal care among pregnant adolescents at Kanyama and Matero clinics in Lusaka district, Zambia. *Reproductive Health*, *15*(1), 1–8.

Capili, B. (2021). Cross-Sectional Studies. *AJN, American Journal of Nursing*, *121*(10), 59–62. https://doi.org/10.1097/01.naj.0000794280.73744.fe

Cavallaro, F. L., Benova, L., Owolabi, O. O., & Ali, M. (2020). A systematic review of the effectiveness of counselling strategies for modern contraceptive methods:

What works and what doesn't? *BMJ Sexual & Reproductive Health*, *46*(4), 254–269.

Chandra-Mouli, V., Camacho, A. V., & Michaud, P.-A. (2019). WHO guidelines on preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, *52*(5), 517–522. https://doi.org/10.1016/j.jadohealth.2019.03.002

Chola, M., Hlongwana, K., & Ginindza, T. G. (2020). Patterns, trends, and factors associated with contraceptive use among adolescent girls in Zambia (1996 to 2014): A multilevel analysis. *BMC Women's Health*, *20*(1), 1–11.

Falakhe, Z. (2021). Fertility Desires and Fertility Control: Young Women's Contraceptive Decision-making in Khayelitsha, South Africa.

Frost, J. J., Henshaw, S. K., & Sonfield, A. (2018). Contraceptive needs and services: National and state data, 2018 update. *New York: Guttmacher Institute*.

Hall, K. S. (2018). The Health Belief Model can guide modern contraceptive behavior research and practice. *Journal of Midwifery & Women's Health*, *57*(1), 74–81.

Hubacher, D., Olawo, A., Manduku, C., Kiarie, J., & Chen, P.-L. (2019). Preventing unintended pregnancy among young women in Kenya: Prospective cohort study to offer contraceptive implants. *Contraception*, *86*(5), 511–517.

Ibrahim, I., & Onwudiegwu, U. (2019). Socio-demographic Determinants of Complicated Unsafe Abortions in a Semi-urban Nigerian Town: A Four-year Review. *The West Indian Medical Journal*, *61*, 163–167.

Kantorová, V., Wheldon, M. C., Ueffing, P., & Dasgupta, A. N. (2020). Estimating progress towards meeting women's contraceptive needs in 185 countries: A Bayesian hierarchical modelling study. *PLoS Medicine*, *17*(2), e1003026.

Karimi, A. (2020). *Designing public health supply chains: towards improving health commodity availability in developing countries* (Doctoral dissertation, University of Minnesota).

Kenya National Bureau of Statistics (Ed.). (2019). *2019 Kenya population and housing census*. Kenya National Bureau of Statistics.

Kenya National Bureau of Statistics [KNBS], Ministry of Health [MOH], National AIDS Control Council/Kenya, Kenya Medical Research Institute, & National Council for Population and Development. (2022). *Kenya Demographic and Health Survey 2019*. Retrieved from https://dhsprogram.com/publications/publication-fr308-dhs-final-reports .cfm

Khalili, M., Mirzazadeh, A., Chegeni, M., Abedi, L., Rajaei, L., Ardalan, G., Haghdoost, A., Nasiri, N., & Sharifi, H. (2020). Prevalence of high-risk sexual behavior among Iranian young people: A systematic review and meta-analysis. *Children and Youth Services Review*, *119*, 105526. https://doi.org/10.1016/j.childyouth.2020.105526

Marrone, G., Abdul-Rahman, L., De Coninck, Z., & Johansson, A. (2018). Predictors of contraceptive use among female adolescents in Ghana. *African Journal of Reproductive Health*, *18*(1), 102–109.

Menon, S., Alderman, E. M., Chung, R. J., Grubb, L. K., Lee, J., Powers, M. E., ... & Wallace, S. B. (2020). Long-acting reversible contraception: specific issues for adolescents. *Pediatrics*, *146*(2). https://doi.org/10.1542/peds.2020-007252

Millinium developmental goals report. (2015). *Adolescents Face Risk of HIV and Harmful Practices*. *2014*.

