

Determinants of Contraceptives Uptake among Adolescent Girls between 12-19 Years of Age Living In Teso- North, Busia County

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ABSTRACT

Globally, it is estimated that over 220 million women in LMICs have an unmet need for contraception. Although the prevalence of an unmet need for contraception among AGYW in SSA is unknown, approx. 25% of women in the sub region have unmet need for contraception, with majority of them being AGYW. There is only 43% of the Kenyan adolescents who use any form of contraception. Busia County is ranked among counties with high teenage pregnancies with the least CPR use among adolescent girls aged 12-19 years in Kenya. High rates of teenage pregnancy led to early marriages, school dropouts, unsafe abortions and STIs among adolescents' girls and youths in the region. Several NGOs and MoH came up with strategies to create awareness on SRH services in school health programs, but all was in vain. The main objective of this study was to establish the determinants of contraceptive uptake among adolescent girls aged 12-19 years in Teso- North, Busia County, and research questions were; what are the educational, socio-cultural, economic and reproductive health related services determinants to contraceptive uptake among adolescent girls aged 12-19 years living in Teso-North, Busia County. This study applied descriptive design that was cross-sectional using both quantitative and qualitative research methods. It had 415 respondents who were secondary school adolescent girls in Teso North Sub County for quantitative data. Qualitative data was collected by conducting two Focused Group Discussions (FGDs) using interview guide. Data analysis was done by computer software statistical Package for Social Scientists (SPSS) version 25. Analysis methods used were descriptive and inferential statistics comprising of chi-squares and binary logistic regression analysis to identify determinants of contraceptive uptake among adolescent girls. Odds ratios, 95% confidence intervals and p-values were reported. P-values <0.05 were considered statistically significant. Ethical approvals were sought and granted by different authorities and bodies. Consent was sought from respondents by assuring them of their privacy and confidentiality of information was maintained. This study established that 47.2% (196) of the girls had sexual partners, 72.4% (301) knew at least a contraceptive method although 29.3% (122) of them had used a contraceptive before. It revealed, class (Form 4s were nine times likely to use FP compared to Form 1s (AOR 8.9, 95%CI 2.0 - 39.7, P = 0.004), residence (girls from the peri-urban residence were nine times compared to those from rural residence (AOR 9.0, 95%CI 2.8 - 28.9, P<0.0001), staying with guardians compared to parents (AOR 2.7, 95%CI 1.2 - 6.1, P = 0.018), having a sexual partner's lack of partner (AOR 16.4, 95%CI 5.8 - 46.6, P<0.0001), discussing contraceptives with anyone's keeping to themselves (AOR 4.2, 95%CI 1.7 - 10.7, P = 0.002), ability to access FP services at any time at home or school's unable to access (AOR 3.4, 95%CI 1.3 - 9.2, P = 0.016) and knowing a place in the community where one can get contraceptives vs doesn't know a place in community to get contraceptives (AOR 4.9, 95%CI 1.3 - 17.9, P = 0.017) were significant determinants for contraceptive use. Contraceptive uptake among the adolescent girls in Teso North was low despite half of the girls being sexually active. Targeted strategies for expanding access are; integration of school teaching curriculum with SRH focusing on contraception from form 1 to form 4, parents to take role of support to adolescent girls in provision of adequate information on SRH as per AACSE and MoH Busia County to make SRH services in public health facilities youth friendly for ease accessibility to all youths

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I. INTRODUCTION

1.1 Introduction

Anyone between the ages of 10 and 19 is considered an adolescent (WHO, 2020). This age group makes up 16% of the world's population and is one of the groups with the fastest growth (UNICEF, 2016). Their work is essential to reaching a number of important development goals and strategies, such as improving teen

health and rights (UNFPA, 2014). Teenagers are a group whose family planning needs are not being met (WHO, 2014). Sexual and reproductive health and rights (SRHR) of these populations are a global priority because their reproductive choices have a huge effect on their health, well-being, education, and economy (Darrochet *et al.*, 2018).

During adolescence, there is more sexual exploration and exposure to sexual risk behaviors, such as having a sexual encounter at a young age, having multiple sexual partners, having a sexual encounter without protection, or having a sexual encounter while drunk or high (WHO, 2014). Most young people start having sexual relations before they turn 20. This is because of changing values brought on by urbanization, exposure to foreign culture through rural-urban migration, tourism, mass media, internet, erosion of traditional norms and values, peer pressure, and lack of parental control (Blum *et al.*, 2014).

Contraceptives are things like devices, drugs, agents, sexual practices, or surgical procedures that stop a couple from getting pregnant (WHO, 2013). Women who can have children between the ages of 12 and 49 use contraceptives to help them plan when and how many children to have (Trussellet *et al.*, 2018). They are easy to get at public health facilities, private/Faith Based Organization clinics, and local retail pharmacies. In general, there are two types of birth control: modern ones, like condoms, IUDs, implants, and pills, and traditional ones, like folklore and withdrawal. Teenagers' main options for birth control are condoms and hormonal birth control. But hormonal birth control should only be used in long-term, monogamous relationships. The only exception is male and female sterilization (Apter, 2018). All methods that are safe for adults' bodies are also safe for teenagers' bodies (Apter, 2018).

There are many drugs and devices that can be used to avoid getting pregnant. They are grouped together and talked about under five main categories: hormonal methods, Intrauterine Contraceptive Device (IUCD), barrier methods, post-coital contraception, and natural methods like; Hormonal methods include Combined Oral Contraceptive (COC) methods, transdermal combined hormonal patch, transvaginal combined hormonal, intramuscular combined hormonal injectable, and progestogen-only methods (WHO, 2018). Methods of birth control that only use progestogen are the progestogen-only pill, progestogen-only injections, and progestogen-only subdermal implants. They thicken the mucus in the cervix to stop sperm from moving around and change the endometrium to stop implantation. It is recommended that the pills be taken every day at the same time (WHO, 2018). Contraceptive implants are small hormone capsules or rods filled with progestogen that are put under the skin on the inside of the upper arm while the person is getting a local anesthetic. The steroid is released into the body at a steady rate that is slightly higher during the first year of use. The steady level of steroid in the blood makes it very effective at stopping pregnancy. Implants are most often used when a woman wants a very effective method without the finality of sterilization (WHO, 2018). Combined Oral Contraceptive (COC) methods have different amounts of the synthetic steroid hormones estrogen and progestogen, and their main way of working is to stop ovulation. COCs are effective, easy to use, reversible, shorten most menstrual cycles, and don't hurt you if you take too much (Edelman *et al.* 2014). But the worst side effects are irregular or long-lasting bleeding, no periods, and weight gain (Potter *et al.*, 2014).

Intrauterine contraceptive devices (IUCD) are put at any time during the menstrual cycle, as long as pregnancy has been ruled out. Some medical professionals prefer to insert the device near the end of menstruation or shortly after (Trussellet *et al.*, 2018). The IUCD induces an inflammatory response characterized by an increase in leukocytes that kill spermatozoa and oocytes. Copper intrauterine contraceptives impair endometrial enzymes, glycogen metabolism, and estrogen uptake, hence making the endometrium unfriendly to implantation (Trussellet *et al.*, 2018). Copper IUDs are advantageous because to their safety, efficacy, high continuation rates, and reversibility. However, potential adverse consequences include expulsion, perforation, malpositioning, discomfort, and bleeding (CCP&WHO, 2018).

Barrier techniques are utilized to prevent spermatozoa from contacting the ovum. It includes male and female condoms, diaphragms, and cervical caps that are typically used in conjunction with spermicide. Benefits include easy availability, prevention against sexually transmitted diseases, low cost and safety (WHO, 2018). Vaginal film is a thin, two-by-two-inch sheet containing a chemical that kills sperm (a chemical called nonoxynol-9). It is positioned on or close to the cervix (the opening of the womb). It disintegrates in seconds (Hassoun, 2018). The vaginal sponge functions as a barrier to prevent pregnancy. The sponge prevents sperm from entering the cervix by serving as a barrier. Women who have never given birth benefit more from the sponge than those who have (Trussellet *et al.*, 2018).

Post-coital contraception Emergency contraception is another name for post-coital contraception. There are three forms of emergency contraception: combined oral emergency contraceptives, progestogen-only emergency contraceptives, and copper intrauterine device insertion (Trussellet *et al.*, 2018). Copper IUD insertion prior to implantation is highly effective when performed within five days of the first sexual encounter (WHO, 2018).

