

**FACTORS ASSOCIATED WITH THE USE OF
CONTRACEPTIVES AMONG GIRLS ATTENDING
SECONDARY SCHOOLS IN KISUMU EAST SUB-
COUNTY, KENYA**

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**Factors Associated With the Use of Contraceptives among Girls
Attending Secondary Schools in Kisumu East Sub-County, Kenya**

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DECLARATION

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

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KEMRI

DEDICATION

I dedicate this work to the late Prof. Peter Kibanya Mwaniki – for the guidance, patience and insight in the development of this work. You did not live to see the fruition of your efforts in this work, but your legacy lives in our hearts and in your contribution to research.

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ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ARH	Adolescents' Reproductive Health
CBS	Central Bureau of Statistics
ERC	Ethical Review Committee
FGDs	Focus Group Discussions
HIV	Human Immunodeficiency Virus
IUD	Intra uterine devices
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KDHS	Kenya Demographic and Health Survey
KEMRI	Kenya Medical Research Institute
MDGS	Millennium Development Goals
OC(s)	Oral Contraceptive(s)
SPSS	Statistical Package for Social Sciences
STDs	Sexually Transmitted Diseases
UNFPA	United Nations Population Fund
WHO	World Health Organization

DEFINITION OF TERMS

Adolescence	The period between childhood and adulthood. Usually 10-19 years
Contraceptive	A device/ drug or medical procedure that prevents pregnancy from acts of sexual intercourse by interfering with normal process of ovulation, fertilization and/or implantation.
Puberty	The period during which adolescents reach sexual maturity and become capable of reproduction.
Reproductive Health	Reproductive health implies that people are able to have a responsible, satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so.
Taboo	A social or religious custom prohibiting or forbidding discussion of a particular practice or forbidding association with a particular person, place, or thing.

ABSTRACT

Pregnancy is one of the leading reasons for adolescent girls dropping out of secondary schools in Kenya. Teenage pregnancy presents several challenges to the teenage girl including: maternal mortality, negative outcome of the pregnancy and exposure to abortion. A teenagers' contraceptive use is influenced by several factors at the individual, cultural and policy levels. This study was carried out in Kisumu East Sub-County in April 2016. The contraceptive prevalence rate (CPR) in the study site is 27%, compared to a National CPR of 50.1% among sexually active unmarried girls aged between 15-19 years. The main objective of this study was to determine the CPR and factors associated with contraceptive use among girls attending secondary schools in Kisumu East Sub-County. A total of 320 girls in secondary schools were recruited in to the study. Data was collected using self-administered questionnaires and focus group discussions (FGD). The data was then analysed using SPSS. Descriptive analysis was carried out to obtain descriptive statistics. Pearson's chi-square test (P -value <0.05) and odds ratio with corresponding 95% confidence intervals were computed to establish the factors associated with contraceptive use. The mean age of the respondents was 16 years. It was established that among the sampled students 55% had experienced sexual contact. Of the 55% that had experienced sexual debut, 35% (accounting for 19% of the total respondents) were hitherto sexually active. Only 29% of the girls used a contraceptive method at their sexual debut. Approximately 40% of girls who reported to be sexually active (have sex regularly) were using at least a method of contraception-the common method mentioned being condom (mentioned by 76% of the sexually active users of contraceptives). The other methods mentioned include: oral contraceptive pills (16%), emergency pill (four percent) and withdrawal (four percent). After adjustment using logistic regression, the following were established to be independently associated with contraceptive use: girls in Form 3 were five times more likely to use contraceptives as compared to girls in Form 1 (Adjusted Odds Ratio (AOR) = 4.71; 95% Confidence Interval (CI) = 1.97 – 6.89; $P < 0.001$). Girls in the 18 – 19 age group were 3.4 times (AOR = 3.43; 95% CI = 1.16 – 12.43; $P = 0.005$) likely to use contraceptives as compared to the 15 – 16 years age group. The type of school was a predictor to contraceptive use with girls attending mixed day schools being 3.21 times (AOR = 3.21; 95% CI = 1.93 – 8.87; $P = 0.014$) likely to use contraceptives as compared to their girls-only boarding schools counterparts. Arising from the FGDs, barriers to contraceptive use included parental disapproval, peer influence, potential negative health outcomes of contraceptive use, inadequate knowledge of other modern methods apart from the condom. The study revealed that more than half of girls attending secondary schools in Kisumu East District had experienced sexual debut which poses a public health challenge to this group due to exposure to sexually transmitted diseases and teenage pregnancy. It further revealed that mothers are an important source of information on sex and contraceptives. Therefore, there is need for parents (especially mothers) and guardians to be provided with information relating to adolescent sexual and reproductive health within the school set up to complement, rather than contradict what is taught in schools, as they (mothers/parents) are an integral source of information on contraceptives to the girls aged between 15-19 years.

CHAPTER ONE

INTRODUCTION

1.1 Background information

About eight percent of the world's population are adolescent girls aged between 15 and 19 years old. Out of these an estimated 250 million live in developing countries, and account for about one-sixth of all women of the reproductive age of 15-49 (UNFPA, 2016). Every year, an estimated 21 million girls aged 15 to 19 years become pregnant in developing countries, with 16 million giving birth. Although the global adolescent birth rate has significantly declined from 65/1000 women in 1990 to 47/1000 in 2015 signifying an overall progress, the absolute number of adolescents within the population disproportionately increased. This is especially true in developing countries (WHO, 2018).

About 11% (29 million) of adolescent girls are sexually active, do not want to become pregnant but are not using a modern method of birth control (Khan, 2008). 23 million adolescent girls in developing countries have an unmet need of modern contraception (WHO, 2018).

About 16 million women between 15 and 19 years give birth each year. Of the foregoing, 3 million undergo unsafe abortion, making pregnancy and childbirth the leading cause of deaths for teenage girls (Advocates for Youth 2013). Approximately 11% of global births occur to adolescent women, 95% of them in developing countries (Vogel *et.al.*, 2015, WHO, 2011).

Total demand and contraceptive use are fundamental measures of access to Sexual and Reproductive Health and Rights (SRHR). Universal access to Sexual and Reproductive Health (SRH) by 2030 corresponds to targets 3.7 and 5.6 of the United Nations Sustainable Development Goals (SDGs), and it is also recognized in target 5.B of the Millennium Development Goals (UN, 2015). In fact, indicator 3.7.2 of the SDGs explicitly refers to Adolescent Birth Rate (UN, 2015).

The environment in which young people are making decisions related to sexual and reproductive health is rapidly evolving (Gupta, 2003). They are growing up in circumstances quite different from those of their parents, with greater access to formal education, increasing need for technological skills such as computer and internet literacy. Consequently, they are more exposed to new ideas through print media, electronic media and social media, have different job opportunities, and are thus more susceptible to sexual experimentation (UNFPA, 2008). Although abstinence from sex has been emphasized, the fact that teenagers are engaging in premarital sex cannot be wished away. Rates of initiation into sexual activities during young adulthood are rising and so is the high HIV prevalence rate in Sub Saharan Africa further raising the risks associated with early sexual activity (Hindin, 2009). An adolescent's decision to initiate or delay sexual activity is complex. Existing evidence points to several reasons for consensual sexual intercourse among adolescents. These include: quest for mastery of psychosocial development, rebellion, peer group identification and validation, celebrating success and as a way of coping with frustration and failure (Brook-Gunn and Furstenburg, 2009).

While unmarried adolescents have a higher unmet need for contraceptives than married women of their same age (Blanc *et.al.*, 2009; MacQuarrie 2014; UN 2014), their uptake is lower than the latter group. Their contraceptive use is influenced by several factors at the individual, cultural and policy levels including the desire to avoid pregnancy, knowledge of contraceptive methods, access to contraceptive methods, socio-economic status and societal norms. Differences within and between countries in relation to availability of contraceptives include costs and access to contraceptive and other reproductive health services. Similarly, in developing countries knowledge of contraceptive methods is reported to be low (Hindin and Fatusi, 2009), access is limited, and formal sex education is often lacking or inadequate (Obare *et.al.*, 2011). In countries where premarital sexual activity is not culturally acceptable access to contraceptive services can also be restricted (Gold *et.al.*, 2009).

Teenage pregnancy has been cited as one of the most significant factors contributing to girl child school dropout, consequently affecting their attainment of full education. Early sexual activity may result in unwanted pregnancy and childbirth, leading to school dropout. An estimated 5.5 million girls between the ages of 15-19 give birth annually in developing countries. Adolescent girls still have higher levels of unwanted pregnancies with more than one million unsafe abortions experienced within this age group (Blum and Nelson, 2004).

In Kenya, there are 2.8 million adolescent girls aged between 15 and 19 years of whom 24% (665,000) have an unmet need for contraceptive methods (Guttmacher, 2018).

Recognizing the negative impact of teenage pregnancy on Kenyan girls' education, the Ministry of Education put in place the return to School Policy Guidelines to ensure that girls who became pregnant while still in school got a second chance. The implementation of the guidelines has however been hindered by range of challenges including negative perceptions from the community, stigma and lack of awareness at various levels (Murigi, 2015). Adolescents' community-based programs have had to focus on HIV prevention rather than comprehensive sexual and reproductive health because of funding restrictions (Hindin and Fatusi, 2009).

School-based programs appear to be the logical choice for sexual and reproductive health education considering that today most girls obtain some secondary school education. This is partly because of the discomfort many parents feel about talking to their children about sexuality which further impedes the former's ability to provide guidance. Further, schools interactions could influence sexual behavior and also a potential pool for sexual partners. However, the provision of comprehensive sexual and reproductive health interventions in developing countries has been impeded by ideological, religious and cultural restrictions (Obare *et.al.*, 2011).

1.2 Statement of the problem

Worldwide there is an estimated 16 million births to adolescents; 3 million adolescent girls worldwide have an unsafe abortion annually (WHO, 2011). Globally, adolescents face a high unmet need for contraception further predisposing them to unplanned pregnancy and risk of unsafe abortion (Guttmacher, 2018).

In Kenya, there are 2.8 million adolescent girls aged between 15 and 19 years of whom 24% (665,000) have an unmet need for contraceptive methods; that is, they are married, or are unmarried and sexually active, and do not want a child for at least two years (Guttmacher, 2018). The unmet need for contraceptive method is higher among unmarried 15-19 year old girls as compared to their married counterparts within the same age group (KDHS, 2014). Further 86% of all the unintended pregnancies occur within this age group (Guttmacher, 2018).

According to KDHS 2014, by the age of 19 years 11% of adolescent girls have had their first sexual experience. This predisposes them to unplanned pregnancies and STI's. Though many adolescent girls in Kenya wish to avoid pregnancy they are not using contraceptives to make this possible; as a result, 47% of births to these adolescents are unplanned. Consequently, the age-specific fertility rate among adolescents aged 15-19 years in Kenya is 96 per 1000 women (KDHS, 2014). While this is the scenario, the contraceptive rate for any modern method of contraception among unmarried sexually active adolescent girls aged 15-19 years in Kenya is 49% (KDHS, 2014).

Adolescents' unplanned pregnancies are one of the leading causes of school dropout among Kenyan adolescent girls. Up to 13,000 Kenyan adolescent girls drop out of school every year because of unplanned pregnancy (Hussain, 2012). Adolescent pregnancy is associated with high Maternal Mortality Rates (MMR) from pregnancy and delivery complications adding to the MMR in Kenya currently estimated at 362/100,000

live births (KDHS, 2014). This is partially attributable to the unmet need of contraception among this sub-population.

Adolescent pregnancy remains a major contributor to maternal and child mortality, and to intergenerational cycles of ill-health and poverty. Pregnancy and childbirth complications are the leading cause of death among 15 to 19-year-old girls globally, with low and middle-income countries accounting for 99% of global maternal deaths of women ages 15 to 49 years (WHO, 2014).

Adolescent mothers (ages 10 to 19 years) face higher risks of eclampsia, puerperal endometritis, and systemic infections than women aged 20 to 24 years (UN, 2012). Additionally, some 3.9 million unsafe abortions among girls aged 15 to 19 years occur each year, contributing to maternal mortality and lasting health problems (UN, 2007). Furthermore, the emotional, psychological and social needs of pregnant adolescent girls can be greater than those of other women. (Hodgkinson *et.al.*, 2010).