Morris Karithi Njilu. (2023). Socio-Cultural Factors Influencing Uptake of Long-Acting Reversible Contraceptives among Reproductive Women in Kenya. *Lakhomi Journal Scientific Journal of Culture*, *3*(4), 158-169. https://doi.org/ 10.33258/lakhomi.v3i4.839

Nanjundeswaraswamy, T. S., & Divakar, S. (2021). Determination of sample size and sampling methods in applied research. *Proceedings on engineering sciences*, *3*(1), 25-32.

Obare, F., Birungi, H., Undie, C.-C., Wanjiru, M., Liambila, W., & Askew, I. (2019). *Levels, trends, and determinants of contraceptive use among adolescent girls in Kenya*.

Prata, N., Weidert, K., & Sreenivas, A. (2018). Meeting the need: Youth and family planning in sub-Saharan Africa. *Contraception*, *88*(1), 83–90.

Sambah, F., Aboagye, R, G., Seidu, A,A., Tengan, C,L., Salihu,T.,Opoku, B., & Ahinkorah, B, O,(2022) *Long-acting reversible contraceptives use among adolescent girls and young women in high fertility countries in sub-Saharan Africa. Reprod Health. 2022; 19: 209* Retrieved from https://www.ncbi.nlm .nih.gov/pmc /articles/PMC9670563/#

Sedgh, G., Ashford, L. S., & Hussain, R. (2017). *Unmet need for contraception in developing countries: Examining women's reasons for not using a method*.

Strasser, J., Borkowski, L., Couillard, M., Allina, A., & Wood, S. (2016). *Long-acting reversible contraception: Overview of research and policy in the United States*.

Tebeje, B., & Workneh, D. (2017). Prevalence, Perceptions and Factors Contributing to Long Acting Reversible Contraception Use among Family Planning Clients, Jimma Town, Oromiya Region, South-West Ethiopia. *Journal of Women's Health Care*, *06*(01). https://doi.org/10.4172/2167-0420.1000351

United Nations, & Department of Economic and Social Affairs. (2020). *Family planning and the 2030 agenda for sustainable development: Data booklet*.

WHO, W. H. (2019). *Contraception: Fact sheet: family planning enables people to make informed choices about their sexual and reproductive health*. World Health Organization.

WHO. (2019). *Global Strategy for Women's, Children's and Adolescents' Health Data Portal*. https://www.who.int/data/maternal-newborn-child-adolescent-a

APPENDICES

Appendix I: Participant's Information

Catherine Mwontunene Mungania,

P O. Box…5-0521
Nairobi.

Reg.No: HSN 311-7501/2016

Tel: No. 0789088315/0724847575

Email; catherinemungania7@gmail.com

Dear Respondent,

I am a postgraduate student of Jomo Kenyatta University of Agriculture And Technology School of Nursing undertaking research on the uptake of long-acting reversible contraceptives among adolescent girls aged 17-19 years at Gatundu kenya medical training college campus in Kiambu County as a partial fulfillment for a master of science degree in nursing (reproductive health and midwifery) award.

The purpose of this letter is to request you to participate in this study by filling in the questionnaire and answering all the questions as sincerely as possible to the best of your knowledge in order to help me fulfill the objectives of this significant study. The ultimate goal of the study is to provide insight into the uptake of long-acting reversible contraceptives among college girls.

Your taking part is entirely voluntary. You may decide not to take part, or you may decide to withdraw from the study at any time without this decision affecting your opportunity to participate in other studies. The information you give will be treated with the utmost confidentiality and will only be used for this study. To assist in concealing your identity, you are requested not to write your name anywhere on the question paper. Your acceptance and participation is highly appreciated.

Thank you.

Researcher Catherine Mwontunene Mungania.