The natural methods of contraception involve noting the signs and symptoms of the fertile periods of the menstrual cycle and abstaining from sexual activity during the fertile phase. Major benefits of this strategy are the lack of physical adverse effects and independence from medical personnel. The strategy necessitates

discipline and frequent documentation. Observation of cervical mucus, body temperature, Coitus interruptus, and the calendar or rhythm approach are examples of natural methods (Sung&Abramovitz, 2020).

1.2 Background Information

About 214 million women of reproductive age, including adolescent girls in underdeveloped nations, do not use a contemporary contraceptive method (WHO, 2019). Globally, adolescents' sexual and reproductive health (SRH) needs are largely unmet, with around 20 million female adolescents aged 15-19 requiring modern contraceptive techniques (Casey *et al.*, 2020). Sub-Saharan Africa has the highest teen pregnancy rates and the lowest use of modern contraception (Dennis *et al.*, 2017; Wooget *et al.*, 2015).

An estimated fifty percent of adolescent female pregnancies in developing nations are unwanted, and more than fifty percent of these pregnancies result in induced, and frequently unsafe, abortions (Biddlecomet *al.*, 2018). Globally, an estimated 16 million teenagers between the ages of 15 and 19 give birth each year (Chandra-Mouliet *al.*, 2014). This is attributable to unprotected sexual activity among adolescents, which results in unintended adolescent pregnancy, which is frequently regarded as a severe social and public problem (WHO, 2012). The 2016 study by Patton *et al.* revealed that adolescent pregnancy and childbirth are associated with other negative health outcomes, including maternal and neonatal mortality, anemia, preterm birth, low birth weight, and adverse adolescent mental health effects, in addition to its negative effects on higher education attainment and employment opportunities. According to UNFPA (2013), 75 percent of young women in sub-Saharan Africa had their first sexual experience by the age of 18. In the majority of sub-Saharan Africa, adolescent sexuality has caused great worry due to low contraceptive use, unintended pregnancies, and sexually transmitted illnesses, such as human immunodeficiency virus or acquired immunodeficiency syndrome (HIV/AIDS) (WHO,2014). Particularly in sub-Saharan Africa, addressing the reproductive health requirements of teenagers as they commence sexual activity and are exposed to the possibility of pregnancy is one of the greatest obstacles facing family planning initiatives (WHO, 2015).

In Kenya, reproductive health behavior among adolescents is considered as a major health, social, and demographic issue. Although many people are exposed to the risks associated with precocious sexual activity, the use of contraceptives is a delicate matter in a society with strong religious leanings, and young people face numerous obstacles when attempting to obtain birth control. The objective of the government is to "provide provision of contraceptive services for those men and women who are ready and need them," although teenagers have limited access to such treatments (UNFPA, 2013).

About 12 percent of sexually active, unmarried adolescent girls use contraception. Due to this low contraceptive utilization, rates of unwanted pregnancies, abortions, and sexually transmitted diseases are elevated (NCPD & PSRI, 2013). In low and middle income countries (LMICs), complications related to pregnancy and childbirth are the top cause of death for girls aged 15 to 19 years old (Chandra-Mouliet *al.*, 2014). Compared to women aged 20 to 24 years, adolescent moms (10 to 19 years) are at greater risk for eclampsia, puerperal endometritis, and systemic infections (Ganchimeget *al.*, 2013).

Perinatal mortality are much greater in infants born to adolescent mothers than to moms aged 20-29, as are other complications such as low birth weight (Chandra-Mouliet *al.*, 2014). Preventing adolescent pregnancy is therefore essential to improving mother and newborn health. Promoting the use of contraceptives and safe sexual behavior among young people is also seen crucial for preventing these negative reproductive health effects (WHO, 2020).

Family life education, particularly contraceptive education, is likewise a delicate matter, and the degree to which schools treat it differs from institution to institution. The announcement and implementation of this context sparked a new round of outrage and discussion. This study seeks to investigate the factors influencing the use of contraceptives among adolescent girls in Teso North Sub-County, Busia(Kenya), aged 12 to 19.

Kenya's 2010 constitution provides the overarching legal and policy framework for the performance of health functions and the delivery of quality health care services at various levels of governance and health system. Article 19 (1) of the Kenyan constitution states that the bill of rights serves as the foundation for social, economic, and cultural policy. Article 26 establishes the right to life, the beginning of life, and the conditions under which a person may be purposefully deprived of life in accordance with the Constitution or other established law.

Article 43 (1)(a)(2) of the Kenyan constitution provides everyone the right to the greatest achievable health standards, which includes the right to healthcare services, including reproductive healthcare, and states that no one shall be denied emergency medical care. Articles 53-57 outline the rights of special groups, such as children, people with disabilities, the elderly, youth, minorities, and marginalized groups, to basic nutrition, adequate healthcare services, including health facilities, materials, and devices, adequate care and assistance, relevant education, and protection from harmful cultural practices and exploitation. Article 46 (1)(c) stipulates that consumers have the right to protection of their health, safety, and financial interests.

Article 21 mandates the state to take the necessary legal, policy, and other measures, including the establishment of standards, to realize the rights provided in Article 43 and to meet Kenya's international duties

relating to human rights and basic freedoms. It also requires the state to address the needs of vulnerable groups within society, such as women, older members of society, persons with disabilities, children, and youth, members of minority or marginalized communities, and members of certain ethnic, religious, or cultural communities.

The National Reproductive Health Policy, 2014-2030 is intended to guide the planning, standardization, implementation, monitoring, and evaluation of reproductive health (RH) services provided by the Government, Non-governmental Organizations (NGOs), faith-based organizations (FBOs), and community-based organizations (CBOs), private-for-profit sectors, and communities in Kenya. The purpose of the policy is to improve the reproductive health status of all Kenyans by expanding equitable access and enhancing the quality, efficiency, and efficacy of service delivery at all levels. (GoK, 2007)

The National Adolescent Sexual and Reproductive Health Policy of 2015 seeks to improve the SRH status of adolescents in Kenya and contribute to their full participation in national development. One of the primary aims is to increase equal access to ASRH information and services that are of high quality, efficient, and effective for adolescents. Specifically, the policy sought to: promote adolescent sexual reproductive health and rights; contribute to increased access to ASRH information and age-appropriate comprehensive sexuality education (AACSE); contribute to reduction of STIs burden, including human papillomavirus (HPV) and HIV as well as improvement of appropriate response for infected adolescents; reduce early and unintended pregnancies; sexual and gender-based violence (SGBV) incidents amongst adolescents; and reduce sexual and gender (MOH, 2015).

The financing policy defines the resource mobilization, resource pooling, and procurement of services and commodities that must be taken into account when adapting the WHO global reproductive health plan to the country level. Integrating sexual and reproductive health care services is a policy that elaborates on WHO's global reproductive health plan and raises concerns to consider when integrating the sexual and reproductive health services component into a broader health care framework. A supportive legislative and regulatory framework is a policy that encompasses three aspects: developing national laws and policies that respect human rights, ensuring that national regulations and policies conform to international standards, and eliminating policy and regulatory barriers and restrictions (WHO, 2006).

1.3 Statement of the Problem

Teenage pregnancy and its consequences are serious public health issues in rural western Kenya (Omoroot *et al.*, 2018). The 2014 KDHS showed that Busia county had the highest teenage pregnancy rate of 20.8% among adolescent who had begun child bearing, compared to the national rate of 18.1% (KNBS& ICF International, 2015). Teso North sub County, Busia County had an adolescent girl's population of approximately 14,382 in 2019, of which 13,505 were not able to access contraceptive services; a contraceptive prevalence rate (CPR) of 6.1%. There was reported 1077 cases of teenage pregnancy in the same year, of which 43 ended up reporting perinatal deaths, 136 had low birth weights and 64 maternal complications including pre-eclapsia, hemorrhage, anemia and puerperal sepsis (KHIS, 2019). This CPR reduced in the year 2020 with a population estimate of 14,770, while 13,871 adolescent girls did not receive contraceptive services (94%) and teenage pregnancy of 997 cases, of which 49 had perinatal deaths, 142 low birth weights and 86 maternal complications (KHIS, 2020). Most of these adolescent girls ones they got pregnant ended up dropping out of school and some were forced to get married at such a tender age by their parents. These happened despite the continuous efforts of the IPAS organization, Marie Stopes International and the MOH creating awareness among the school going adolescents and conducting school health programs, there still seem to be unmet needs to address these issue.