Early childbearing can increase risks for newborns, as well as young mothers. In low- and middle-income countries, babies born to mothers under 20 years of age face higher risks of low birthweight, preterm delivery, and severe neonatal conditions (UN, 2007). Newborns born to adolescent mothers are also at greater risk of having low birth weight, with long-term potential effects. In some settings, rapid repeat pregnancy is a concern for young mothers, which presents further risks for both the mother and child (WHO, 2014).

Adolescent pregnancy can also have negative social and economic effects on girls, their families and communities. Unmarried pregnant adolescents may face stigma or rejection by parents and peers and threats of violence. Similarly, girls who become pregnant before age 18 are more likely to experience violence within marriage or a partnership. With regards to education, school-leaving can be a choice when a girl perceives pregnancy to be a better option in her circumstances than continuing education or can be a direct cause of pregnancy or early marriage. An estimated 33% of girls ages 15 to 24 years who drop out of school in some countries do so because of early pregnancy or marriage (Hodgkinson *et.al.*, 2010).

Based on their subsequent lower education attainment, may have fewer skills and opportunities for employment, often perpetuating cycles of poverty: child marriage reduces future earnings of girls by an estimated nine percent. Nationally, this can also have an economic cost, with countries losing out on the annual income that young women would have earned over their lifetimes, if they had not had early pregnancies.

1.3 Justification of study

Premarital sex is common in Kenya whereby the average age at first sex is about two years younger than the average age at first marriage. Nearly 40% of unmarried 15–19 - year-old women have had sex, and more than one in seven are sexually active. Pregnancy is one of the leading reasons for adolescent girls dropping out of secondary school in Kenya, with 13,000 teenage girls leaving school for this reason each year. Further, 86% of all unintended pregnancies occur in unmarried girls aged between 15-19

years. This can be reduced with the correct, consistent and informed use of contraceptives among this group.

Evidence suggests that many sexually active adolescents do not use any form of contraceptives or rely on less effective methods of contraception such as withdrawal and are therefore at a risk of experiencing teenage pregnancy.

Research on the use of contraceptives like condoms among teenagers have been done in developed countries as compared to developing countries. Most research have focused on married or adolescents in sexual unions.

In Kenya; there exist some gaps about contraceptive use among secondary school girls as sex is a “taboo” subject especially between parents and their children. Contraceptive use among teenagers is low and in the Kenyan context. In Kisumu East subcounty, the rate of use is low (27%). According to the Kisumu East District Development Plan, the 2008 contraceptive acceptance rate was 27.1%, much lower than the 49% National CPR (KDHS, 2014). 23% of Kisumu’s women of reproductive age are between 15 and 19 years old. This has raised maternal mortality, because adolescents are less likely to seek reproductive health services and are more likely than older women to experience childbirth complications.

The study offered an immense opportunity to interact with the study group through questionnaires and a focus group discussion (FGD) to identify factors associated with contraceptive use. From the study, decision makers can develop conceptual and operational framework models that can be applied to not only empower the study groups

to make informed choices on the method of contraceptive use, but also be knowledge borne on the realities of sexually transmitted infections. The results will be useful to parents, youth, and Ministry of Health officials in orchestrating and coming up with strategies on the appropriate mode of contraception. Successful implementation of the research will positively impact and contribute to reduction of unwanted pregnancies aimed towards achieving targets 3.7 and 5.6 of the United Nations Sustainable Development Goals (SDGs).

1.4 Research questions

1. What is the percentage use of contraceptive use among secondary school girls in Kisumu East Sub-County?
2. What are the sources of reproductive sexual health information among secondary school going girls in Kisumu East Sub-County?
3. What is the knowledge, attitude and practice on contraceptives among secondary school girls in Kisumu East Sub-County?
4. What are the factors associated with contraceptive use among secondary school going girls in Kisumu East Sub-County?

1.5 Broad objective

To determine the rate and factors associated with contraceptive use among secondary school girls Kisumu East Sub-County.

1.5.1 Specific objectives

1. To determine the percentage of contraceptive use among secondary school girls in Kisumu East Sub-County.

2. To determine the sources of information on contraceptives in Kisumu East Sub-County.
3. To explore the knowledge, attitude and practice on contraceptives among secondary school girls in Kisumu East Sub-County.
4. To determine the factors associated with contraceptive use among secondary school girls in Kisumu East Sub-County.

CHAPTER TWO

LITERATURE REVIEW

2.1 Dangers of teenage pregnancy

Pregnancy can be an overwhelming experience at any age but to a teenager it can create a developmental crisis as the young girl alternates between two stages simultaneously: adolescence and parenthood. Parenting teenagers have not had time to resolve their own stages of role identity and intimacy (Bearman and Bruckner, 2001) and their cognitive immaturity makes them more inclined to put their needs ahead of the developmental needs of their child. Statistics indicate that pregnant teenagers are more likely to terminate the pregnancy than proceed with the birth (Grimes *et.al.*, 2006). However, where childbirth is the outcome, long term negative implications of teenage pregnancy are considerable. Teenage pregnancies carry a higher risk of complicated births, low birth-weight, premature births and the need for neonatal intensive care (UNFPA, 2008). Additionally, infants born to young adolescent mothers are more prone to exhibit inferior cognitive development and lower educational attainment; they are more likely to demonstrate childhood behavioural problems and adolescent antisocial behaviour; and are at an increased risk of suffering from poor nutrition, abuse, neglect and abandonment (Guttmacher, 2018) Infant mortality within this group is 60% higher than for babies of older women (Grimes *et.al.*, 2006).

Early pregnancy and childbirth can have serious health consequences and constitute the leading cause of death for 15- to 19-year-old girls worldwide. And yet, approximately 16

million girls aged 15 to 19 years and 2.5 million girls under 16 years give birth each year in developing regions. About 3.9 million girls aged 15 to 19 years undergo unsafe abortions (WHO, 2018).

In addition to health outcomes, early pregnancy can affect girls' education opportunities. Pregnancy can result in their expulsion from school or to them being shamed and stigmatized while at school, affecting their ability to learn (UNESCO, 2017a). For instance, longitudinal data from Madagascar confirm that teenage pregnancy leads to early school leaving (Herrera Almanza and Sahn, 2018).

Apart from the health dangers as highlighted in the preceding paragraph, teenage pregnancy is also coupled with social dangers. The response to unmarried teenage pregnancy is often said to be a barometer of our social interactions. This response varies to the changing values of each community but generally carries some burden of stigma according to the strength of the "taboo" that is broken. The portrayal of pregnant teenage women in Kenya is frequently one of contrast between viewing teenagers who become pregnant as vulnerable, neglected and taken advantage of, to viewing them as devious, destructive and manipulative (Musick, 2003). Furthermore, the amount of stigma that they can directly influence the extent of emotional and psychological trauma, which can have a direct influence on their social networks (Grimes, 2006).

2.2 Contraceptive use among adolescents

An adolescent's decision about whether to use contraception is complex. Although trends have improved, with more adolescents reporting current use of contraception,

more use of contraception at first intercourse, and more frequently with continuing sexual intercourse, the consistent use of any contraception remains a challenge for most adolescents. Studies in the United States of America found that about 29% of female adolescents do not use contraception at the time of first intercourse (Guttmacher, 2013).

Among unmarried sexually active adolescents in Sub-Saharan Africa, contraceptive use ranges from a low of three percent in Rwanda to a high of 56% in Burkina Faso (Khan, 2008). Unmet need for contraception, or nonuse of methods despite the desire to limit births or delay them for at least two years, is high among unmarried adolescents in Sub-Saharan Africa (more than 40% in most countries). In comparison, 10–31% of unmarried adolescents in Latin America are considered to have unmet need (Khan, 2008).

A study by Obare *et.al.*, 2011 revealed that the unmet need for family planning has increased slightly albeit steadily from 27% in 1998 to 30% in 2009 among adolescents. The same study revealed that there exist low levels but steady increase in the use of modern methods over time among adolescent girls who had recent sex prior to the study (Obare *et.al.*, 2011).

2.3 Myths about contraceptive use

There is no evidence that refusal to provide contraception to adolescents will result in abstinence or postponement of sexual activity. In fact, if adolescents perceive obstacles to obtaining contraception most notably condoms, they are more likely to have negative outcomes to sexual activity (Guttmacher *et.al.*, 2013). Existing evidence also suggest

that the provision of information to adolescents about contraception does not result in increased rates of sexual activity, earlier age of first intercourse, or a greater number of partners. (Mohammedi *et.al.*,2006). Several other studies have concluded that the availability of contraception is not causally related to sexual experimentation (Santelli *et.al.*, 2006; Grant *et.al.*,2008 and Mohammedi *et.al.*,2006).

Knowledge about sex and pregnancy is somewhat limited in the 15-19 years age group. For example, a study in Uganda by Maly *et.al.*, revealed that 73% of adolescents between 15 and 17 considered themselves as too young to get pregnant despite experiencing menarche (Maly *et.al.*, 2017). This diminishes the subgroup's perceived need for contraceptives. The same study revealed that teenagers fear using contraceptives due to the lies peddled by their parents (Maly *et.al.*, 2017).

2.4 Policy and legislation on contraceptive Use

A series of multifaceted barriers currently prohibits good sexual and reproductive health for adolescents. At the political level, Adolescent Sexual Reproductive Health (ASRH) is low priority and there are often restrictive laws and policies in place. (Hindin and Kalamar,2017)

Article 33 (2) of the Reproductive Health Care Bill, 2014 states that “in the provision of reproductive health services to adolescents, parental consent is not mandatory”. (Kenya Gazette Supplement No.57 (Senate Bills No.17).

In October 2007, Kenya's Ministry of Health formally approved the country's first National Reproductive Health Policy (NRHP). The policy provides a framework for

equitable, efficient, and effective delivery of quality reproductive health services and emphasizes reaching the most vulnerable-the adolescent girl child categorized as such. Its aim is to guide planning, standardization, implementation, and monitoring and evaluation of reproductive health care provided by various stakeholders. It focuses on: safe motherhood, maternal and neonatal health, family planning, and adolescent/youth sexual and reproductive health and gender issues. (MoH, 2007).

The government adopted the Adolescent Reproductive Health and Development Policy (ARH&D) in 2003 to address adolescent reproductive health issues raised by the National Population Policy for Sustainable Development and the Kenya Health Policy Framework of 1994. Broadly, the policy addresses: adolescent sexual health and reproductive rights; harmful practices, including early marriage, female genital cutting, and gender-based violence; drug and substance abuse; socioeconomic factors; and the special needs of adolescents and young people with disabilities. Its targets include: to increase the proportion of facilities offering youth-friendly services to 85%, and to reduce the proportion of women aged below 20 with a first birth from 45% in 1998 to 22% in 2015. The ARH&D Plan of Action 2005-2015 was developed to guide implementation of the policy (MoH, 2015).

However, even governments that are highly committed to delivering comprehensive sexuality education must deal with two types of challenges. First, they need to overcome negative public attitudes. Many people still hold erroneous beliefs about the effects of teaching young people about contraceptives. These misconceptions, unsupported by

evidence, are often fueled and propagated by organized opposition and lobbying. As a result, provision of comprehensive sexuality education has become not a matter for evidence-based action, but a highly politicized contest (UNESCO, 2019).

2.5 Health risks of contraceptives

The use of contraceptives in Kenya has created substantial health impact. Not all forms of contraceptives have health risk factors and not all the people are equally at risk. Effects can be either chronic or acute (Hannaforde *et.al.*, 2007).

Most discussions around the health risks of contraceptives have centered on the two most prevalent cancers in women: breast cancer and cervical cancer. For instance, in breast cancer, several studies have pointed that users of oral contraceptives are at a decreased risk than non-users (Cibula *et.al.*,2010, and WHO, 2011). However, there is an increased risk of cervical cancer in users of oral contraceptives when compared to the non-users. The relative risk (RR) of cervical cancer was estimated by conditional logistic regression, stratifying by study, age, and number of sexual partners, age at first intercourse, parity, smoking and screening. Among current users of OCs, the relative risk of invasive cervical cancer increased with increasing duration of use (Hannaforde *et.al.*, 2007).