Appendix II: Respondents Consent Form

I have read and understood what the study is about and have been able to have my questions answered. I understand that all information I give will be treated with the utmost confidentiality and will be used for research purposes only. I hereby give consent to take part in the study.

Respondent's number/ Code _____

Date: _____

I have explained the purpose of the study to the study participants and, to the best of my knowledge, have understood the purpose, risks, and benefits of the study.

Researchers' Name: Catherine Mwontunene Mungania

Researcher signature_____

Appendix III: Adolescent Information and Assent Form

UPTAKE OF LONG-ACTING REVERSIBLE CONTRACEPTIVES AMONG ADOLESCENT GIRLS AGED 17-19 YEARS AT GATUNDU KMTC CAMPUS IN KIAMBU COUNTY

Catherine Mwontunene Mungania is a postgraduate student of Jomo Kenyatta University of Agriculture And Technology School of Nursing undertaking research on the uptake of long-acting reversible contraceptives among adolescent girls aged 17-19 years at Gatundu kenya medical training college campus in Kiambu County as a partial fulfillment for a master of science degree in nursing (reproductive health and midwifery) award.

I am being invited to take part in this study because I fall in the Age required for the study; it is up to me to participate in this study; no one will force me to be in this study, and no one will be angry at me if I refuse at me to participate in this study.

If I choose to be in this study, I can decide to stop participating in it at any time, and there will be no victimization of any nature.

If I want to participate in the study, I will be asked to sign this form. My head of department will need to sign a consent form before I am enrolled in the study, but I do not have to participate in the study even if they sign it. The researcher will not enroll me in the study unless I agree to do so.

I understand that I should feel free to talk to the researcher if anything is not clear. I can decide to be in the study, not be in the study, or take more time to decide, and I can change my mind later. I can ask the researcher any question I may have at any time during my study participation.

If I choose to participate in the study, I will voluntarily and truthfully answer the questions in the questionnaire as guided by the researcher and research assistants.

There will be no harm to me if I participate in this study; I will only be required to fill in the questionnaire.

My privacy will be respected, and my identity will not be included in the study document.

I am not required to pay anything for my participation in the study. There will also be no payment to me by the researcher.

If I have any questions or desire further information about this study before or during participation, I can contact Catherine Mwontunene Mungania at telephone no 0724847575.

Appendix IV: Participant Assent

My signature on this assent form means:

I have read and understood this adolescent information and consent form

I have had enough time to consider the information provided and to ask for advice if necessary

I have had the opportunity to ask questions and had acceptable answers to my questions

I understand that all the information gathered will be kept confidential

I understand that my participation in this study is voluntary and that I am completely free to refuse to participate or to withdraw from this study at any time without any victimization.

I understand that I can continue asking questions at any time regarding my participation in the study.

I understand that if I put my name at the end of this form, it means I agree to be in the study.

I will receive a copy of this assent form for my records

I agree to participate in this study

Participant's
signature……Date……

Researcher's
signature……..Date……..

Appendix V: Respondents' Questionnaire

Instructions

1. Do not write your name on the questionnaire
2. Answer all the questions
3. Appropriately tick **yes** or **no** where required
4. Fill in answers on the provided spaces
5. **This is private and confidential**

Part A. Demographic data

1. Indicate your Age in completed years.....

2. What is your marital status?

a) Married ☐

b) Single ☐

c) Dating ☐

3. Which is your religion

(a) Catholic ☐

(b) Protestant ☐

(c) Pentecostal/charismatic ☐

(d) Other Christian ☐

(e) Muslim ☐

(f) Traditionalist ☐

4. Which region of Kenya do you come from?

(a) Central ☐

(b) Eastern ☐

(c) Rift valley ☐

(d) Coast ☐

(e) Western ☐

(f) Nyanza ☐

(g) Nairobi ☐

Part C-Proportional of adolescents using long-acting reversible contraceptives

5. Have you ever had sex? yes ☐ no ☐

6. Are you pregnant now? yes ☐ no ☐ not sure ☐

7. Have you been pregnant? Consider terminated pregnancies (abortions/miscarriage and stillbirth) yes ☐ no ☐

8. Would you fear to be seen going for long-acting reversible contraceptives from family planning clinics? (*Tick where appropriate)*