1.4 Purpose of the Study

To investigate determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso- North Sub County.

1.5 Research Objectives

This research sought to achieve the following one broad and four specific objectives focusing on determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County.

1.5.1 Broad Objective

To establish determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso- North Sub County.

1.5.2 Specific Objectives;

1. To establish educational determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County.
2. To determine socio-cultural determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County.
3. To establish economic determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County.

4. To identify reproductive health related determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County.

1.6 Specific research question

1. What were the educational determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County?
2. What were the socio-cultural determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County?
3. What were the economic determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County?
4. What were the reproductive health related determinants of contraceptives uptake among adolescent girls between 12-19 years of age living in Teso North Sub County?

1.7 Justification of the Study

In Teso North, contraceptives uptake among adolescents is low while, use of contraceptives reduces maternal mortality and morbidity, improves health outcomes of adolescent mothers and their children and reduces the costs associated with teenage pregnancy (de Vargas *et al.*, 2019; Chandra-Moliet *et al.*, 2017). Planned childbirths increase the likelihood of attaining higher educational levels, which results in financial independence among women leading to reduced poverty level in the community (Darrochet *et al.*, 2016).

1.8 Significance of the Study

This study has been done to its logical end and has established key findings concerning uptake of the contraceptives among adolescents between 12-19 years of age in Teso North Sub County. Based on those key findings it has identified key informed recommendations that when implemented, then there will be turnaround of events so that all sexually active adolescents improve on the uptake of contraceptives and use them appropriately. The problems associated with non-usage of contraceptives will be reversed, hence the resources being used to manage the challenges would be re-directed to other economic viable activities.

1.9 Assumptions of the Study

The researcher assumed that respondents would be available during data collection and respond appropriately to the questions that were being asked. He also assumed that weather conditions would be conducive to facilitate movement from one place to another during data collection.

1.10 Limitations of the study

The researcher carried out the study among adolescent girls living in Teso North Sub County alone. The study focused only on the school going adolescent girls and therefore did not reference to the total population of adolescent girls given that teenage pregnancy was high in the region, since a good proportion of adolescent girls were out of school. The study also applied descriptive study design that was cross sectional in nature and data was collected at one point in time.

1.11 Definitions of Operational Terms

Access to contraceptives- Refers to the ease with which an adolescent is able to acquire contraceptives and contraceptive services.

Adolescent –Anyone of ages 10-19.

Contraceptive –Any drug or device used to prevent a pregnancy.

Determinant – A factor which decisively affects the nature or outcome of something.

Educational level on contraception –Is the amount of true information an adolescent has about the available methods of contraception, their proper use and the merits and demerits of such contraceptives.

Perceptions –Refers to the outlook of adolescent contraception.

Sexual behavior –Refers to sexual activity profile of an adolescent in the past six months in terms of the number of sexual partners, frequency of sexual encounters and the plan of the sexual encounters.

Sexually Active – For this study, an adolescent is defined as sexually active if they have had at least three sexual encounters in the last six months.

Sexually active adolescent – In this study it refers to an adolescent who has had at least one sexual encounter in the past six months.

SexualHealthEducation – Is a lifelong process of acquiring information and forming attitudes, beliefs, and values about such important topics as identity, relationships, and intimacy.

Uptake of Contraceptive – Refers to not only the utilization of a contraceptive but also the effective utilization of the contraceptive.

II. LITERATURE REVIEW

2.1 Introduction

This chapter two comprise of literature reviewed from secondary source of information related to the topic of study, which was sourced from previous studies, text books, articles, journals, seminars, conferences and electronic Medias. The methods used to source for the information was majorly the internet Google scholar and medical publications. The information is organized into two parts; theoretical framework which discusses the key variables under study and conceptual framework of the study which explains the relationships of variables. Those are: educational determinants of contraception, socio-cultural determinants, economic determinants to contraception and reproductive health related determinants to contraception by the adolescent girls aged 12-19 years. It provides a summary of the literature reviewed.

2.2 Educational Determinants of Contraceptives Uptake among Adolescents

Teenagers have inaccurate or insufficient knowledge of sexuality, reproduction, and contraception (Bankole&Malarcher, 2010). Teenage pregnancies are more prevalent among adolescent girls and young women (AGYW) aged 15 to 19 due to a lack of access to contraceptive information and economic issues (Binuet *al.*, 2018; Tamang *et al.*, 2017). Lack of access to SRH services at health institutions has an effect on the information available to teenagers. In addition to low contraceptive use and restricted access to information and services, studies indicate that teenagers have insufficient knowledge about family planning (Kennedy *et al.*, 2012). The primary source of information for adolescents was typically their classmates, whose information was typically unreliable and twisted. Thus, promoting contraceptive myths and fallacies (Lebeseet *al.*, 2013; Munakampeet *al.*, 2018).

To promote adolescent abstinence, health care practitioners opposed to adolescent contraception provide inadequate and incorrect information to adolescents seeking contraceptive treatments (Bitzeter *al.*, 2016). Lack of understanding of current contraceptive methods or unmet demand for contraceptives was a key contributor to non-use of contraceptives. In addition, the majority of teens do not utilize contraceptives due to a lack of information about their use and the many methods available (Chandra- Moullet *al.*, 2014).

Two-thirds of female teenagers in Uganda were unaware that condoms should be worn just once, despite the fact that virtually all recognized that unprotected sexual activity may end in HIV infection and less than half knew it could also result in pregnancy (Bankole&Malarcher, 2010). Restricting adolescents' access to contraceptive services and information is ineffective in reducing sexual activity and increases the risk of unwanted pregnancy and sexually transmitted illnesses (Naz, 2014). The general lack of parental guidance on sexuality and sex education was exacerbated by cultural taboos that discouraged such conversations (Godiaet *al.*, 2014).

The primary methods of contraception for adolescents are condoms and hormonal contraception. With the exception of female and male sterilization, all contraceptive procedures that are physiologically safe for adults are also safe for teenagers (Apter, 2018). Despite the availability of these options, contraceptive use among sexually active teens is low due to a number of linked issues (UNICEF, 2020).

Adolescents are more likely to have erroneous or inadequate knowledge of contraception if they don't receive a comprehensive sex education in school, at home, or in youth centers. (Odejimi& Young, 2014; Sidzeet *al.*, 2017). Even in the majority of American homes, the idea of sexual relations is forbidden. Few American schools provide adequate sexuality education. Therefore, the majority of teenagers learn about sexuality through their ignorant and misled classmates (Darrochet.*al.*, 2017). Some teens seek information from health care providers, who provide incorrect information about the negative effects of teenage contraceptives to prevent premarital sex and adolescent contraception by promoting abstinence (Kinaro, 2012).

In Burkina Faso, Ethiopia, and Nigeria, teenagers with secondary and tertiary education had a greater rate of contraceptive use than those with only a primary education (Hountonet *al.*, 2015). Similarly, in Ghana, the likelihood of contraceptive usage was higher among educated female adolescents; as education levels climbed, contraceptive use increased (Nyarko, 2018). This increase was more pronounced among urban adolescents with higher levels of education who reported a greater chance of contraceptive use, particularly condom use (Doyleet *al.*, 2012). Bangladesh found poor contraceptive use among female teenagers who were illiterate (Khan *et al.*, 2014).

Media-exposed adolescent females may have increased access to SRH knowledge, which could empower them in terms of their sexual rights and decisions (Zawet *al.*, 2013). The dissemination of information about sexual and reproductive health through the media may promote healthy sexual development and reduce sexual risk-taking behaviours(Titiloye&Ajuwon, 2017).

2.3 Socio-Cultural Determinants of Contraceptives Uptake among Adolescent Girls

The use of contraceptives has traditionally been hindered by cultural and informational barriers, as the majority of African societies place a high priority on large families, resulting in the non-usage of modern

contraception (WHO, 2018). Misconceptions about how contraceptives function, as well as culturally and religious considerations, have impeded the use of contraception among adolescent girls in Sub-Saharan Africa (Wirsiyet *et al.*, 2018). Contraceptives were viewed as a product that should not only be used by adults, but also by adults who were married. Thus, adolescents were not viewed as a prospective target for their usage, despite the fact that a significant proportion of adolescents not only became pregnant but also contract Sexually Transmitted Infections (WHO, 2018).