2.6 Factors influencing contraceptive use among adolescents

2.6.1 Social and cultural practices

Globally, some social and cultural practices influence the use of contraceptives. Various societal, and cultural factors create an inhibitive environment for discussion of ASRH as

many societies hold a deeply embedded sense of disapproval of adolescent sexual activity; this is often demonstrated through the stigmatization of sexual health concerns, in particular STIs/HIV. Judgmental attitudes about sexual activity abound, especially for those out of marriage and sexually active girls and women. (Bearinger *et.al.*, 2007).

Cultural taboos prevent open dialogue about sex at home or in school. Few adolescents receive comprehensive sex education, and often teachers do not have enough training or information to provide it (Keogh, 2017).

2.6.2 Influence of sex education

Comprehensive sexuality education is an essential part of a good quality education that helps prepare young people for a fulfilling life in a changing world. It improves sexual and reproductive health outcomes, promotes safe and gender equitable learning environments, and improves education access and achievement (UNESCO, 2019).

Sex education on youth plays a pivotal role in developing the youth on the method of contraceptives to use at each stage in life. Further, the youth are given basics on the effect of each contraceptive they use, and this helps them to decide the best method with minimal effect. (Khan, 2008)

Contrary to the foregoing, the quality of curricula clearly affects the quality of comprehensive sexuality education. Often, curricula and teaching resources focus mainly on reproductive physiology, at the expense of rights and gender, or may not

adequately cover topics such as sexual orientation, contraception and how to use condoms (UNESCO, 2019a).

2.6.3 Access to information

Lack of information about the use of contraceptives by the school girls has led to increased spread of STDs, unwanted pregnancy and abortions procured by people with questionable qualifications (Williamson *et. al.*, 2009).

There is no evidence that refusal to provide contraception to an adolescent result in abstinence or postponement of sexual activity. In fact, if adolescents perceive obstacles to obtaining contraception and condoms, they are more likely to have negative outcomes to sexual activity. (Gutmacher, 2007). In addition, no evidence exists that provision of information to adolescents about contraception results in increased rates of sexual activity, earlier age of first intercourse, or a greater number of partners. Two school-based controlled studies that demonstrated a delay of onset of sexual intercourse in the intervention group used a comprehensive approach that included a discussion of contraception (Kirby *et. al.*,2001). Availability of contraception is not causally related to sexual experimentation (Howard *et.al.*,2003).

2.6.4 Religiosity

Religiosity is a double edged sword-exhibiting both advantages and disadvantages depending on the desired outcome. It may influence adolescents' decisions about sex and contraception use; however, the direction of its effect is not clear. Some studies have

shown that religious affiliation, behavior, or attitudes may be a protective factor associated with delay of sex (Rostosky *et.al.*, 2003). Religiosity also has been associated with decreased frequency of sexual activity and a lower number of sexual partners (Gold *et.al.*, 2009). However, other researchers have found little association between religiosity and sexual behavior (Obare *et.al.*, 2011) while some have reported a positive correlation between importance of religion and sexual activity (Sinha *et.al.*, 2007). Additionally, a number of studies have shown religiosity to be associated with less frequent use of condoms and/or hormonal contraception (Zalesky *et.al.*, 2004).

The official position regarding the use of artificial means of family planning varies from religion to religion. With its steadfast opposition to the use of any form of contraception or sterilization, the Roman Catholic Church puts its 1.2 billion followers worldwide in the difficult dilemma of either adhering to the teaching of their church and thereby risk an unwanted pregnancy or ignoring that teaching and use an artificial method of family planning, but thereby become marginalized by their church. The Church's opposition to the use of any artificial method of family planning and has reiterated on several occasions that the Church will only allow the so-called natural methods (LeMaire,2016).

2.7 Knowledge and attitude towards contraceptives

The use of contraceptives is influenced by numerous factors, which include knowledge of contraceptive methods and knowledge of their use. Knowledge of at least a contraceptive method is almost universal among 15-19-year-old girls (KDHS, 2014). The most known method is the male condom at 96% (KDHS, 2014) while the least

known methods are lactational amenorrhoea and the female condom both at 12% (KDHS, 2014 and Nsubuga *et.al.*,2016).

Just as in most African cultures, sex is considered as a preserve of married adults because of its cultural, religious and social reasons in Kenya (Hussain, 2012). Issues sex and contraception may not be therefore discussed at home (Boamah, 2013). The sources of information on contraceptives vary from mass media, internet, parents, school books among others (Okereke, 2010). A study by Boamah in Ghana among girls attending secondary schools posits that health centers should be the most important source of information on contraceptives. However, this is seldom the case since adolescents to attend such centres to seek information on contraceptives (Boamah, 2013).

Kirkwood *et.al.*, postulates that the reason for the male condom being the most commonly known method of contraception is because of its dual capacity of both being a method of contraception and a method of HIV and STIs prevention (Kirkwood *et.al.*,2010). Further, advertisements promote the male condom use in all media platforms, hence the broadened level of awareness (KDHS, 2014).

2.8 Negative consequences of contraceptive use among girls aged between 15- 19 years

The negative consequences of contraceptives among girls attending secondary schools include: presenteeism absenteeism, cognitive dissonance, stress and conflicts.

The side effects of hormone-based contraceptives include: irregular menstrual patterns, breast tenderness, nausea and vomiting and skin changes (Davtyan, 2016). However, nausea, breast tenderness, and irregular menstrual are self-limiting and tend to improve or disappear (Davtyan, 2016).

The intrauterine device is an effective long-term contraceptive, but it is not suitable for school going adolescents because they are at high risk of contracting sexually transmitted diseases (Mokdad *et.al.*,2016).

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study design

This was a cross sectional study that adopted both qualitative and quantitative approaches to data collection, analysis, and presentation. Secondary schools were randomly selected for the study from a sample frame consisting of all mixed and girls' secondary schools from the Kisumu East Sub County. Further two Focus Group Discussions (FGDs) were conducted after the administration of questionnaires. Both girls- only and mixed schools were sampled. The study age group was 15-19 years, in line with KDHS enumeration clusters; which is also the group accounting for 86% of unwanted pregnancies.

3.2 Study site

Kisumu is Kenya's third largest city and is located about 400 kilometers northwest of the capital city, Nairobi (see maps attached). Kisumu East Sub County (formerly Kisumu East District before the promulgation of the new Constitution) has a population of about 190,000 (Kisumu County Integrated Development Plan, 2018).

3.3 Study population

The study population consisted of secondary school girls aged between 15-19 years in mixed and girls only boarding and day schools. There were 2 girls only secondary schools within the study site and 36 mixed secondary schools. Girls comprised about 9,000 of the secondary school students.

3.3.1 Inclusion criteria

Girls aged between 15-19 years.

Parents and Head teachers consented to the study of the schools in the study

Students in the selected schools who consented/assented to the study.

3.4 Sample size

The sample size was determined as follows (Cochran, 1977).

$$n = \frac{Z^2 pqD}{d^2}$$

Where:

n: Desired sample size of the population valid only when the population is greater than 10,000

Z: The standard deviate, usually 1.96 that corresponds to 95% confidence level

d: Degree of accuracy (0.05)

D: Design effect, usually 1 where there is no replication or comparison.

27%: Assumed contraceptive rate among girls aged between 15 and 19 years in Kisumu East Sub County

$$\text{Thus } n = \frac{1.96^2 \times 0.27 \times 0.73 \times 1}{0.05^2} = 302.87$$

The sample size was increased to 320 from the calculated 303 to account for five percent non-response.

3.5 Sampling procedure

The study adopted a stratified multistage sampling regime alternating between purposive sampling and random sampling to ensure that representation in terms of school type, age and form are captured as expatiated below. The following logical sequence was applied to distribute the sample: -

- i) Schools were classified as either mixed schools or girls-only schools. From the study site there were 36 mixed schools and 2 girls-only boarding schools.
- ii) Since there were only 2 girls-only boarding schools, both were purposively selected and allocated 100 slots for respondents (50 respondents per school).
- iii) From the 36 mixed schools, 11 were randomly selected and allocated 220 slots for respondents (20 respondents from each school)
- iv) The respondents from (ii) above were distributed in almost equal numbers as follows: 13 form fours, 13 form threes, 12 form twos and 12 form ones.
- v) The respondents from (iii) above were distributed in the following equal numbers: 5 form fours, 5 form threes, 5 form twos and 5 form ones.
- vi) In schools where there was more than a single stream per grade level, the PI randomly selected a single stream per grade level to recruit in the study.
- vii) In the selected classes, the PI recruited respondents by the help of random numbers generated from the class registers provided by the respective class teachers.

The above steps were followed to obtain a comparative number of respondents based on school type and the grade of their study.

After the recruitment into the study of the potential respondents were taken to a separate classroom where they were consented/assented. The respondents were then furnished with the consent forms in duplicates, so that each remained with her copy. Most of the data collection was done on weekends and during games time, so that the study time of the respondents were not interfered with.

The questionnaires were administered in English; the official language of instruction in Kenyan schools. A typical questionnaire took approximately 30 minutes to be completed. Completed questionnaires were manually checked for errors prior to data entry. The FGD arm of the study was conducted two weeks after the administration of the questionnaires. Each of the Focus Group Discussions consisted of 10 girls. Since there were two FGDs, the total number of FGD participants was twenty. The twenty students were randomly selected from ten schools that participated in the research, meaning that 2 students were selected per school. However, each of the two students selected from the ten schools participated in separate FGDs, ensuring that no two students from the same school participated in the same FGD. Further, the PI ensured that the students who participated in the filling of the questionnaires did not participate in the FGD to ensure that a wide variety of factors influencing contraceptive use were raised. No student opted out of the study during the consenting thus there was no need for replacement.

3.6 Data collection tools

Self-administered semi-structured questionnaire was used. The tool was pre-tested in four mixed and one girls' only secondary schools in Nairobi's Kasarani Sub County. A total of 10 students in each of the 5 randomly selected schools were used for this piloting. This is about 15% of the total number of the study respondents. This was done to improve the validity and the reliability of the questionnaire.

An improved version of the self-administered questionnaire in the preceding paragraph was administered to the participants. Furthermore, two focus group discussions were done to gauge the qualitative aspects of the study. This was facilitated by a trained female peer educator with a good background in moderating FGDs. This is because young girls are more likely to open up to a female. The venue for the FGDs was selected among the participating schools in the study. Tape recorders were used to record the proceedings. To ensure anonymity, the participants were instructed to introduce themselves using their initials.

3.7 Validity and reliability

The sample size was calculated according to present use of contraceptives among women in between 15 and 19 years old in Kisumu East Sub County

A confidence of 95%, and an error of 5 %.

3.8 Evaluation of knowledge, awareness and practice

The overall awareness score on contraceptives among the girls was assessed using the four (4) statements whose responses and scores were structured as follows:

- A woman can get pregnant on the very first time that she has sexual intercourse (Strongly Disagree=1; Disagree=2; Undecided=3; Agree=4; Strongly Agree=5).
- A woman stops growing after she has had sexual intercourse for the first time (Strongly Disagree=5; Disagree=4; Undecided=3; Agree=1; Strongly Agree=1).
- A woman is most likely to get pregnant if she has sexual intercourse during her periods (Strongly Disagree=5; Disagree=4; Undecided=3; Agree=1; Strongly Agree=1).
- Do you know any method of contraception (confirmed by mentioning at least one)? (Yes=1, No=0)
- Number of contraceptive methods that a respondent able to mention (One method=1; two methods=2; three methods=3; four methods=4; five methods=5).

The overall score was generated by aggregating the scores. The maximum attainable total score was 21. A percentage score was generated and classified as average and below ($\leq 50\%$), Moderate (51%-75%) and High ($>75\%$).

3.9 Data management and analysis

Data captured from the questionnaire was coded and double entered into computer MS-Excel. Data verification and validation was performed by rechecking all data entries with original data forms to achieve a clean dataset that was then exported into a Statistical Package format (SPSS version 20.0). Regular file back-up was done to avoid any loss or tampering. All questionnaires were stored in lockable drawer for confidentiality.