- Strongly agree ☐
- Agree ☐
- Neutral ☐
- Disagree ☐
- Strongly disagree ☐

9. A). In the last two years, which contraceptives have you used

Two (2) year implant ☐

Three (3) year implant ☐

Five (5) year implant ☐

Twelve (12) year IUCD (coil) ☐

Oral pills ☐

Three months injection (Depo Provera) ☐

Emergency pills P2 ☐

Condoms ☐

None ☐

Others……. Mention it here

9. B). How accessible is/are the family planning methods you have used above (*tick the correct one*)

- Easily accessible
- Sometimes accessible
- Struggle to access

9. C). How did you select the methods of contraception above? (*Tick the correct one*)

Advised by healthcare provider □

Self-decision □

Recommended by a friend □

Recommended by a relative □

Other (please specify)……..... □

Don't remember □

Part B: Knowledge of Long-Acting Reversible Contraceptives

10 (a)What are **Long Acting Reversible Contraceptives (LARCs)**/family planning methods? (*Tick the correct one*)

- Method of contraceptive that protects the client from unwanted pregnancy for an extended period ☐
- Methods of contraceptives that a client has to use every day to prevent pregnancy ☐
- Method of contraceptive that is used at least once in a menstrual cycle ☐
- I don't know ☐

10 (b) Which **Long Acting Reversible Contraceptives (LARC)** do you know? *(tick the ones you know)*

Implants, e.g., implanon, jadel, ☐

IUCD/Coil, e.g., copper T/Mirena ☐

Injection, e.g., depo provera ☐

Combined oral pills ☐

Progesterone-only pills ☐

Emergency contraceptive pill P2 ☐

Condoms e.g. male, female ☐

10. (c). Tick the benefits of Long Acting Reversible Contraceptives that you know (*tick the correct ones*)

They are highly effective ☐

They are safe ☐

Clients are not required to return to health facility frequently ☐

They cause abortions ☐

10. (d) Implants are hormone-releasing contraceptives (*tick the correct one*)

a) True ☐

b) False ☐

10 (e). Intra-uterine cervical devices or the coil take time to be effective against conception

a) True ☐
b) False ☐

11. Have you ever been educated on long-acting reversible contraceptives, LARCs?

- Yes ☐
- No ☐

12. Which of these statements describes you (*Tick one*)

a) I am knowledgeable about long-acting reversible contraceptives ☐

b) I need more knowledge on LARC contraceptives before I start using them ☐

c) I am not knowledgeable about LARC contraceptives, and I don't think it's the right time for me to know about them ☐

Part C- Socio-cultural factors associated with contraceptive method choice among adolescent girls aged 17-19 years

13. Which of the following factors hinders the use of long-acting reversible contraceptives? (*You are allowed to tick more than one*)

- Marital status ☐
- Religion ☐
- Culture ☐
- Young Age ☐
- Fear side effects ☐
- Misconceptions ☐
- Service provider attitude ☐
- Social influence ☐
- Not accessible □
- Not readily available □

14. Do you think young girls of your Age within your community should use LARCS contraceptives?

- Yes, if they are married ☐
- Yes, if they are sexually active ☐
- No ☐

15. According to you, long-acting reversible contraceptives nonuse is due to myths?

- YES ☐
- NO ☐

- Explain your answer

  ……

  ……

  ……

  ……

16. What is your reason for not using long-acting reversible contraceptives?

- Contraceptives are for older women ☐
- Contraceptives are expensive ☐
- Fear of the side effects ☐
- I feel embarrassed to go for it ☐
- Not readily available in my locality □
- Not aware they exist □

17. Have you ever experienced any side effects from any of the LARCs? Yes □ No □

If yes, which side effect……

……

……..