Cameroon had a comparatively low contraceptive uptake among married adolescents (40%) compared to single adolescents (60%), which may be attributable to the fact that married adolescents were less inclined to access contraceptives openly due to cultural and religious issues (Wirsiyet *et al.*, 2018).

In Nigeria, Muslim adolescent girls and young women (AGYW) and those of other religions are less likely to use modern contraceptives than Christians, (Adedini *et al.*, 2018). A comparable study found that in faiths where high parity was desired and fertility preference was high, contraception use was uncommon (Obasohan, 2015). Due to the idea that children are a blessing from God, Muslim women have a strong desire to have more children. Therefore, to obtain more of the blessings God has in store for them through children, they will be less likely to utilize contraception (Abdi *et al.*, 2020)

Parents, teachers, religious leaders, and other opinion shapers' emphasis on abstinence has served to stigmatize sex among teens. Sexually active adolescents are less likely to seek contraceptive products and services despite their need for them due to the perception that sexual activity prior to marriage is inappropriate (IPAS & AGI, 2013). The majority of opinion leaders had openly opposed adolescents' use of contraceptives, further discouraged them from using contraception, and women who decided to practice contraception risked social exclusion or familial strife (Adongo *et al.*, 2013). In some regions, women need their husband's permission to visit a health center or travel solo, which may have led to clandestine or limited contraceptive use (Chandra-Moulliet *et al.*, 2014).

In Sub-Saharan Africa, where women continue to rely on their husbands for important decisions, including health care, there was spouse support for contraception use. Despite World Health Organization and United Nations' concerted efforts, women may not be monetarily empowered to make such decisions independently (Ochako *et al.*, 2016). Compared to never-married or formerly married adolescent girls, those who were married or had a sexual partner had the highest likelihood of contraceptive use (Palamuleni, 2017).

Additionally, cultural and societal stigma associated with young people's sexuality may discourage them from obtaining reproductive health treatments or result in rejections of such services, even when parental agreement is not required. Many adolescents who are sexually active express anxiety, embarrassment, or reluctance to seek family planning assistance (Wirsiyet *et al.*, 2018).

At the community level, norms, mores, attitudes, and views that adolescents should not be sexually active and so do not require contraception may limit access to contraception (UNFPA, 2013). Even when they are able to access contraceptives, adolescent females in Cameroon confront challenges that prohibit them from using contraception, such as the shame surrounding extramarital sexual activity and/or contraceptive use (Wirsiyet *et al.*, 2019). In the setting of Kenya, an adolescent girl who becomes pregnant is more acceptable than one who utilizes contraception. This is related to the negative perceptions adolescents have regarding contraceptive use. Consequently, adolescents avoid using contraceptives for fear of being discovered by their parents, peers, or society (Kinaro, 2012).

The implementation of sexual education in schools was met with religious opposition. Contraceptives and condoms, according to the Catholic Church, are harmful and should not be used (Global Press Institute, 2011). Due to this reluctance, the government and parents avoid discussing the sexual and reproductive health of adolescents. According to the World Health Organization (2010), adolescent awareness of contraception and access to contraception may be hindered by varying cultural attitudes toward sexuality.

Moreover, family planning approaches contradict bio cultural values. Women in some civilizations, for instance, felt that monthly menstruation was healthy and therefore refused to use injectable contraceptives, which frequently result in irregular bleeding, spotting, or amenorrhea (no monthly bleeding) (Cleland *et al.*, 2014). Understanding a client's values can assist service providers in aligning their services with those beliefs or, if necessary, in addressing local misconceptions. Providers can potentially bridge such gaps by respecting clients' views and establishing links between their beliefs and medical models of health (Pandey & Sharma, 2012).

2.4 Economic Determinants of Contraceptive Uptake among Adolescents

Due to their educational standing, occupational skills, age, or gender role, adolescents who need contraception may not be economically stable. Some young women may be financially dependent on their boyfriends or parents; if there are problems in the relationship or if the partner is economically unstable, her access to a service may be restricted. Economic reliance and financial uncertainty have varying effects on adolescent contraceptive use. For example, it may be impossible for teens to afford transportation to a health

care facility. Teens may not be able to afford clinic fees and the cost of contraceptives, or they may have to miss job or school to attend services (Li Z *et al.*, 2020).

Compared to adolescents in the middle economic quintile, individuals in the poorest wealth quintile are less likely to adopt modern contraceptive methods. The majority of young women in Uganda obtain contraception from private sources at their own expense (Campbell *et al.*, 2015; Montagu & Goodman, 2016).

AGYW in Ghana chose long-acting reversible contraception (LARC) over short-acting contraception along the lower and medium wealth gradients (SAC). Due to the reoccurring costs of condoms and birth control tablets, their choice for LARC had an advantage over SAC. It also minimizes the frequency of hospital bills incurred by patients (Nketiah-Amponsah *et al.*, 2022).

Customers are more likely to utilize low-cost services. This was abundantly demonstrated by AGYW investigations conducted in Chad and Kenya. Clients cited low pricing and close proximity to services as the two most influential factors in their decision to engage the services (Rattan *et al.*, 2016).

When a girl has the ability to delay childbearing, she is also socially empowered to remain in school and economically empowered to acquire a more profitable career or pursue other income-earning options (Chaaban & Cunningham, 2011). A study (Ikamari & Towett, 2007) on sexual initiation and contraceptive usage among adolescent girls in Kenya revealed that socioeconomic class was substantially related with contraceptive use. People from low-income households were less likely to utilize contraceptives due to their inability to buy them. Similarly, a survey of secondary school students in Ethiopia revealed that AGYW had difficulty getting family planning services due to a lack of understanding about where to obtain contraceptives or an inability to finance the services (Binuet *et al.*, 2018).

Transactional sex, which is sexual activity in exchange for monetary gain, has also been shown to entice adolescents to engage in sexual behavior, predisposing them to unintended births. In settings of transactional sex, teenagers in Sub-Saharan nations may lack the capacity to determine the timing and conditions of sexual activity, according to a study. They have limited negotiating leverage with their partners to insist on condom use and are more likely to become pregnant and contract sexually transmitted infections (Kruguet *et al.*, 2016). The majority of adolescents in Kenya (91.3 percent), according to a study, have never exchanged money, gifts, or favors for sexual activity. Only 8.7 percent of respondents reported receiving money/gifts/favors in exchange for sexual activity (Ikamari & Towett, 2007).

2.5 Reproductive Health Related Determinants to Contraceptives Uptake among Adolescents

Reproductive Health-related factors may either promote or discourage adolescent girls and young women to seek reproductive health treatments in facilities. These elements included the qualities of the facilities, the design of the services, the health effects of contraceptives, and the attributes of the service providers.

Accessing quality reproductive health services is difficult for adolescent girls due to health providers' bias, age stigmatization or restrictions when seeking FP services, and issues regarding privacy, confidentiality, and the judgmental/intrusive attitudes of health workers during counseling sessions, examinations, and procedures. Those who acquired services in secret expressed greater satisfaction with service providers who kept their requirements and personal information private (Dehlendorf *et al.*, 2012). WHO guidelines reaffirmed the need to strengthen adolescent health services and interventions in order to make health care "youth-friendly." Several small-scale projects, largely conducted by non-governmental organizations (NGOs) and government-run health facilities, have observed this phenomenon (WHO, 2017; USAID, 2015).

Lack of privacy can offend women's sense of modesty and make it harder for them to actively choose a contraceptive technique. In a few locations, getting and utilizing contraceptives can be a difficult and dangerous choice that might result in abandonment, violence, social isolation, or divorce. In such circumstances, women require absolute anonymity (Dehlendorf *et al.*, 2012).

A systematic evaluation conducted in 2011 and revised in 2016 on youth-friendly SRH services for young people revealed that comprehensive, client-centered family planning counselling is important to young people (Brittain *et al.*, 2019).

Clients desire a variety of services; therefore, offering a vast array of contraceptive techniques can assist them in locating ones that meet their health conditions, lifestyle, and preferences (Jain *et al.*, 2012). The percentage of women who claimed they would prefer to be using a different contraceptive technique ranged from 11% (Mauritius) to 48% (Switzerland) in a study of the contraceptive preferences of clients in nine nations (Costa Rica). The cost of their desired methods, the difficulty of acquiring their present methods, medical ineligibility for other methods, and familial rejection of particular ways were stated as factors (Ochako *et al.*, 2015). Dissatisfaction can occur from a lack of supplies; consequently, some clients may stop utilizing family planning completely.