Data was analysed using Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics was computed. Pearson's Chi-square test was used to establish the association between categorical variables. Odds ratio (OR) with the 95% Confidence intervals (CI) were also computed. Variables established to be significantly associated with the dependent variable at bivariate analysis were included in step wise multivariate analysis. This enabled the selection of a set of predictor variables associated with contraceptive use. Results were presented in text, bar chart and tables. Qualitative data was analysed using the thematic analysis method. The results were presented by use of frequency tables, pie charts, graphs inferential statistics and narratives. Recording of qualitative data during interviews was done using tape recorders. Results from FGDs were transcribed and translated into English where necessary. The data was coded using a set of pre-set codes based on the discussion guide as well as emergent themes. The thematic coding framework was then applied to assess all interview transcripts. The analysis looked for patterns and associations on the emerging themes, focusing on the

drivers and barriers to contraceptive uptake. Quotations from the study participants have been used to characterize emerging issues and themes.

3.10 Limitation

The study excluded girls younger than 15 years yet were in secondary schools. Due to the biological difference and sexual maturity difference, they could have been an ideal study group for comparison.

3.11 Assumption

The study assumed that all the girls currently attending secondary schools were not living with sexual partners or married.

3.12 Ethical considerations

Approval to carry out this research was obtained from KEMRI's ERC. Consent was obtained from the parents and head teachers to carry out the research. The parents/guardians of the students in boarding schools were contacted through letters written through their respective school principals. The letters (with consent forms attached therein) were given to each student to take to their parents during schools' holidays (April 2016 Holidays to be specific) such that the study participants were recruited from those whose parents/guardians consented, and themselves assented. The students in day schools were given the letters as soon as the study was approved by ERC. Furthermore, consent was sought from the participants themselves and only those willing to participate were given questionnaire or incorporated in the FGD. The study did not exhibit any potential physical harm or injury; neither does it reveal the identity of

the participants whatsoever. Confidentiality was maintained by ensuring that only the investigators had access to the data collection tools after completion. The entered data in the computer was stored in password-protected computer-accessible only by the principal investigator. The recorded material from the FGD was destroyed 3 months after final the analysis of the material. This involved deleting the recorded proceedings.

CHAPTER FOUR

RESULTS

4.1 Socio-demographic characteristics of respondents

A total of 320 secondary school girls with a mean age of 16.4 (± 1.2) years participated in the study. About one third (32.8%) of the girls were aged 15 years and almost a quarter 25.3% were 16 years and 23.4% were aged 17 years. Girls aged between 18 and 19 years were 11.3% and 7.2% respectively. There was equal distribution among the girls who were in form one and form two (24.7%), each as well as form three and form four (25.3%), each. The highest percentage (41.6%) of the girls were Catholic followers while only 5.6% belong to other denominations.

Table 4. 1: Socio-demographic characteristics of study respondents

Variable	Category	Frequency (n=320)	Percent (%)
Age	15-16	105	32.8
	16-17	81	25.3
	17-18	75	23.4
	18-19	59	18.5
Form	One	79	24.7
	Two	79	24.7
	Three	81	25.3
	Four	81	25.3
Religion	Catholic	133	41.6
	Protestant	115	35.9
	Muslim	54	16.9
	Others	18	5.6

4.1.1 Type of school

Figure 4.1 indicates that out of 320 participants, majority (68.8%) were attending in mixed schools whereas the remaining 31.2% were from girls-only boarding school.

4.2 Sources of information about contraceptives and sex

As depicted in the questionnaire (see Appendix 1 Question 2.1 and 2.2) the respondents were asked to mention the most important source of information and the second most important source of information about contraceptives and sex respectively. On contraceptives, the information sought included the type, source, reliability and health effects of respective contraceptives.

Table 4.2 shows the most important sources of information about contraceptives and sex among the respondents as well as their preferences on the information. The girls indicated that mothers were the most important source of information on contraceptives (35.9%) followed by books/magazine/films (21.6%) and teachers (20.3%). Logically, the most important source of information on contraceptives should also be the preferred source of information on the same. However, when the girls were asked the preferred source of information, most of them indicated that books/magazine/films (31.6%) and mothers (26.9%) were the preferred sources.

Regarding the most important source of sex education, teachers were the most important source of information (35.0%) with mothers the next most important source (26.3%). Friends (six percent) and other family members including fathers, siblings or relatives (six percent) appeared to have played minimal roles as sources of information about sex.

Moreover, the main preferred sources of information about sex indicated by the girls were mothers (24.7%), doctors (26.3%) and books/magazine/films (23.4%).

Table 4. 2: Most Important sources of information on contraceptives and sex

Variable	Frequency (n=320)	Percent (%)
a(i) Most important source of information about contraceptives		
Mother	115	35.9
Books/Magazine/Films	69	21.6
Teacher	65	20.3
Doctors	29	9.1
Friends	21	6.6
Other Family Members (Father, Siblings and Relatives)	21	6.6
ii Preferred source of information about contraceptives		
Books/Magazine/Films	101	31.6
Mother	86	26.9
Doctors	72	22.5
Teacher	37	11.6
Other Family Members (Father, Siblings and Relatives)	18	5.6
Friends	6	1.9
b(i) Most important source of information about sex		
Teacher	112	35
Mother	84	26.3
Books/Magazine/Films	59	18.4
Doctors	27	8.4
Other Family Members (Father, Siblings and Relatives)	20	6.3
Friends	18	5.6
ii) Preferred source of information about sex		
Doctors	84	26.3
Mother	79	24.7
Books/Magazine/Films	75	23.4
Teacher	34	10.6
Other Family Members (Father, Siblings and Relatives)	29	9.1
Friends	19	5.9

4.2.1 Classes on sex education

Most (89.1%) of the girls in this study indicated that they would need to have more classes on sexual information. (Figure 4.2).

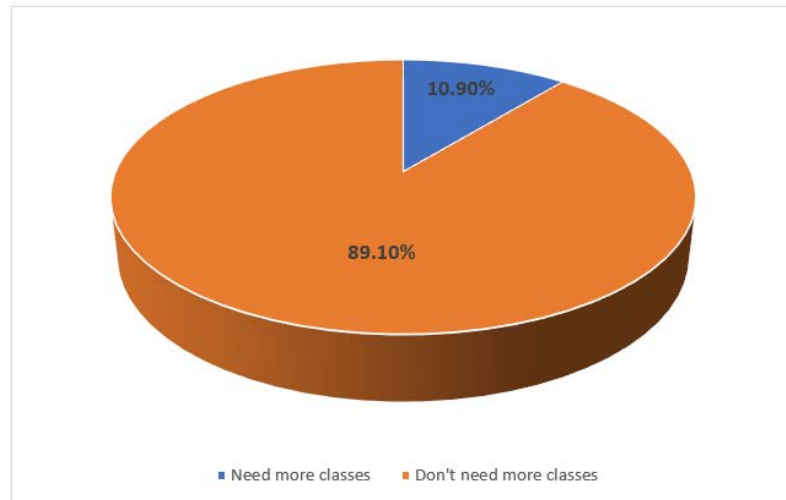


Figure 4. 1: Class requirement on sex education

4.3 Awareness on sex and contraceptives

The awareness of the girls on sex and contraceptives is summarized in Table 4.3. Half of the respondents (50.0%) agreed that a woman can get pregnant on the very first time that she has sexual intercourse. However, considerable percentage strongly disagreed (13.1%) and disagreed (14.1%) with the statement. More than half (52.5%) strongly agreed that a woman stops growing after first sexual intercourse. When the girls were requested to respond if a woman is most likely to get pregnant if she has sexual intercourse during her periods, 27.5% strongly agreed and 16.6% agreed. However,

relatively similar percentages also strongly disagreed (22.2%) and disagreed (17.8%) with the statement.

All the girls (100%) knew at least a single method of contraception. 29.7% could mention two methods and 23.1% 3 methods. However, there were only five percent who able to mention 5 contraceptive methods.

Table 4. 3: Awareness on sex and contraceptives among girls attending secondary schools in Kisumu East Sub County

Variable	Frequency (n=320)	Percent (%)
A woman can get pregnant on the very first time that she has sexual intercourse.		
Strongly Disagree	42	13.1
Disagree	45	14.1
Undecided	20	6.3
Agree	53	16.6
Strongly Agree	160	50
A woman stops growing after she has had sexual intercourse for the first time.		
Strongly Disagree	168	52.5
Disagree	101	31.6
Undecided	27	8.4
Agree	12	3.8
Strongly Agree	12	3.8
A woman is most likely to get pregnant if she has sexual intercourse during her periods.		
Strongly Disagree	88	27.5
Disagree	53	16.6
Undecided	51	15.9
Agree	57	17.8
Strongly Agree	71	22.2
Do you know any method of contraception? (confirmed by mentioning at least one)		
Yes	320	100
No	0	0
Number of methods mentioned		
Only one	97	30.3
Two	74	23.1
Three	95	29.7
Four	38	11.9
Five	16	5

4.3.1 Awareness on contraceptives among respondents

Five variables presented in Table 4.3 were used to determine the proxy of awareness level among respondents. The proxy score index assessment is presented in **Appendix IV**. About half (51.9%) of the respondents had moderate awareness and 39.7% scored high awareness while only (8.4%) were with low awareness.

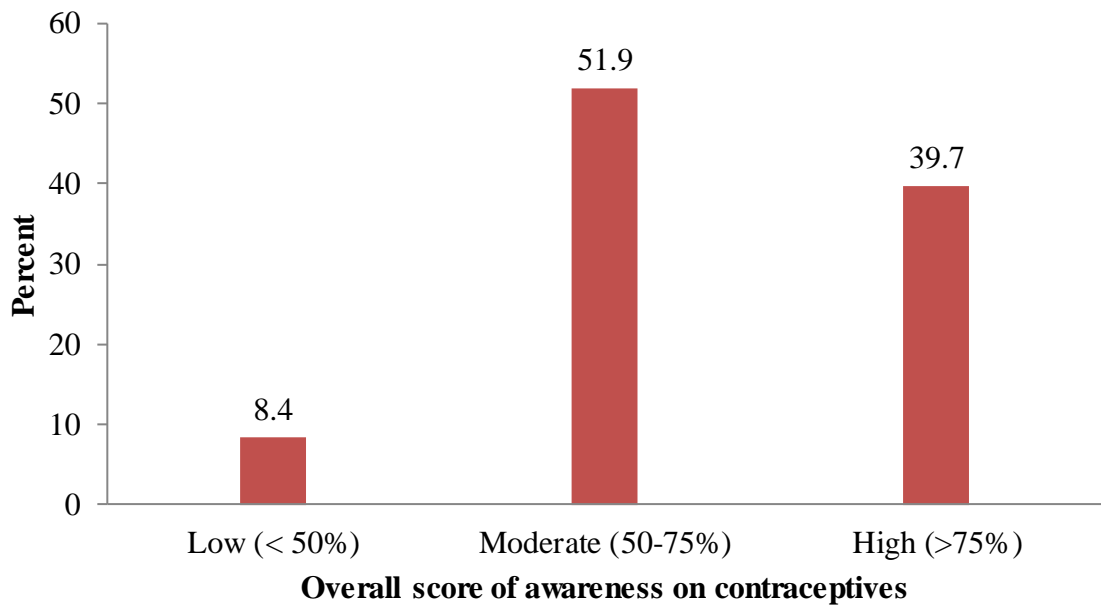


Figure 4. 2: Awareness score on contraceptives among respondents

4.4 Common types, sources and suitability of contraception methods

The most common types of contraceptive methods as well as their sources and suitability are presented in Table 4.4a, 4.4b and 4.4c. The most common type of contraception mentioned or known was the condom (81.9%) followed by oral contraceptive (64.7%). The emergency contraceptive was the least (11.3%) type of contraceptive mentioned by the respondents. Majority of the respondents (69.7%) indicated that hospitals were the main source of contraceptives, followed by shops/kiosks/supermarkets (51.3%), chemists/ pharmacies (39.4%) and then family planning clinics (20.0%). About two third (64.1%) of the respondents thought that contraceptives were suitable for the youth, while the remaining 35.9% indicated otherwise. Among those who indicated contraceptives are suitable for youths, majority (92.0%) indicated that condoms were the most suitable contraceptive option for the youth.