18. Do you find it difficult to go for LARC contraceptives from the youth resource center?

- Yes ☐
- No ☐

Thank you for your participation and time.

Appendix VI: Authorization from the College of Health Sciences

JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY

COLLEGE OF HEALTH SCIENCES
SCHOOL OF NURSING
OFFICE OF THE DEAN

P.O. Box 62000-00200 NAIROBI TELEPHONE : 067-52-71901/4 Extension : 4063/4064 , Email: dsonnursing@jkuat.ac.ke/school.nursing@jkuat.ac.ke

DATE: 8TH JULY, 2022

REF: **HSN311-7501/2016**

TO WHOM IT MAY CONCERN

RE: CATHERINE MWONTUNENE MUNGANIA – REG: HSN311-7501/2016

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

She has successfully defended her proposal and has been granted ethical approval from Institutional Ethical Review Committee of Jomo Kenyatta University of Agriculture and Technology.

We therefore kindly request you to grant her the NACOSTI permit.

Yours faithfully,

06 JUL 2022

DR. GRACE MBUTHIA
AG. DEAN, SCHOOL OF NURSING

Appendix VII: Authorization from Ethical Review Committee

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
P.O BOX 62000(00200) NAIROBI, Tel:(067) 58700001-4
(Office of the Deputy Vice Chancellor, Research Production and Extension Division)

JKUAT INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE (ISERC)

REF: JKU/2/4/896B **Date: 30th June 2022**

CATHERINE MWONTUNENE MUNGANIA
SCHOOL OF NURSING, JKUAT

Dear Ms Mungania,

RE: UPTAKE OF LONG ACTING REVERSIBLE CONTRACEPTIVES AMONG ADOLESCENT GIRLS AGED 17-19 YEARS AT GATUNDU KENYA MEDICAL TRAINING COLLEGE CAMPUS IN KIAMBU COUNTY

This is to inform you that JKUAT Institutional Scientific and Ethical Review Committee (ISERC) has reviewed and approved your above research proposal. Your application approval number is **JKU/IERC/02316/0649.** The approval period is **30th June 2022** to **29th June 2023**.

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, Material Transfer Agreements) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by JKUAT ISERC.
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to JKUAT ISERC within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to JKUAT ISERC within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to JKUAT ISERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely

Dr Patrick Mburugu
Chair, JKUAT ISERC

30 JUN 2022
APPROVED

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

Appendix VIII: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 869535

Date of Issue: 21/July/2022

RESEARCH LICENSE

This is to Certify that Ms., Catherine Mwentunene Muraguia of Jomo Kenyatta University of Agriculture and Technology, has been licensed to conduct research in Kiambu on the topic: UPTAKE OF LONG ACTING REVERSIBLE CONTRACEPTIVES AMONG ADOLESCENT GIRLS AGED 17-19 YEARS AT GATUNDU KENYA. MEDICAL TRAINING COLLEGE CAMPUS IN KIAMBU COUNTY for the period ending : 21/July/2023.

License No: NACOSTI/P/22/19810

869535

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix IX: Authorization from County Commissioner Kiambu

OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT
COUNTY COMMISSIONER, KIAMBU

Telephone: 066-2022709
Fax: 066-2022644
E-mail: countycommkiambu@yahoo.com
When replying please quote

County Commissioner
Kiambu County
P.O. Box 32-00900
KIAMBU

Ref.No: **ED.12/1(A)/VOL.V/139**

4TH AUGUST, 2022

Ms.Catherine Mwontunene Mungania
Jomo Kenyatta University of Agriculture and Technology
P.O. Box 62000 - 00200
NAIROBI, KENYA.