There is substantial evidence in the literature that expanding the selection of contraceptive techniques results in an increase in the overall prevalence of contraception. The availability of a variety of contraceptive methods enhances the likelihood that individuals will find a method that meets their needs (Jain *et al.*, 2012).

Research finds numerous aspects of service design that may actively dissuade kids from utilizing services. Cost, crowded waiting rooms, counseling spaces that do not provide privacy, appointment times that do not accommodate young people's work and school schedules, little or no accommodation for walk-in clients, and limited contraceptive supplies and options are just a few of the obstacles posed by the design of services. Hearing about these hurdles may discourage young people from visiting for the first time. The presence of these hurdles may deter their return (Godia *et al.*, 2013).

Long waiting periods and inconvenient clinic hours may hinder clients from receiving the necessary services. In Nigeria, Malawi, and Senegal, patrons expressed worry over lengthy wait times (Zaggi, 2014). Some clinics are closed during their scheduled hours of operation. In Kenya, it was discovered that although clinics were nominally open from 8 a.m. to 5 p.m., clinicians discouraged customers from visiting in the afternoon and frequently did not provide treatments to women who could only go in the afternoon (UNFPA, 2013).

Consequences of adolescent girls' non-use of contraceptives include unwanted pregnancy, unsafe abortion, mother and infant mortality, school dropout, diminished economic potential, and fewer educational accomplishments for the present and future generations (Hindinet *et al.*, 2016). In this regard, altering contraceptive behavior appears more feasible than altering adolescents' sexual activity (ICRW, 2014).

Contraceptive services can reduce injury, disease, and mortality related with childbirth, abortions, and sexually transmitted infections (STIs), including HIV/AIDS, by lowering unplanned pregnancies (Walker, 2012). The contraceptive effect on maternal mortality is greatest for women younger than 20. (Santelli, 2017). Contraception decreases the number of HIV/AIDS-related deaths, and the correct and continuous use of condoms can considerably reduce the rate of new infections (CDC, 2015).

Myths and misconceptions, as well as fear and rumors regarding contraceptive side effects among those who use them, may discourage or prevent adolescent girls from using contraceptives (Nishtaret *et al.*, 2013). A study conducted in Cameroon revealed that adolescent girls face barriers that prevent use and/or consistent correct use of contraception, even when they are able to obtain contraceptives: stigma surrounding non-marital sexual affairs and/or contraceptive use; fear of side effects; lack of knowledge on correct use; and factors contributing to discontinuation (such as reluctance to return for contraceptives because of negative first experiences with health care providers, ch (Wirsllyet *et al.*, 2019).

Kinaro revealed that service providers had negative attitudes about adolescent contraception and discouraged contraceptive usage by disseminating false information about the health implications of contraceptives (Kinaro, 2012). In addition, the usage of condoms tends to reduce over time in stable partnerships because they indicate a lack of trust (Chandra&Braet, 2014).

Attitudes, beliefs, and prejudices of providers about contraceptives reflect what providers genuinely believe, including their support or opposition to provision, as well as opinions that may influence distribution methods. According to research conducted in Tanzania, some family planning providers continue to limit access to contraceptives on the basis of age or marital status (WHO, 2018).

According to the World Health Organization, adolescent girls face significant barriers to accessing contraception, such as health workers' bias and/or unwillingness to recognize adolescent girls' sexo-reproductive health needs, and restrictive laws/policies regarding the provision of contraceptives based on age or marital status (WHO, 2018).

In addition, service providers can limit access to a family planning method due to their own biases towards the method or its delivery system. Provider bias, which arises when service providers believe they are in a better position to determine the most appropriate method for a client or are biased toward certain methods, may prevent women from adopting a method that is suitable for their circumstances and requirements (Nishtaret *et al.*, 2013). If patients do not obtain their preferred technique or service, or if they are turned away without a clear diagnosis, they may discontinue care.

Women are more likely to seek out and continue utilizing family planning services if they are treated with respect and courtesy, such as the provider's tone, demeanor, and speech patterns (Dehlendorf *et al.*, 2012). The attitude of healthcare providers toward delivering contraceptives to unmarried adolescents was demonstrated by their imposition of non-evidence-based age limitations and consent demands (Ahanonu, 2013). Similarly, in a South African study, nurses stereotyped adolescent sexuality and felt extremely uneasy administering contraception to adolescent girls. They frequently attempted to persuade teens who sought contraception to abstain from sexual activity. Additionally, parental consent was requested from adolescents before to providing contraceptive services, despite the fact that parental consent is not legally required for minors to receive contraception in South Africa (Williamson *et al.*, 2009). The majority of nurse-midwives providing sexual and reproductive health care in Kenya and Zambia approved of contraceptive use by sexually active girls and were willing to educate males on condom use, according to a separate study. However, the majority of nurse-midwives in both nations indicated that they would prefer advocate abstinence to unmarried adolescent boys and girls who request contraception than supply them contraceptives. Those who had received

continuing education on adolescent sexuality and reproduction tended to be more youth-friendly (Ahanonu, 2013).

2.6 Theoretical Framework

The theoretical framework is a specific collection of theories regarding a facet of human existence that provides a particular lens through which to evaluate a topic. They are the structure that directs research by depending on a formal theory to explain specific events and relationships in a consistent manner. Thus, one can assert that a theoretical framework is the basis of any research procedure. Consequently, a theoretical framework is regarded as the key component of the study plan.

This research is guided by two theories: the diffusion of innovations theory by Everett; and Behavioral Health Model theory.

2.6.1 The Diffusion of Innovation Theory

Rogers Everett observed in his book that the innovation itself, individual adopters, communication channels, time, and the social structure are the five factors that impact the spread and adoption of a new idea in a process that is largely dependent on human capital (Rogers, 2003). Rogers highlighted that there are elements that determine the degree to which an innovation will be embraced with regard to innovation itself. Such qualities include the relative advantage, which is the degree to which an innovation is superior to similar or competing innovations already on the market; Complexity, which is the degree to which innovation is difficult to learn and use; Compatibility, which is the degree to which innovation is easy to integrate or assimilate into one's life; Triability, which is the degree to which a person can easily experiment with an innovation; and Observability, which is the degree to which the benefits of the innovation can be observed.

Rogers observed that inventions that are superior to existing technology, simple, compatible, experimentable, and observable are more likely to be adopted. Individual adopters are the second factor affecting the uptake of technology. Rogers observed that the adoption rate of an innovation is influenced by the characteristics of the individual adopters. Ability and motivation were known to have a significant impact on the likelihood that a potential adopter would adopt an innovation. Potential adopters who are driven to adopt an innovation will likely make the necessary adjustments to do so. The symbolic significance of innovations can either encourage or inhibit adoption. Innovations with a good connotation/significance are more likely to be accepted than those with a negative connotation/significance, which influences motivation. Further, Rogers observed that potential adopters with more control over their decisions are more likely to adopt an invention than those with less control.

The communication channel is the third factor influencing technology adoption. For Rogers, communication is the process through which participants create and share knowledge in order to attain a common understanding, whereas a channel is the way by which a message is transmitted from its source to its recipient. Interpersonal communication and mass media (such as radio, television, and newspapers) are the two avenues of communication. Interpersonal channels involve communication in both directions between two or more individuals. The process of diffusion is very social and requires interpersonal communication ties. Thus, interpersonal mechanisms are more effective for creating or altering people's strong attitudes.

Time is the fourth factor influencing innovation uptake. He emphasized that innovations are not embraced immediately. Some ideas will require time to be adopted, but some innovations will be adopted in shorter time frames than others.

A social system is the final factor of influence. Rogers (2003) described a social system as a collection of interconnected units that collaborate to solve problems and achieve a common objective. He observed that non-conservative social units are typically more adaptable than conservative social systems.

2.6.2 The Behavioral Health Model

The consumption of health care services is contextualized in terms of sociocultural and economic factors. This paradigm postulates that predisposing, enabling, and need variables influence the utilization of a service, such as contemporary contraceptives. Predisposing factors, such as demographics, health beliefs, and social structures; enabling factors, such as the availability of health personnel and facilities, waiting time, quality of services offered, and health insurance coverage or cost of services; and need for care factors, which focuses on people's perceptions and evaluations of their health that motivate them to seek care (Azfredrick, 2016).