Table 4. 4a: Common types of contraception methods

Variable	Frequency (n=320)	Percent (%)
*Contraceptives mentioned		
Condom	262	81.9
Oral contraceptive	207	64.7
Emergency contraceptives	36	11.3
Implants	79	24.7
Injection	98	30.6

*Multiple responses

Table 4. 5b: Common sources of contraception methods

Variable	Frequency (n=320)	Percent (%)
*Source of contraceptive methods		
Hospitals/Health Centres	223	69.7
Family Planning Clinics	64	20.0
Pharmacy/Chemists	126	39.4
Shops/kiosks/Supermarkets	164	51.3
Hospitals/Health Centers	223	69.7

*Multiple responses

Table 4. 6c: Suitable contraception methods for girls aged between 15-19

Variable	Frequency (n=320)	Percent (%)
*Contraceptives mentioned		
Condom	262	81.9
Oral contraceptive	97	30.3
Emergency contraceptives	29	9.1
Implants	7	2.2
Injection	9	2.8

*Multiple responses

4.5 Proportion of respondents who perceived contraceptive use as a health risk

The distribution of perceived health related risk for using contraceptive is shown in Table 4.5. Majority of the girls (62.8%) indicated that there are health risks posed by contraceptive use while 37.2% of the girls were with a contrary view of no perceived health risk. The main health related risk of contraceptive use mentioned by the girls was barrenness/ infertility (42.8%).

Table 4. 7: Perceived health risks of contraceptive use

Variable	Frequency (n=320)	Percent (%)
Whether there is perceived health risks of contraceptive use		
Yes	201	62.8
No	119	37.2
*Types of the perceived health risks of contraceptive use		
Barrenness/infertility	137	42.8
Menorrhagia/Amenorrhea/Hypomenorrhoea	47	14.7
Cancer	36	11.3
Sexually transmitted diseases	18	5.6
Disabled/deformed children	33	10.3
Death/fatality	43	13.4

*Multiple responses

4.6 History of sexual contact

More than half (54.7%) had ever had sex as depicted in Figure 4.4 below.

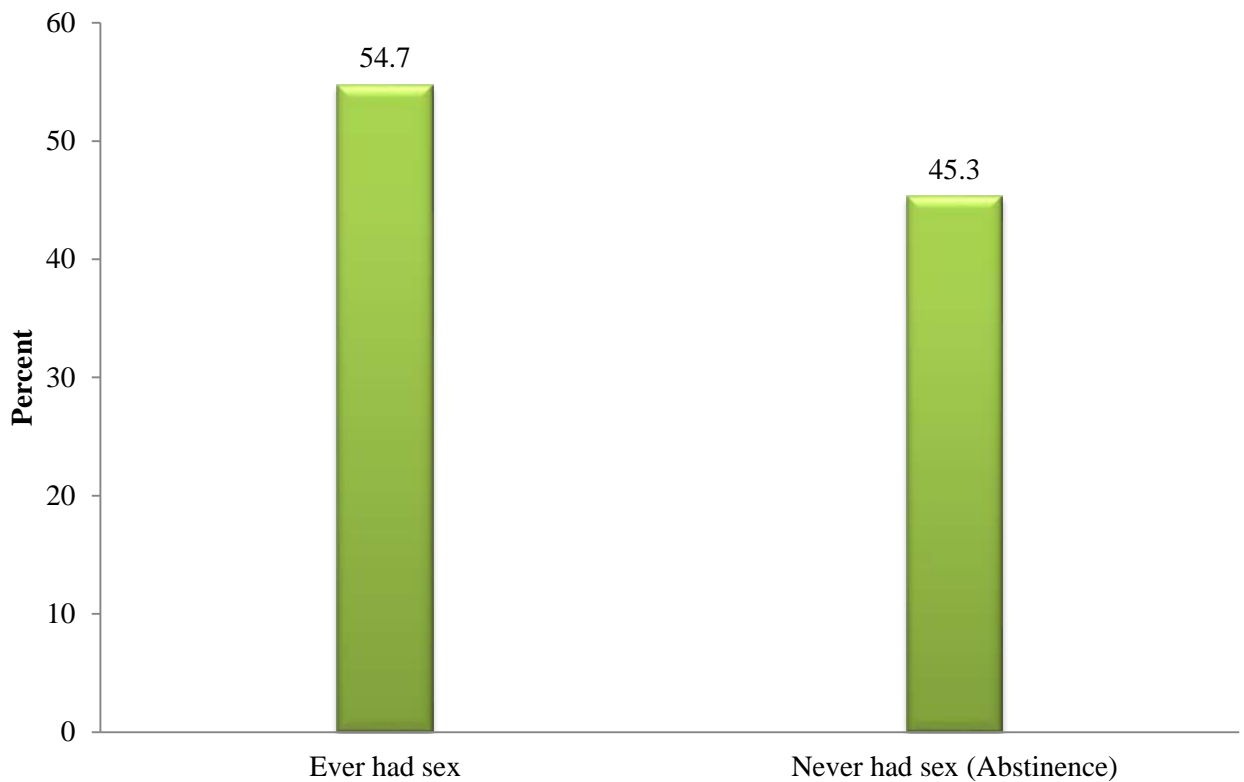


Figure 4. 3: Sexual debut among study respondents

4.7 Current contraceptive use to delay or avoid getting pregnant

As outlined in the preceding section, about 55% of the respondents had ever had sex. The question was stratified further to ascertain how many were sexually active at the time of the study. This is because inasmuch as some had experienced sexual debut, for various reasons they had resorted to abstinence and were therefore not sexually active.

From the 55% that had experienced sexual debut, 35% of them were hitherto sexually active. (This accounts for 19% of the total respondents). The current contraceptive use is depicted in Table 4.6a. Among the currently sexually active respondents, 60% were not using any method of contraception while 40% reported using a method. Condom was the most commonly used method followed by OCs then “Others”. The “others” included methods such as emergency contraception and withdrawal that was mentioned by 1 respondent each.

Table 4. 8a: Contraceptive use by sexually active girls

Variable	Frequency (n=62)	Percent (%)
Any contraceptive use to avoid getting pregnant		
Yes	25	40
No	37	60
Method mentioned by the sexually active, current users of contraceptives (n=36)		
Condoms	19	76
Contraceptive pills	4	16
Others	2	8

As illustrated in Table 4.6b, the 55% who had experienced sexual debut whether currently sexually active or otherwise were asked if they used any form of contraceptive at the point of the sexual debut. Of this, 29% said yes, while the remaining 71% said no. Again, the male condom was reported as the most common method of contraceptive used.

77.5% of the total respondents mentioned abstinence as a method of contraception.

Table 4. 9b: Contraceptive use during sexual debut

Variable	Frequency (n=173)	Percent (%)
Any contraceptive use to avoid getting pregnant on sexual debut		
Yes	50	28.9
No	123	71.1
Method used at sexual debut		
Condoms	28	56
Contraceptive pills	9	18
Others	13	26

4.7.1 Reasons for not using contraceptives currently to avoid pregnancy

Figure 4.5 summarizes reasons for not using contraceptives among those who were not currently involved in any contraceptive use to avoid pregnancy. Religious influence emerged as the main reason (45.1%) and this was followed by parental influence (20.3%), partner's influence (15.8%) and peer influence (14.3%). How religion, parents and partners influence a girl's decision to use contraceptives was interrogated during the FGDs and is reported in section 4.13.

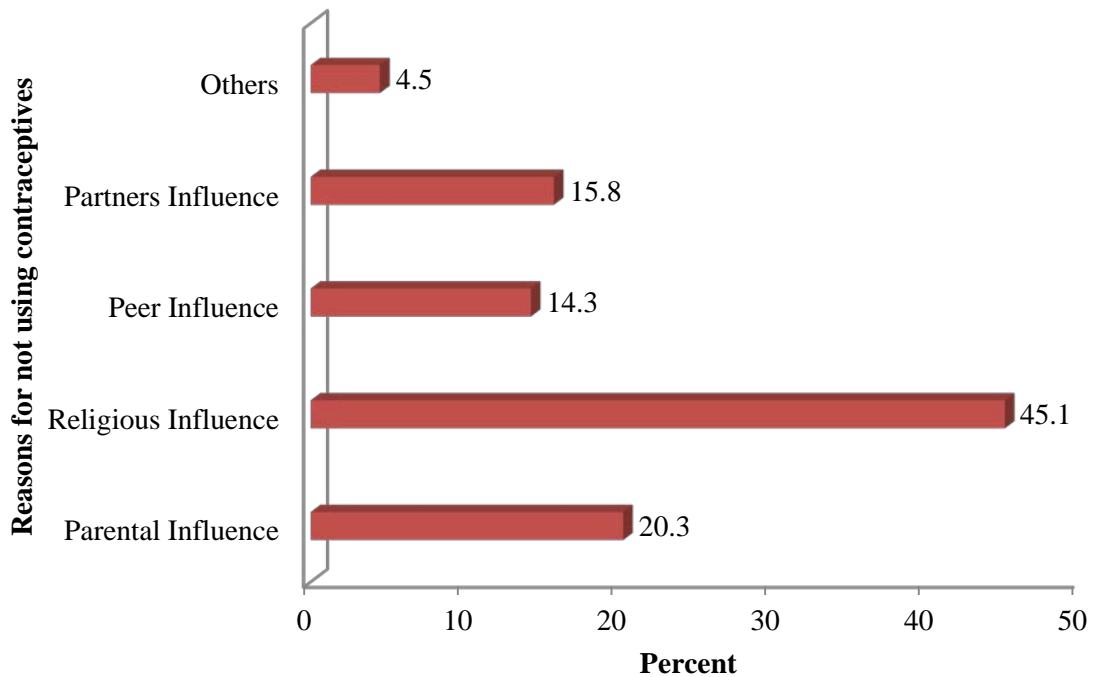


Figure 4. 4: Most important reason for non-use of Contraceptives

Partners influence include factors such as the perception of unfaithfulness when condom use was demanded by the girl. On the other hand, parental influence included aspects

such as parents expecting their daughters to abstain, gravitated towards disapproval of contraceptive use, sometimes harsh parents. Due to pressure from peers particularly from stories of negative health outcomes of contraceptive use, some of the respondents were not willing to use contraceptives.

Religion played a vital role in the girls' decision to abstain from sex and not to use contraceptives.

4.8 Willingness to use contraceptive methods

The sexually active girls (n=62) who were not using contraceptives (n=25) were asked whether they were willing to use a method of contraceptives. Most of them (84%) were willing to use a method of contraceptive. The male condom was the most mentioned method (85.7%). The 16% who were not willing to use a method of contraception cited the following reasons as influencing their decision: - Partners influence (75%), Peer influence (50%), Parental influence (25%) and Religious influence (25%)

Table 4. 10: Willingness to use contraceptive methods

Variable	Frequency	Percent
Willingness to use contraceptives among sexually active respondents, currently not using contraceptives (n=25)		
Yes	21	84.0
No	4	16.0
*Contraceptive methods willing to use (n=21)		
Condoms	18	85.7
Oral contraceptives	7	33.3
Emergency contraceptives	4	19.0
Injectable	1	4.8
Others	0	0.0
Reasons for not willing to using any method of contraception (n=4)		
Parental Influence	1	25.0
Religions Influence	1	25.0
Peer Influence	2	50.0
Partners Influence	3	75.0
Expensive	0	0.0
Unavailability	0	0.0
Cultural Influence	0	0.0
*Multiple response		

4.9 Association between socio-demographic characteristics and current contraceptive use to avoid pregnancy

Table 4.8 shows the bivariate analysis of relationship between socio-demographic characteristics and current contraceptive use to avoid pregnancy. The proportion of girls with current contraceptive use was more among those who were between 15-16 years (23.8%) and 17-18 years (23.8%) compared to those in the other age groups. Using the 15-16 age group for reference, values of statistical significance was observed in the 18-19 age group (OR = 2.97; 95% CI = 1.96 – 7.32; P = 0.011) and the 19<20 age group (OR = 1.89; 95% CI = 1.63 – 4.71; P = 0.043). The current use of contraceptives to curb pregnancy was significantly high among girls studying in Mixed day schools as compared to those in Girls only boarding schools (OR=1.23; 95% CI=0.54 - 5.71; P=0.028). Form Threes were likely to use contraceptives as compared to Form Ones (OR = 3.11; 95% CI = 1.64 – 5.77; P = 0.001).