RE: RESEARCH AUTHORIZATION

Reference is made to National Commission for Science, Technology and Innovation Letter Ref No. **NACOSTI/P/22/19010** dated **21st July, 2022.**

You have been authorized to conduct research on "***UPTAKE OF LONG ACTING REVERSIBLE CONTRACEPTIVES AMONG ADOLESCENT GIRLS AGED 17-19 YEARS AT GATUNDU KENYA MEDICAL TRAINING COLLEGE CAMPUS IN KIAMBU COUNTY, KENYA***". The data collection will be carried out in ***Kiambu County*** *for a period ending* **21st July, 2023.**

You are requested to share your findings with the County Education Office, Kiambu, upon completion of your research.

Festus Kimeu
FOR: COUNTY COMMISSIONER
KIAMBU COUNTY

Cc National Commission for Science, Technology and Innovation
P.O. Box 30623-00100
NAIROBI

County Director of Education
KIAMBU COUNTY

County Director of Health
KIAMBU COUNTY

The Deputy County Commissioners (***For information and record purposes***)
KIAMBU COUNTY

"Our Youth our Future. Join us for a Drug and Substance free County".

Appendix X: Authorization From County Government of Kiambu Department of Health Services

COUNTY GOVERNMENT OF KIAMBU
DEPARTMENT OF HEALTH SERVICES

All correspondence should be addressed to HEAD
HRDU – HEALTH DEPARTMENT
Email address: mndritu@gmail.com
mkwasa@live.com
Tel. Nos: 0721641516
0721974633

HEALTH RESEARCH AND DEVELOPMENT
UNIT
P. O. BOX 2344 – 00900
KIAMBU

Ref. No.: KIAMBU/HRDU/22/09/20/RA_MUNGANIA Date:20th Sept 2022

TO WHOM IT MAY CONCERN

RE: CLEARANCE TO CONDUCT RESEARCH IN KIAMBU COUNTY

Kindly note that we have received a request by Ms. Catherine Mwontunene Mungania of Jomo Kenyatta Univresity of Agriculture and Technology to carry out a study in Kiambu County, the research title being "**Uptake Of Long Acting Reversible Contraceptives Among Adolescent Girls Aged 17-19 Years At Gatundu Kenya Medical Training College Campus In Kiambu County**".

We have duly inspected her documents and found that she has been cleared by NACOSTI to carry out the research for a period ending **21st July 2023**. She thus does not need any further clearance with another regulatory body in order to conduct research within the county of Kiambu.

However, it is incumbent upon the institution where she is carrying out research to ensure that she receives adequate supervision during the process of conducting the research. This note also accords her the duty to provide a feedback on her research to the county at the conclusion of her research.

DR. MWANCHA KWASA
COUNTY CLINICAL RESEARCH OFFICER
KIAMBU COUNTY

Appendix XI: Data Collection Authorization from KMTC Gatundu Campus

Please address all correspondence to;
KMTC GATUNDU CAMPUS
P.O Box 770 – 01030, Gatundu

Tel: 0797645717
Email: gatundu@kmtc.ac.ke
Website: www.kmtc.ac.ke

KMTC GATUNDU CAMPUS

When replying please quote;

Ref No.:MTC/GTD/ST/10/VOL.2/98 **Date: Thursday, 22 September 2022**

TO WHOM IT MAY CONCERN

RE: AUTHORITY TO COLLECT DATA AT KENYA MEDICAL TRAINING COLLEGE GATUNDU CAMPUS

Kindly note that we have received a request by Ms. Catherine Mwontunene Mungania of Jomo Kenyatta University of Agriculture and Technology to collect data for her research at Kenya Medical Training College - Gatundu campus, the research titled "**UPTAKE OF LONG-ACTING REVERSIBLE CONTRACEPTIVES AND ITS ASSOCIATED FACTORS AMONG ADOLESCENT GIRLS AGED 17-19 YEARS AT GATUNDU KENYA MEDICAL TRAINING COLLEGE, KIAMBU COUNTY**"

We have duly inspected her documents and found that she has been cleared by both NACOSTI and the County Government of Kiambu department of health services to collect the data for the period ending

21st July 2023.

JAMES KARANJA
F: PRINCIPAL