According to Philips *et al.*(1998) the model is based on elements that influence the decision-making process and takes into consideration economic status, travel coverage (distance), educational levels, individual happiness based on previously utilized services, and perceived service quality. According to Rosenthal *et al.*, 1992, the likelihood that adolescent girls and young women (AGYW) will use contemporary contraception depends on their perceptions of the dangers involved. Consequently, AGYW who perceive themselves to be at risk for unwanted pregnancies and STIs may be more inclined to take modern contraception than those who do

not perceive themselves to be at danger. Other social, environmental, topographical, administrative, and monetary factors that appear to affect people's health are required to expand on this concept (Maina, 2006). According to Pokhrel and Sauerborn (2004), household/individual and/or health system level characteristics must be considered. Thus, political, social, economic, and/or cultural issues, as perceived and understood by either the individual or the society, influence the motivations for health service consumption. In this instance, adolescent contraceptive use involves a review of health care service utilization that leads to an appreciation of the impact of health determinants.

On the basis of this theoretical foundation, it can be asserted that individual and contextual factors have a significant role in AGYW's usage of modern contraceptives. Individual characteristics include age, marital status, religion, ethnicity, amount of education, wealth status, and occupation, among others (Makola *et al.*, 2019). This study employs the Behavioral Health Model to investigate the factors influencing contraceptive use.

2.7 Conceptual Framework

This conceptual framework provides the expression of the relationships between the variables identified for study. These variables include Independent, Intervening and Dependent variables. (Miles & Huberman, 1994).

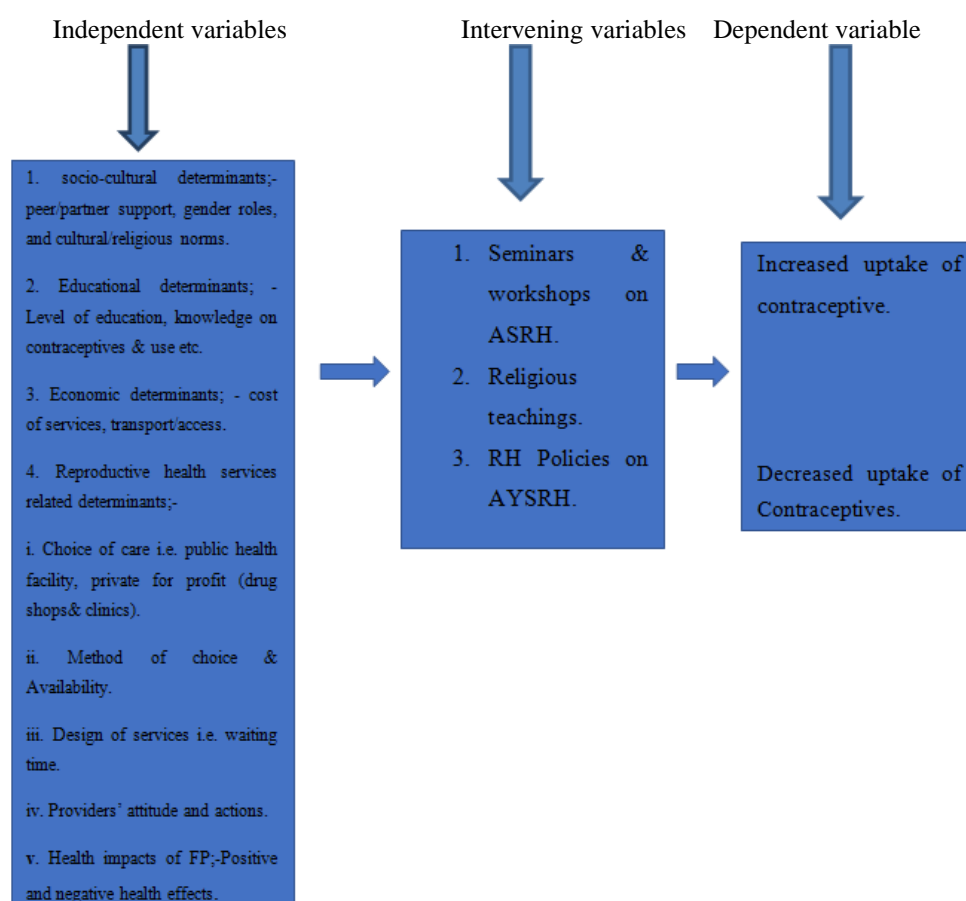


FIGURE 1: *Conceptual Framework showing determinants influencing uptake of contraceptives among adolescent girls*

2.8 Description of Relationships of Variables in the Conceptual Framework

Figure 1 shows that the Independent variables comprised of socio-cultural, educational, economic and reproductive health services related determinants with their specific thematic areas of focus for investigation. Data was collected in those areas and analysis was done hence the gap was established for areas of intervention with target of improvement. Intervening variables that were seminars and workshops on ASRH, Religious teachings and RH policies on AYSRH when recommendations regarding these are done appropriately then. The dependent variables will be achieved with main aim to attain positive changes. However the dependent variable can either be positive or negative or at time the situation may not change hence remain constant. (Williamson, *et al.*, 2009).

2.9 Summary of Literature Review

This chapter reviewed relevant related literature on the determinants of contraceptives uptake among adolescents which included: educational, socio-cultural, economic and reproductive health related determinants to contraception. It has shown the discussion on the theoretical framework that underpins the research and the Conceptual framework that guides the study. It has explained the relationships of variables in the conceptual framework.

III. RESEARCH METHODOLOGY

3.1 Introduction

This third chapter addresses the strategies utilized in this investigation. It covers the study methodology and demonstrates the tools and procedures used to collect data. This chapter focuses on the following topics: study area, research design, target population, study population, determination of sample size, inclusion and exclusion criteria, sampling method, sampling procedure, data collection instruments, pilot study, validity and reliability, data collection, data analysis, and ethical considerations.

3.2 Study Area

Teso North Sub County, which is located inside Busia County in western Kenya, served as the study region. It is bordered by Bumula Sub County to the east, Bungoma West to the north-east, Teso South to the south, Cheptais Sub County to the north, and Uganda to the west. It has an estimated population of 142,613 and a surface area of 265 km² per square kilometer (KNBS, 2019). Malaba East, Malaba Central, Malaba South, Angurai East, Angurai North, and Angurai South.

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3.3 Research Design

This study employed a descriptive study design that was cross-sectional in nature and utilized both quantitative and qualitative methods. The study was cross-sectional in nature because it collected data at a single point in time and from a subset of the entire population, thus providing a snapshot of the information representative of the entire population because they share the same characteristics of factors influencing the use of contraceptives among adolescents aged 12 to 19 years.

3.4 Study Population

This study population was a sub-set of the target population for carrying out the study. The study population was accessed from the 29 secondary girls' schools which are found in Teso-North, Busia County. These had adolescent girls estimated population of 5,756 girls aged 12-19 years.

3.4.1 Target population

This study's target audience comprised the complete group of persons the researchers were interested in studying and generalizing the study's results and conclusions to. This study's target group consisted of all sexually active adolescent girls aged 12 to 19 who had resided in Teso North Sub County for at least six months, with a predicted population of 14,770. (KHIS, 2020).

3.5 Sample Size Determination

The sample size was calculated by using Cochran formula; with target population of 14,770 and study population of 5,756 adolescent secondary school girls which is less than 10,000 subjects.

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

(Daniel, 1999)

Where;

n = Sample size,

Z = the value for the given confidence interval, standard normal deviate 1.96 at 95% confidence interval.

e= the desired level of precision or the margin of error; 0.05

p= the (estimated) proportion of the population which has attribute in question. (The proportion is known, 0.43). Contraceptive prevalence rate among the adolescent in Kenya was 42.9% \approx 43% (KDHS, 2014).

P = 0.43

q= constant usually set at 1-p (0.57)

Therefore;

$$n = \frac{(1.96^2 \times 0.43 \times 0.05)}{0.05^2}$$

n=376.6 \approx 377

To account for non-response, a 10% upward adjustment was calculated which equaled 38 respondents. The adjusted final sample size for the study was therefore = 415.

3.5.1 Inclusion Criteria

Consenting adolescent girls who attended secondary school, were between 12 and 19 years old, and had resided in Teso-North Sub County for the previous six months were included in the study.

3.5.2 Exclusion Criteria

Adolescent boys attending or not attending secondary schools, adolescent girls within the requisite age range but not in secondary schools, and adolescent girls within the needed age range but not in secondary schools, as well as those who did not reside in Teso North Sub County. Teenage girls who met the inclusion criteria but did not provide informed consent were excluded from the study.