Table 4. 11: Association between socio-demographic and current contraceptive use

Variables	Current contraceptive use		OR	(95%CI)		* P value
	Yes, n=42	No, n=268		Lower	Upper	
Age						
15-16	10	92	Ref			
16-17	8	70	1.04	0.43	4.66	0.086
17-18	10	61	1.27	0.56	5.81	0.069
18-19	8	28	2.97	1.96	7.32	0.011
19-20	6	17	1.89	1.63	4.71	0.043
Type of school						
Girls Only	7	86	Ref			
Boarding						
Mixed Day	35	182	1.23	0.54	5.71	0.028
Form						
One	7	69	Ref			
Two	9	70	1.44	0.81	4.06	0.742
Three	18	56	3.11	1.64	5.77	0.001
Four	8	73	1.08	0.35	2.42	0.658
Religion						
Christian-Catholic	18	111	Ref			
Christian-Protestant	16	94	1.13	0.68	4.33	0.644
Muslim	6	47	1.16	0.64	2.11	0.628
Others	2	16	0.64	0.24	1.67	0.360

Abbreviations: OR= Odds Ratio, CI= Confidence Interval, Ref= Reference*Significant P Value Bolded

4.10 Relationship between information about contraceptive/sex and current contraceptive use to avoid pregnancy

Analysis of the relationship between main source/preferred information about contraceptive/sex and current contraceptive use among the girls is summarized in Table 4.9. However, there was no statistically significant association between the variables.

Table 4. 12: Relationship between information about contraceptive / sex and current contraceptive use

Variables	Current contraceptive use		OR	95%CI		P value
	Yes,	No,		Lower	Upper	
N=320						
Source of information about contraceptives						
Teacher	167	153	0.95	0.48	1.87	0.879
Mother	200	120	1.45	0.79	2.65	0.231
Other Family Members (Father, Siblings and Relatives)	137	183	0.65	0.24	1.74	0.389
Friends	152	168	0.79	0.30	2.09	0.630
Doctors	177	143	1.06	0.45	2.54	0.888
Books/Magazine/Films	172	148	Ref			
Preferred information about contraceptives						
Teacher	173	147	0.87	0.41	1.86	0.723
Mother	194	126	1.13	0.63	2.04	0.674
Other Family Members (Father, Siblings and Relatives))	124	196	0.47	0.17	1.32	0.151
Friends	160	160	0.74	0.14	3.85	0.722
Doctors	169	151	0.83	0.45	1.52	0.544
Books/Magazine/Films	184	136	Ref			
Source of information about sex						
Teacher	183	137	1.13	0.60	2.12	0.716
Mother	172	148	0.97	0.50	1.90	0.937
Other Family Members (Father, Siblings and Relatives)	160	160	0.84	0.31	2.33	0.743
Friends	160	160	0.84	0.29	2.43	0.753
Doctors	213	107	1.69	0.65	4.36	0.280
Books/Magazine/Films	173	147	Ref			
Preferred information about sex						
Teacher	169	151	0.79	0.35	1.79	0.576
Mother	195	125	1.09	0.57	2.08	0.791
Other Family Members (Father, Siblings and Relatives)	143	177	0.57	0.24	1.36	0.206
Friends	168	152	0.97	0.35	2.69	0.951
Doctors	188	132	0.78	0.41	1.45	0.426
Books/Magazine/Films	192	128	Ref			
Need for classes on sex education						
Need more classes	177	143	0.93	0.46	1.90	0.848
Don't need more classes	183	137	Ref			
Abbreviations: OR= Odds Ratio, CI= Confidence Interval, Ref= Reference						

4.11 Association of awareness and risk of contraceptive use with the current contraceptive use to avoid pregnancy

The association between awareness and perceived health risk of contraceptive use among the sexually active girls and current contraceptive use is presented in Table 4.10.

Among the sexually active (n = 62) there was significantly increased proportion of current contraceptive use among girls who agreed that a woman can get pregnant on the very first time of sexual intercourse (OR=2.06; 95% CI: 1.22-3.46; P=0.005) than those girls who disagreed with the statement.

The current contraceptive use was significantly higher among girls who disagreed that a woman stops growing after she has had sexual intercourse for the first time (OR=3.25; 95% CI: 1.18-8.96; P=0.023) compared to those who had a contrary view on the statement.

Respondents who indicated that there is no health risk for using contraceptives had significantly more current contraceptive use (OR=2.90; 95% CI=1.79-4.72; P<0.001) than those who reported otherwise.

Table 4. 13: Association of awareness and perceived health risk of contraceptive use with the current contraceptive use

Variables	Current contraceptive use		OR	(95%CI)		*P value
	Yes,	No,		Lower	Upper	
n=42						
A woman can get pregnant on the very first time that she has sexual intercourse						
Agree	28	14	2.06	1.22	3.46	0.005
Undecided	27	15	3.09	1.08	8.79	0.198
Disagree	20	22	Ref			
A woman stops growing after she has had sexual intercourse for the first time						
Agree	22	20	Ref			
Undecided	22	20	0.92	0.42	2.03	0.839
Disagree	33	9	3.25	1.18	8.96	0.023
A woman is most likely to get pregnant if she has sexual intercourse during her periods.						
Agree	24	18	1.02	0.63	1.66	0.926
Undecided	23	19	0.98	0.51	1.88	0.945
Disagree	23	19	Ref			
Number of methods mentioned						
Only one	27	15	0.84	0.27	2.62	0.767
Two	23	19	0.54	0.17	1.69	0.287
Three	20	22	0.43	0.14	1.32	0.140
Four	20	22	0.41	0.12	1.41	0.156
Five	29	13	Ref			
Whether there is perceived health risks of contraceptive use						
Yes	20	22	Ref			
No	30	12	2.90	1.79	4.72	<0.001

Abbreviations: OR= Odds Ratio, CI= Confidence Interval, Ref= Reference *Significant P Value Bolded

4.12 Factors associated with the current contraceptive use among secondary school girls

Logistic regression analysis was performed in order to identify factors independently associated with current contraceptive use. Seven (7) factors that associated with current contraceptive use at $P < 0.05$ during bivariate analysis were subjected all together in a multivariable analysis. After running all these factors using binary logistic regression by specifying '*backward Conditional*' with removal at $P < 0.05$, five (5) factors were retained in the final analysis as presented in Table 4.11. Form Three girls were 4.71 times (AOR = 4.71; 95% CI = 1.97 – 6.89; $P < 0.001$) likely to use contraceptives as compared to Form One girls. Girls in the 18 – 19 age group were 3.4 times (AOR = 3.43; 95% CI = 1.16 – 12.43; $P = 0.005$) likely to use contraceptives as compared to the 15 – 16 years age group. The type of school was a predictor to contraceptive use with girls attending mixed day schools 3.21 times (AOR = 3.21; 95% CI = 1.93 – 8.87; $P = 0.014$) likely to use contraceptives as compared to their girls-only boarding schools counterparts. Current contraceptive use to avoid pregnancy tend to be about 4-fold more among girls who agreed that a woman can get pregnant on her sexual debut as compared to those who responded otherwise (AOR = 3.92; 95% CI = 1.29 – 11.88; $P < 0.017$). The current contraceptive use was 2.7 times more among girls who had no perceived health risk of contraceptive use (AOR=2.77; 95%CI=1.67-4.59; $P < 0.001$) than those who indicated there is health risk using contraceptives.

Table 4. 13: Factors associated with contraceptive use among secondary school girls

Variable	AOR	(95%CI)		* P value
		Lower	Upper	
Form				
One	Ref			
Two	1.68	0.98	4.72	0.091
Three	4.71	1.97	6.89	<0.001
Four	1.98	0.66	5.11	0.062
Age group				
15 - 16	Ref			
16 - 17	1.04	0.43	4.66	0.086
17 - 18	1.27	0.56	5.81	0.079
18 - 19	3.43	1.16	12.43	0.005
19 - 20	1.89	1.63	4.71	0.067
Type of School				
Girls only Boarding	Ref			
Mixed Day	3.21	1.93	8.87	0.014
A woman can get pregnant on the very first time that she has sexual intercourse				
Disagree	Ref			
Undecided	0.94	0.39	2.23	0.879
Agree	3.92	1.29	11.88	0.017
Whether there is perceived health risks of contraceptive use				
Yes	Ref			
No	2.77	1.67	4.59	0.027
Abbreviations: AOR= Adjusted Odds Ratio, CI= Confidence Interval, Ref= Reference*Significant P Value Bolded				

4.13 Qualitative analysis of the focus group discussion

From the focus group discussions, several themes describing the contraceptive use, decision making around contraceptive use and risks of contraceptive uses were noted.

4.13.1 Responses on use of contraceptives

The narrations from the girls showed that some of were not willing to use contraceptives. They felt that it was not right for a school- going girl to use contraceptive as viewed that contraceptives are meant for married people and other child bearing adults. An example of a such information is the quote that;

“...even the Bible says that sex is for the married” (FGD 1 Form 1, Girls-only)

However, some of the girls expressed the desire to use contraceptive to avoid unwanted pregnancy. For instance, one participant admitted that she was not 100% opposed to the idea of contraceptive use as stated below.

“...let us not lie to ourselves, I would rather use contraceptives than get pregnant and drop out of school. I wish my mother was not as strict as she is, I would have asked her to take me along to her doctor, so that I also get the injection.....condoms themselves can protect against AIDS too” (FGD 2, Form 4, Girls only).

Some participants also indicated that access to contraceptives is a challenge. They claimed that they don't have money to buy contraceptive methods. One of the FGDs participants quoted as follows:

“...where will I even get the money to buy them, yet even the money I use to buy my pads is provided by my parents” (FGD 1 Form 2, Mixed Day)

During the first FGD, no participant admitted to using contraceptives. However, 3 of the 10 participants admitted knowing a classmate who uses/confessed using contraceptives. One respondent said this:

“One day I saw P2 (a brand of Emergency Pill) in my desk mate's bag when I was looking for an extra pen..... I did not tell anyone because she would be embarrassed” (FGD 1 Form 2, Mixed Day School)

As a follow up on the second FGD and because of the potential of embarrassment among peers owing to the sensitivity of topics on sexuality, the moderator reframed the question into “Do you know of any classmate using contraceptives?” rather than “Do you use/have you ever used contraceptives?” Just as in the first FGD, none of the participants confessed use of contraceptives. However, two students admitted knowing/hearing about a classmate who uses them.

“.... I know of a Form Two in my dormitory who was caught with P2 during a random search by the head girl when the school had just re-opened....” (FGD 2 Form 4, Girls-only boarding”

4.13.2 Decision making around contraceptive use

The main perceptions affecting contraceptive use were: parental approval, peers' approval of the use of contraception, health impacts, knowledge on how to use a contraceptive method and the availability of the contraception method. According to one participant, prior to the FGD, she had never heard of other contraceptive method except condom. This was indicated in statements such as

"...up to today, the only way to avoid getting pregnant that I knew was using condoms" (FGD 2, Form 1, Girls Only)

Parental and peer approval were largely mentioned as the reason of non-use among some FGD participants who were willing to use the contraceptives.

"For me, my friends would think am spoilt if they learn that am having sex, let alone using contraceptives. My mother would call for a "kesha" (prayer vigil) to remove (exorcise) the demons in me while my father would cane the demons in me if they learnt that I am using contraceptives" (FGD 1, Form 3, Mixed Day)

Majority of the respondents also stated that the use of contraceptives such as condoms was almost exclusively determined by the male partner as illustrated below.

"If I had a boyfriend then I insisted on us using a condom, it would mean that I have not been faithful to him, or that I don't trust him enough...he should decide when to use and when not to use them" (FGD 2, Form 3, Girls only)

Some respondents reported that service providers including the “Youth Friendly” service providers had negative perceptions and were reluctant to give school going girls contraceptives even if they were to ask for them.