3.6 Sampling Methods

The researcher employed both random and non-random sampling techniques to acquire data from subjects who were adolescent girls enrolled in secondary school. This survey comprised all 29 secondary schools for girls, both day/boarding and mixed day/boarding schools.

The selection of schools was conducted using a non-random sampling method; therefore, a purposive sampling technique was used to find the required secondary schools, however the selection of study respondents was conducted using a stratified random sample method using study forms as the strata. Stratified random sampling was utilized to produce a sample population that most accurately represented the whole population under study, ensuring that each subgroup of interest was adequately represented.

3.6.1 Sampling Procedure

Using a proportional sampling strategy, the number of adolescent girls per school was assigned using a stratified random sampling method to identify respondents. Each stratum was organized according to form I, II, III, and IV, and simple random selection was used to identify respondents from these strata. The lottery approach was used to select specific study participants from the forms; the researcher put numbers on slips of paper and placed them in a bowl; those who drew the desired numbers were selected as study participants.

3.6.2 Schools

All secondary girls' schools in Teso North Sub- County were identified and classified into divisions within the Sub County and wards. There were Amagoro division and Angurai division each had three wards.

All secondary girls' schools were involved and assessed on the uptake of contraceptives among adolescent girls. In total all the twenty nine schools identified were included in the study which had approximately 5,756 adolescent girls. The sample in each school was proportionately allocated to the number of adolescent girls per school.

$$Resp. = \frac{\text{School Limit}}{\text{Total Population}} \times \text{Samplesize}$$

$$Resp. = \frac{150}{5756} \times 415 = 10.8 = 11 \quad \text{School no. 1 Respondents} = 11$$

NB/ This the number that was divided among the four Forms I, II, III & IV proportionately

Table 3.1. Proportionate sampling.

Serial no.	Schools	No. of adolescent girls per school.	Proportionate allocated adolescent girls per school.
1.	MWARI MIXED DAY	150	11
2.	APOKOR MIXED DAY	180	13
3.	KAMURIAI MIXED DAY/BOARDING	300	22
4.	ONYUNYUR MIXED DAY	130	9
5.	KOCHOLIA MIXED DAY/BOARDING	250	18
6.	KEKALET MIXED DAY	140	10
7.	KAMOLO MIXED DAY	220	16
8.	AMAGORO GIRLS DAY/BOARDING	533	38
9.	ALBERT EKIRAPA MIXED DAY	190	14
10.	KENG'ATUNY MIXED DAY	145	10
11.	ADANYA MIXED DAY	146	10
12.	KAJEI MIXED DAY	189	14
13.	KATAKWA MIXED DAY	320	23
14.	BISHOP SULUMENT GIRLS BOARDING	302	22
15.	AKOBWAIT MIXED DAY	105	8
16.	OKULEU MIXED DAY	110	8
17.	AEDEMORU MIXED DAY	186	13
18.	CHANGARA MIXED DAY	126	9
19.	KAKEMER MIXED DAY	152	11
20.	KAKURIKIT MIXED DAY	124	9

21.	CHAMASIR MIXED DAY	122	9
22.	KATANYU MIXED DAY	113	8
23.	KOLANYA GIRLS BOARDING	424	31
24.	ABOLOI MIXED DAY/BOARDING	208	15
25.	MALABA MIXED DAY	212	15
26.	MODING MIXED DAY/BOARDING	205	15
27.	ODUYA OPRONG MIXED DAY	174	13
28.	KOKARE MIXED DAY	154	11
29.	KABUKUI MIXED DAY	146	10
TOTAL		5,756	415(SAMPLE SIZE)

3.7 Data Collection Instrument

Using a proportional sampling strategy, the number of adolescent girls were allotted to each school using a stratified random sampling technique. Each stratum was organized in accordance with form I, form II, form III, and form IV, and from these strata, simple random selection was used to identify respondents. The researcher put numbers on slips of paper and placed them in a bowl; individuals who drew the desired numbers were selected as study participants.

3.8 Pretest of the Study

A pre-test of this study was done to establish the feasibility, time, cost and statistical variability in an attempt to predict an appropriate sample size and improve upon the study design prior to performance of a full scale research project (Hulley *et al.*, 2007). A pre-test study was done to ensure the validity and reliability of the research instrument was realized. The questionnaires were pre-tested by being administered in 3 public secondary schools in Nambale Sub County which border the study area, whose characteristics was similar to the actual Teso North and locality that was Busia County. There was a total of 42 students who participated, selected 14 per school at random representing 10% of the sample size. The questionnaires were through face to face direct interviews of the participants who were encouraged in this research to make suggestions about the instructions, clarity of questions and relevance.

3.9 Validity and Reliability

These the processes of identifying whether the research is sensitive and reliable such that when the same research is done by another person or organization, then it would still produce the same results.

3.9.1 Validity

Validity is the extent to which an instrument measures what it purports to measure, that is, the theoretical concept (variable).

The validity of the questionnaire was based on internal validity by engaging expert opinion, who were sought by researcher to offer some professional advice on modification and improvement of data collection instruments. They helped in proper wording of the questions, language and structure check to avoid ambiguity. Validity was also realized after administration of the questionnaire which provided areas of adjustment of the questionnaire where areas of incompleteness and inconsistencies on the tool were adjusted.

3.9.2 Reliability

Reliability is the measure of the degree to which a research instrument yields consistent results on repeated trials (Mugenda&Mugenda, 1999). A pre-test was carried out involving 42 respondents who were not included in the actual sample to obtain data that was analyzed by SPSS and determined the reliability coefficient using Cronbach Alpha (α) 2004 of equal to or greater than 0.7 for all the study instrument. Cronbach's Alpha (α) Reliability Coefficient is a measure of internal consistency, that is, how closely related a set of items are as a group. The calculation using the SPSS yielded a reliability coefficient value of 0.856.

3.10 Data Collection

Primary data was collected using different data collection tools that were questionnaire for quantitative data, while focus group discussion guide was used to collect data for qualitative data.

Questionnaire were administered to respondents by trained research assistants and the data was collected through face to face interview. The 415 respondents were accessed from respective secondary schools that were proportionately allocated as well as simple random sampling was applied for each strata (form).

Focused Group Discussion guide (FGD) was used to direct and guide interview process, whereby the two (2) sessions were conducted by two discussants at two different schools representing each administrative Divisions; one discussant (Researcher) leading the questions or leading the session while the other one taking notes of the discussions. Each session had thirteen participants and during the session all COVID 19 Protocols were observed adhered to strictly, such as; ensuring physical distance of 1 meter a part and wearing of a face mask. Discussions took 45 minutes and the whole process of FGD was also voice recorded. After which transcription of the collected data were transcribed to ensure completeness and logical flow. This qualitative data was used to reinforce the quantitative findings in this study.

The whole process of data collection was done on voluntary understanding and anonymity was assured and maintained in the whole process. Before the start of this process of data collection at any level, informed consent

was sought and where consent was granted data collection process went ahead. The collected data were reviewed for cleaning to ensure accurateness and completeness of such data.

3.11 Data Analysis

Data entry, coding, cleaning, checking for errors and missing values was done using SPSS version 25. The unit of analysis was the adolescent girl student. Questionnaires for quantitative data was checked and cleaned manually daily for completeness and coded for appropriate computer entry by data clerks. Equivalent responses were pooled to arrange the responses in different categories. The independent variables comprised of the demographic, socio-cultural, educational, economic and reproductive health related characteristics/determinants. All the responses for these independent variables were categorized and coded. For 'yes' or 'no' responses, these were coded as '2' for 'no' and '1' for 'yes'. The dependent variable (have you used contraceptives) was binary and coded as '2' for 'no' and '1' for 'yes'.

Verbatim transcripts of the qualitative data from the focus group discussions were transcribed into Microsoft Word, and thematic content analysis was done based on the determinants influencing the uptake of contraceptives. The Quantitative data was managed by IBM Statistical Package for Social Scientists (SPSS) 25.0, summarizing it into univariate; percentages, proportions and frequencies, then bivariate; Chi-square test , coupled with correlation analysis were used to determine for possible association between variables.