“I one day took my friend to the Youth Friendly Clinic at Pembe Tatu and she was chased away because she did not have her ID”

Some respondents deemed contraceptives as a way of encouraging immorality among teenagers and that abstinence was the only way to avoid getting pregnant.

“Young girls like us should not engage at all in sexual activities until we are married” (FGD 1, Form 4, Girls Only)

4.13.3 Risks of contraceptive use

Most of the respondents showed that concerns over perceived side effects of contraceptive methods, particularly cancer, condom blockage, menstrual disruption and deformed children in the future. Moreover, some respondents reported that it was not proper for them to use contraceptives because of the potential of various adverse chronic and acute health effects. For instance, the main side effects or the risks of contraceptive use were narrated as follows:

“I hear the pills cause cancer” (FGD 1, Form 2, Mixed Day)

“Condoms can stick inside you and cause a blockage in the womb” (FGD 2, Form 1, Mixed Day)

“Using contraceptives can make me have deformed children in the future or worse still cause me to be barren” (FGD 2, Form 4, Girls Only)

“My aunty told me that if one uses contraceptives, she gains excessive weight and have very heavy menstrual flow” (FGD 1, Form 3, Mixed Day).

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 DISCUSSION

5.1.1 History of sexual contact

This study established that, among the interviewed respondents 54.7% have had sex in the past which is higher than KDHS, 2014 which reports that nationally 37.3% of women in age group 15-19 have had sex, with the median age at sexual debut being 17.1 years (KDHS, 2014). Kisumu has one of the lowest median age at sexual debut in the country (16.4). Using this as a proxy, it is probable that the percentage of sexual debutant between the KDHS report and this study would be close.

It further revealed that of the 54.7% who had had sex, 35% of them (accounting for 19% of the total respondents) were sexually active at the time of the study. This is lower compared to a study done among adolescent girls in Kiambu County which established that 34% of the respondents were sexually active (Murigi, 2015). A study by Ikamari in the year 2007 in Kenya, showed that the majority (62%) of Kenyan adolescents are sexually experienced indicating a slightly higher rate than that of the current study (Ikamari and Towett, 2007).

5.1.2 Contraceptive use

The current percentage contraceptive use to delay pregnancy was found to be 40% among the sexually active respondents with 31% using condoms. Unsafe sex as a risk factor for Disability – Adjusted Life Years (DALYs), which increased from the 13th rank to the second for both sexes aged 15–19 years from 1990 to 2013 (Fleming *et.al.*, 2014). Several reasons were put forward for non-use of contraceptives by girls in this study, including; peer influence, parental influence, partner influence and religious influence. These findings are similar to other studies done in Africa and other developing countries, which show that partner and parental influence play a role in contraceptive use (Williamson *et.al.*, 2009). This study revealed that, there existed several misconceptions about contraceptives and their use, especially the fear of infertility and barrenness. These may explain the low uptake of contraceptives among the sexually active girls in this study. This is similar to a finding among adolescent girls in Nyando Sub County, Kenya which reported that the main barrier to the uptake of OCs among adolescent girls is the fear of future infertility (Shikuku *et.al.*, 2017). A study carried out in Kenya showed that though there has been a slight increase in contraceptive use among adolescent girls in Kenya over the past few years. However, the overall uptake of contraceptives is still low (Mokdad *et.al.*, 2016). A study conducted among youth established that HIV/AIDS is the number one cause of death and disability among those aged 10 to 24 years, deaths being highest in 2013 among 15-19-years group, the age at which many of them are in secondary school (Santelli *et.al.*, 2006).

5.1.3 Factors associated with Contraceptive use

Class grade emerged as one of the factors affecting use of contraceptives among girls in Kisumu East Sub-County where those in Form Three are more likely to use contraceptives as compared to those in Form One. These findings are consistent with a study conducted among teenagers in America that established a lower risk of pregnancies among those in higher grades due to access to information and different contraceptives to delay pregnancy (Burdette *et.al.*, 2014). The observation is probably due to sexual maturity at this age, factoring in the age of sexual debut in the country's context which is 17, the age at which most girls are in Form Three (Hindin and Fatusi, 2009). Current contraceptive use to avoid pregnancy was 4-fold more among girls who agreed on that a woman can get pregnant on her sexual debut as compared to those who stated otherwise. The knowledge of sex and pregnancy has been reported as a predictor of contraceptive use among adolescents in some studies (Williamson *et.al.*,2009). Contraceptive use was 2.7 times more among girls who had no perceived health risk of contraceptive use ($P<0.001$) than those who indicated there is health risk using contraceptives. Having no perceived risk associated with contraceptive use made some of the respondents in the study area more at ease to use contraceptives; as those opposed to those with perceived risk who were afraid of the consequence resulting from the use of the contraceptives. A study conducted among women using oral contraceptives established that there was an increased breast cancer risk among current/recent users and long-term users $P<0.05$ (Kumle *et.al.*, 2012).

5.1.4 Sources of reproductive sexual health information

Mothers were established to be the main important source of information about contraceptives (35.9%) followed by books/magazine/films (21.6%), teachers (20.3%) and friends (seven percent). This contrasts partly with a study done in Kiambu County, which established that peers and mass media (print and electronic media) were the main sources of information on contraceptives, accounting for 96.1% (Murigi, 2015).

The National Adolescent Sexual and Reproductive Health Policy (NAS&RH), 2015 tasks the Ministry of Education to provide parents with information relating to adolescent sexual and reproductive health within the school set up (NAS&RH, 2015). As demonstrated by this study parents, especially mothers appear to be an important source of information on sex and reproductive health. However, the implementation of the foregoing task to the Ministry of Education has not been properly documented or followed up (Wambugu, 2018).

5.1.5 Knowledge, attitude and practice on contraceptives

This study established that all the respondents were able to mention at least one contraceptive method with majority (81.9%) of them know of condoms. High level of knowledge on contraceptives tallies with the KDHS 2014 findings of 98% knowledge of at least one modern method of contraceptives (KDHS, 2014).

Among the sexually active respondents, who were not using a method of contraception, a majority of them (84%) were willing to use any contraceptive method to prevent

pregnancy. Condoms were the most mentioned method that the girls were willing to use. Majority of the girls (62.8%) indicated that there are health risks posed by contraceptive use while 35.9% of the girls were with a contrary view of no perceived health risk. The main health related risk of contraceptive use mentioned by the girls was barrenness / infertility (42.8%). Additionally, responses from FDG established that some of the respondents were not willing to use condoms due to the opinion that “*Condoms can stick inside you and cause a blockage in the womb*”. A study conducted in Kiambu County among adolescent girls established that majority of the adolescent girl’s perceived contraception as good because it would prevent pregnancy (81.7%) and 95% of those interviewed reported that contraceptives are not harmful (Murigi, 2015). The level of willingness to use condoms in this study is consistent with a similar study by (Murigi, 2015).

In sub-Saharan Africa, a review of 23 school-based comprehensive sexuality education programmes highlighted the need for increased attention to relationships, sexual and reproductive health, and social norms and gender to make life skills training more relevant and effective (Hospital *et.al.*, 2018).

5.2 CONCLUSIONS

Arising from the results of this study it is concluded that:

1. This study established that, 54.7% of the interviewed respondents have had sex in the past; with 35% (accounting for 19% of the total respondents) of them being sexually active at the time of the survey.

2. It was established that current contraceptive use to delay pregnancy was found to be 40% among the currently sexually active respondents.
3. Multiple logistic regression analysis established the following factors as independent predictors of contraceptive use: Class grade, school type, age group, knowledge that a woman can get pregnant on sexual debut and having no perceived risk of contraceptive use.
4. Mothers (35.9%) and books/magazine/films (21.6%) were the two major sources of information on contraceptives among the respondents.

5.3 RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

- a) There is need of reproductive health education specifically on sex, consequences of engaging in sexual activity before marriage.
- b) Parents (especially mothers) and guardians should be provided with information relating to adolescent sexual and reproductive health within the school set up to complement, rather than contradict what is taught in schools, as they (mothers/parents) appear as an integral source of information on contraceptives.
- c) There is need of creating awareness on different types of contraceptives, their role and side effects as to provide correct information to secondary school students eliminating misconceptions that are misleading and fear of their use.

d) There is need of incorporating reproductive health education programs in secondary schools by reproductive health specialists preferably from Ministry of Health to provide information regarding contraceptives and sex.

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APPENDICES

Appendix I: Questionnaire

You are invited to participate in this reproductive health study, aiming to collect information about factors associated with contraceptive use among secondary school going girls. We value your opinion and thank you in advance for your time. This questionnaire consists of four sections and should take approximately 45 minutes to complete it.

You are not asked for your name or other identifiers. Participation is completely anonymous. Analysis will not be conducted on an individual basis but collated by codes.

No identifying information about you will be recorded by the data processing software. We do hope you enjoy taking part. Your participation in this study is voluntary; you may refuse to answer any particular questions or to participate altogether. Even if you decide to take part, you may withdraw from the study at any time.

CAUTION:

Some questions may be intrusive.

Section 1: Demographic characteristics

1.1 NAME OF SCHOOL														
1.2 What day, month and year were you born?	Day <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Mon <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Year <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>														
1.3 How old were you at your last birthday?	Years old <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>														
1.4 What form are you in? TICK ONE BOX IN COL 2	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">One <input style="width: 20px; height: 20px;" type="checkbox"/></div> <div style="text-align: center;">Three <input style="width: 20px; height: 20px;" type="checkbox"/></div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: center;">Two <input style="width: 20px; height: 20px;" type="checkbox"/></div> <div style="text-align: center;">Four <input style="width: 20px; height: 20px;" type="checkbox"/></div> </div>														
1.5 What is your religion? CIRCLE RELIGION IN COL. 2	<table style="width: 100%; border: none;"> <tr><td style="width: 80%;">None</td><td style="text-align: right;">01</td></tr> <tr><td>Catholic</td><td style="text-align: right;">02</td></tr> <tr><td>Protestant</td><td style="text-align: right;">03</td></tr> <tr><td>Muslim</td><td style="text-align: right;">04</td></tr> <tr><td>Hindu</td><td style="text-align: right;">05</td></tr> <tr><td>Jew</td><td style="text-align: right;">06</td></tr> <tr><td>Other.....</td><td style="text-align: right;">11</td></tr> </table> <p>(SPECIFY)</p>	None	01	Catholic	02	Protestant	03	Muslim	04	Hindu	05	Jew	06	Other.....	11
None	01														
Catholic	02														
Protestant	03														
Muslim	04														
Hindu	05														
Jew	06														
Other.....	11														

Section 2: Sources of information about reproductive health/contraceptives

<p>2.1 Young people learn about contraceptives from many sources. What has been the most important source of information for you on this topic? And the second most important?</p> <p>CIRCLE MOST IMPORTANT IN COL 1 AND SECOND MOST IMPORTANT IN COL 2</p>	<p>School teacher</p> <p>Mother</p> <p>Father</p> <p>Brother</p> <p>Sister</p> <p>Other family members</p> <p>Friends</p> <p>Doctors</p> <p>Books/magazines</p> <p>Films/Videos</p> <p>Other</p> <p>(Specify).....</p> <p>...</p>	<p>(1)</p> <p>Most Important</p> <p>01</p> <p>02</p> <p>03</p> <p>04</p> <p>05</p> <p>06</p> <p>07</p> <p>08</p> <p>09</p> <p>10</p> <p>11</p> <p>.....</p> <p>.....</p>	<p>(2)</p> <p>Second most important</p> <p>01</p> <p>02</p> <p>03</p> <p>04</p> <p>05</p> <p>06</p> <p>07</p> <p>08</p> <p>09</p> <p>10</p> <p>11</p> <p>.....</p> <p>.....</p>	<p>(3)</p> <p>Preferred</p> <p>01</p> <p>02</p> <p>03</p> <p>04</p> <p>05</p> <p>06</p> <p>07</p> <p>08</p> <p>09</p> <p>10</p> <p>11</p> <p>.....</p> <p>.....</p>
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<p>2.2 From whom, or where, would you prefer to have received more information on this topic?</p> <p>CIRCLE ONE ANSWER IN COL. 3</p>				
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		(1) Most Important	(2) Second most important	(3) Preferred
2.3 What has been your most important source of information on sex? And the second most important?	School teacher	01		01
	Mother	02	01	02
	Father	03	02	03
	Brother	04	03	04
	Sister	05	04	05
	Other family members	06	05	06
CIRCLE IN COLS. 1 AND 2.	Friends	07	06	07
	Doctors	08	07	08
	Books/magazines	09	08	09
	Films/Videos	10	09	10
	Other	11	10	11
	(Specify..... ...)	11
2.4 From whom or where, would you prefer to receive (or prefer to have received) more information on this topic?	
CIRCLE				

<p>ONE ANSWER IN COL. 3</p>				
<p>2.5 Do you think that there should be</p>	<p>More</p> <p>Less</p>	<p>01</p> <p>02</p>		
<p>(more) classes on sex education, fewer classes or are just enough? CIRCLE ONE ANSWER IN COL. 2</p>	<p>They are just enough</p>	<p>03</p>		

Section 3: Awareness, attitudes towards, and use of contraceptives

3.1 Read the following statements below:(a-c) TICK APPROPRIATELY IF YOU STRONGLY AGREE, AGREE, UNDECIDED OR STRONGLY DISAGREE.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
a) A woman can get pregnant on the very first time that she has sexual intercourse.					
b) A woman stops growing after she has had sexual intercourse for the first time.					
c) A woman is most likely to get pregnant if she has sexual intercourse during her periods.					
3.2 Do you know any method of contraception? CIRCLE IN COL. 2 If YES Mention as many as possible WRITE IN COL. 3	Yes 1. No 2.			METHODS MENTIONED a)..... b)..... c)..... d)..... e)..... f).....	
3.3 Do you know where (THE METHOD MENTIONED IN 3.2 ABOVE) can be obtained?	SOURCES OF METHOD MENTIONED(RESPECTIVELY) a)..... b)..... c)..... d)..... e)..... f).....				
3.4 Which method(s) do you think is most suitable for young people WRITE METHOD IN COL 2	MENTION METHOD(S) a)..... b)..... c)..... d).....				

Section 4: Factors Associated with the use of contraceptives

<p>4.1 Are you willing to use any method of contraception?</p> <p>IF YES MENTION METHOD, IF NO ANSWER THE NEXT QUESTION</p>	<p>Yes 1 →</p> <p>No 2 →</p>	<p>→</p> <p>Skip to 4.2</p>	<p>MENTION METHOD</p> <p>a).....</p> <p>b).....</p> <p>c).....</p> <p>d).....</p>	
<p>4.2 Why are you not willing to use/not using any method of contraception?</p> <p>(CIRCLE AS MANY REASONS AS POSSIBLE IN COL 1, 1 ANSWER IN COL 2 AND 1 ANSWER IN COL 3)</p>	<p>Reason(COL 1)</p> <p>Abstaining 01</p> <p>Parental influence 02</p> <p>Religion's influence 03</p> <p>Peer influence 04</p> <p>Partner's influence 05</p> <p>Expensive 06</p> <p>Unavailability 07</p> <p>Cultural influence 08</p> <p>Others (Specify) 11</p> <p>.....</p>	<p>Most Important(COL 2)</p> <p>01</p> <p>02</p> <p>03</p> <p>04</p> <p>05</p> <p>06</p> <p>07</p> <p>08</p> <p>11</p>	<p>2nd Most Important(COL 3)</p> <p>01</p> <p>02</p> <p>03</p> <p>04</p> <p>05</p> <p>06</p> <p>07</p> <p>08</p> <p>11</p>	

Appendix II: FGD Guide

1. Do you think it is right for a secondary school girl to use contraceptives?
2. Do you know anyone using contraceptives?
3. Where did she obtain it? And how friendly was the 'provider'?
4. What problems did you/your friend experience while using contraceptives?
5. Did the Teacher/Parent/Guardian discover this? How?
6. How did the Teacher/Parent/Guardian react to learning this?
7. Are you willing to use a contraception method?
8. Does the thought of using contraceptives worry you? Why specifically?
9. Do you have any concrete suggestions to help increase the uptake of reproductive health services?

Appendix III: Informed consent forms

FACTORS ASSOCIATED WITH THE USE OF CONTRACEPTIVES AMONG GIRLS ATTENDING SECONDARY SCHOOLS IN KISUMU EAST SUB COUNTY.

Principal Investigator: MBEWA DAVID.

Co-Investigators:

- 1) Professor Anselimo O. Makokha
- 2) Dr. Peter K. Mwaniki
- 3) Mr. Lawrence Muthami.

Institution: JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY.

Study location: KISUMU EAST SUB COUNTY

Background

Pregnancy is the second most common reason for adolescent girls dropping out of secondary schools in Kenya, with 13,000 girls leaving school for this reason every year. In Kenya the cases of pregnant teenagers is highest in the former Nyanza region i.e. 29%. The former Kisumu and Suba Districts are the leading districts in teenage pregnancies.

Purpose of the Research

To study the factors which influence the use of contraceptives. The findings of this research will be used to develop policies concerning reproductive health among adolescent girls particularly with respect to contraceptive use.

Procedures

The study will involve responding to semi structured self-administered questionnaires and a focus group discussion at a later date. You are not asked for your name or other identifiers. Participation is completely anonymous. A questionnaire will take approximately 45 minutes to complete. The focus group discussion will involve recording of the discussion. To ensure anonymity, each participant will introduce herself just with her initials. The FGDs will each last between 45minutes and 1 hour.

Potential Harm, Injuries, Discomforts or Inconvenience, Risks

The proposed research will involve the administration of questionnaires and Focus Group Discussions; therefore no physical harm or injury is expected. Discomfort is not anticipated either as you will complete the questionnaire in absolute privacy.

Potential Benefits

This study has no direct benefit; however, each participating school will be facilitated with the general research findings with the potential benefit of planning better the school's reproductive health needs to its students.

Confidentiality

Anonymity is assured, meaning that your real name and the transcribed responses will be kept safe and will not be revealed in any part of the thesis. In the course of the study, your consent form, your filled questionnaire and the transcribed answers will be kept separately. The information that you provide will be integrated with those of other participants for the purpose of analysis. At the end of the study it will be impossible to determine who said what.

Refund

The study is purely voluntary. However; there will be refund of fares used by the FGD participants. The amount will range from 200-1000 shillings depending on the distance.

Right to refuse/Withdraw

Your participation in this study is voluntary; you may refuse to answer any particular questions or to participate altogether. If you decide not to take part, you may withdraw from the study at any time. Your refusal to participate will not in any way affect your right to healthcare or affect the course of your academic pursuits

Contact

If you have any questions or clarifications about this study, in the course of the study or even after the study itself, feel free to contact me using the following addresses:

MBEWA DAVID, P.O. BOX 69395 -00400 NAIROBI.

Tel. 0723 241 755.

Email address: mbewajunior@gmail.com

Details of other investigators:

Prof. Anselimo Makokha

Jomo Kenyatta University of Agriculture and Technology

Tel. 0713 817 436

Prof. Peter Mwaniki

Jomo Kenyatta University of Agriculture and Technology

Tel. 0722 429 596

Mr. Lawrence Muthami

Kenya Medical Research Institute

P. O. Box 54840-00200

For any questions pertaining to rights as a research participant, the contact person is:
The Secretary, KEMRI Ethics Review Committee, P. O. Box 54840-00200, Nairobi;
Telephone numbers: 020-2722541, 0722205901, 0733400003; Email address:
ERCAdmin@kemri.org

a) STUDENT SIGNED CONSENT/ASSENT CERTIFICATE

The study you are about to participate in is aimed at studying the factors associated with the use of contraceptive among secondary school girls. Should you agree to participate in the study, you will be asked to complete a self-administered questionnaire that will take approximately 45 minutes. All data collected from you will be coded in order to protect your identity, if applicable. Only the research study staff will have access to the information. At the end of the study, there will be no way to link your name with your data. Any additional information about the study will be provided to you including the final study results through your respective school principals. You are free to withdraw or refuse to answer any questions at any time without any consequences. Should you agree to participate in the study, please sign your name below, indicating that you have read and understood the nature of the study, your responsibilities as a study participant, the inconveniences associated with voluntary participation in the study and that all your questions and concerns concerning the study have been answered satisfactorily. You will receive a copy of this signed consent/assent form to take away with you. Thank you

Signature of Study Participant

Date

Signature of Person Obtaining Consent/Assent

Date

Signature of Investigator

Date

b) Student SIGNED FGD CONSENT/ASSENT CERTIFICATE

The study you are about to participate in is aimed at studying the factors associated with the use of contraceptive among secondary school girls. Should you agree to participate in the study, you will part of a group that will discuss the factors associated with the use of contraceptives among secondary school girls under different themes. The discussion will be recorded and transcribed therefore you will be requested to introduce yourself with your initials to maintain anonymity. Only the research study staff will have access to the information. At the end of the study, there will be no way to link your name with your data. Any additional information about the study will be provided to you including the final study results through your respective school principals. You are free to withdraw or refuse to answer any questions at any time without any consequences. Should you consent to the participation of your daughter(s) in the study, please sign your name below: indicating that you have read and understood the nature of the study, your responsibilities as a study participant, the inconveniences associated with voluntary participation in the study and that all your questions and concerns concerning the study have been answered satisfactorily. You will receive a copy of this signed consent/assent form to take away with you. Thank you.

Signature of Study Participant

Date

Signature of Person Obtaining Consent/Assent

Date

Signature of Investigator

Date

c) SIGNED PARENTAL CONSENT CERTIFICATE

The study your daughter(s) is/are about to participate in, should you consent to her (their) participation, is aimed at studying the factors associated with the use of contraceptive among secondary school girls. The study does not encourage/discourage the use of contraceptives. Should you consent to her (their) participation, she/they will be asked to complete a self-administered questionnaire that will take approximately 45 minutes. All data collected from her (them) will be coded in order to protect their identity, if applicable. Only the research study staff will have access to the information. At the end of the study, there will be no way to link her with the data. Any additional information about the study will be provided to you including the final study results through their respective school principals. She is free to withdraw or refuse to answer any questions at any time without any consequences. Should you consent to her participation in the study, please sign your name below: You will receive a copy of this signed consent form to take away with you. Thank you.

Signature of Parent

Date

Signature of Person Obtaining Consent

Date

Signature of Investigator

Date

Appendix IV: Assessment of overall score awareness

The overall awareness score on contraceptives among the girls was assessed using the four (4) statements whose responses and scores were structured as follows:

- A woman can get pregnant on the very first time that she has sexual intercourse (Strongly Disagree=1; Disagree=2; Undecided=3; Agree=4; Strongly Agree=5).
- A woman stops growing after she has had sexual intercourse for the first time (Strongly Disagree=5; Disagree=4; Undecided=3; Agree=1; Strongly Agree=1).
- A woman is most likely to get pregnant if she has sexual intercourse during her periods (Strongly Disagree=5; Disagree=4; Undecided=3; Agree=1; Strongly Agree=1).
- Do you know any method of contraception (confirmed by mentioning at least one)? (Yes=1, No=0)
- Number of contraceptive methods that a respondent able to mention (One method=1; two methods=2; three methods=3; four methods=4; five methods=5).

The overall score was generated by aggregating the scores. The maximum attainable total score was 21. A percentage score was generated and classified as average and below ($\leq 50\%$), Moderate (51%-75%) and High ($>75\%$).

Appendix V: Certificates of translation and back-translation

I certify that the translation above is the true translation and back-translation from English to Kiswahili and vice-versa of the data collection tools in the study titled FACTORS ASSOCIATED WITH USAGE OF CONTRACEPTIVES AMONG GIRLS ATTENDING SECONDARY SCHOOLS IN KISUMU EAST DISTRICT, KENYA whose Principal Investigator IS DAVID MBEWA

Name... OWINO ANTHONY OLOO

Designation... LECTURER

Sign/stamp... 



Appendix VI: Map of Kenya showing Kisumu



Appendix VII: Ethical review committee approval letter