At the univariate analysis, frequencies and proportions were computed. To test for correlations, a collinearity diagnostics tool in SPSS was used and variables with a variance inflation factor (VIF) of less than 5 were retained in the final model. At bivariate analysis, Chi-square tests and Fishers exact tests (where cells had frequencies of less than 5) were used to test for associations between the independent variables (determinants) and the dependent variable; p-values less than 0.05 were considered statistically significant. Statistically significant determinants at the bivariate analysis were progressed to the multivariate analysis stage. To establish the determinants of contraceptive uptake among the respondents and controlling for possible confounding, a multivariate analysis using the binary logistic regression under the generalized linear model approach was used. Adjusted odds ratios (AOR), 95% confidence intervals (CI) and p-values were reported. P-values of less than 0.05 were considered statistically significant.

3.12 Ethical Considerations

This work was approved by the University of Eastern Africa, Baraton- Research Ethics Committee following ethical evaluation. The National, Commission on Science, Technology, and Innovation (NACOSTI) granted this study permission to collect data, and permission to collect data was also sought from the Busia County Director of Education and the Teso North Sub-county Director of Education Officer, as well as from the respective principals of respective secondary schools. Before those over the age of 18 signed a consent form, informed consent was finally obtained from the respondents by providing them with sufficient information about the purpose of the study. Respondents under the age of 18 gave their approval to participate through their guidance and counseling instructor, who signed a consent form on their behalf. The respondents were told that the information they supplied in the questionnaire and during FGDs would not be shared with their instructors or parents on an individual basis, but rather in an aggregate and anonymous fashion. All information obtained at any given moment was always safeguarded and kept under lock and key. The issue of privacy was handled by the respondents' usage of classrooms during the period of data collection and by the absence of respondents' names on completed surveys in favor of unique number codes. The respondents' participation in the data gathering was likewise voluntary, and those who chose not to participate were able to opt out of the study. In addition, the researcher offered the respondents' contact information in case they required clarification on any subject.

IV. RESULTS

4.1 Introduction

This chapter covers data analysis and results presentation obtained from the data collected which is based on the study objectives. The preliminary data of the study involving socio-demographic characteristics of respondents is given.

4.2 Socio-Demographic Characteristics

Table 4.1 revealed that a total of 415 girls participated in the study and 70.3% (292/415) of the respondents were between 16 - 19 years of age and the rest between 12-15 years of age. This study also established that 41.0% (170/415) of the respondents were from mixed day schools, while 35.9% (149/415) of them were from the 'girls only boarding' with 6.2% (26/415) from the 'girls only day' school. This study revealed that 67.2% (279/415) of the respondents resided in rural areas and 99.0% (411/415) were single. On religion, Catholics and protestants were the majority at 43.8% (182/415) and 49.7% (206/415) respectively. It was also identified that 72.4% (301/415) these respondents stayed with their parents, followed by 26.6% (110/415) with guardians and 1.0% (4/415) stayed with partners.

Table 4.1 Socio-demographic characteristics of the students

Characteristic		Frequency (n = 415)	Percent (%)
Age (years)	12-15	123	29.7
	16-19	292	70.3
Class	Form 1	80	19.3
	Form 2	122	29.3
	Form 3	106	25.5
	Form 4	107	25.9
Type of school	Girls only day school	26	6.2
	Girls only boarding	149	35.9
	Mixed day school	170	41.0
	Mixed boarding school	70	16.9
Religion	Catholic	182	43.8
	Muslim	27	6.6
	Protestant	206	49.7
Residence	Rural	279	67.2
	Urban	53	12.8
	Peri-urban	83	20.0
Marital status	Single	411	99.0
	Married	4	1.0
Next of kin	Parent	301	72.4
	Guardian	110	26.6
	Partner	4	1.0

4.3 Socio-Cultural determinants On Contraceptives

Table 4.2 revealed that 47.2% (196/415) of the respondents had sexual partners and also thought that at their age they should use family planning. There was 23.4% (97/415) of the respondents reporting had received sex education at home. This study at the same time identified that 57.2% (237/415) of the respondents had discussed contraceptives with anyone. Decision makers for contraceptives uptake among the respondents were; 17.9% (74/415) were decision makers themselves, 16.2% (67/415) were sexual partner or boyfriend, 6.9 % (29/415) were peer friends, 1.4% (6/415) were parents/guardians and 57.6% (239/415) were those who never used contraceptives.

During Focused Group Discussion; it was also revealed that most of parents don't create time to talk to their adolescent girls concerning sexual reproductive health as respondents said that;

“Our parents don't have time for us to share about our sexual and emotional feelings, it's a taboo to talk about sex with our parents. We end up exploring this on our own with our friends and due to peerpressure, some of our fellows become pregnant. Others getSTIsand some of them dropoutofschools.” A Respondent FGD in Angurai Division.

Table 4.2 Socio- Cultural Determinants of Contraceptives

Descriptions		Frequency (n = 415)	Percent (%)
Has sexual partner	No	219	52.8
	Yes	196	47.2
Sex education at home	No	318	76.6
	Yes	97	23.4
Who decided on FP use for you	Myself	74	17.9
	Peers/Friend	29	6.9
	Partner/boyfriend	67	16.2

	Parent	6	1.4
	Never used	239	57.6
Do you discuss about contraceptives with anyone	No	178	42.8
	Yes	237	57.2
Do you shy away from obtaining contraceptive services	No	88	21.1
	Yes	327	78.9

4.3.1 Socio-cultural believes on Contraceptive use among Adolescents

Table 4.6 Shows believes on contraceptives use among adolescents, 37.6% (156/415) of the respondents believed that unmarried people who used contraceptives were promiscuous or sexually immoral, while 31.4% (130/415) believed contraceptive were for married people only, then 26.6% (110/415) said that were too young to use contraceptives. About 22.8% (95/415) of the respondents reported people should use contraceptives only if they regularly had sex and finally 17.6% (73/415) of them had a belief that young people who were sexually active should use contraceptives.

Table 4.3. Believes on contraceptives use among Adolescents

Characteristics	Frequency (n=415)	Percent (%)
Which statement do you think is true about contraceptives?		
Contraceptives are for married people	130	31.4
I am too young to use contraceptives	110	26.6
Unmarried people who use contraceptives are promiscuous or sexually immoral.	156	37.6
Young people who are sexually active should use contraceptives	73	17.6
People should use contraceptives only if they regularly have sex	95	22.8

4.4 Educational Determinants of Contraceptives

Table 4.4revealed that 81.0% (336/415) of the respondents heard about contraceptives and 72.4% (301/415) knew at least a contraceptive method. On contraceptives training, 14.1% (59/415) of the respondents had received formal training on contraceptives and their use. There was 23.4 % (97/415) of respondents who had received sex education at home. About 64.5% (268/415) of the respondents believed they could get pregnant as a result of having one unprotected sexual encounter.

Table 4.4: Contraceptives knowledge, Access and Affordability among adolescent girls

Descriptions		Frequency (n = 415)	Percent (%)
Has sexual partner	No	219	52.8
	Yes	196	47.2
Sex education at home	No	318	76.6
	Yes	97	23.4
Do you think your age should use FP	No	217	52.4
	Yes	198	47.6
Have you heard about contraceptives	No	79	19.0
	Yes	336	81.0
Do you know any contraceptive method	No	114	27.5
	Yes	301	72.4
Can a girl become pregnant from one unprotected sex	No	147	35.5
	Yes	268	64.5
Have you been trained on contraceptives and use	No	356	85.8
	Yes	59	14.1
Distance to nearest hospital for ASRH services	Less than 1 km	83	20.0
	1-5 km	129	31.0
	5-10 km	114	27.6
	more than 10 km	89	21.4
Are contraceptives expensive	No	147	35.5

	Yes	268	64.5
Are you able to access FP services at any time at home or school	No	365	87.9
	Yes	50	12.1
Do you know a place in community where can get contraceptives	No	120	29.0
	Yes	295	71.0
Do you shy away from obtaining contraceptive services	No	88	21.1
	Yes	327	78.9
Have you ever used contraceptives	No	293	70.7
	Yes	122	29.3

4.4.1 Contraceptives Utilization

Table 4.5 revealed contraceptive utilization among the adolescent girls. Out of 415 respondents who participated in this study, only 29.3% (122/415) of them were reported to have used a modern method of contraception. The most commonly used contraception methods were 53.0% (65/122) condoms, 24.7% (30/122) pills, 14.1% (17/122) injection Depo-Provera and 8.2% (10/122) was implant as a method of contraception was reported to had been used by the respondents.

Table 4.5: Contraceptive utilization

Characteristic	Frequency	%
Use of contraceptives (n=290)		
Yes	122	29.3
No	293	70.7
Contraceptive used (n=122)		
Condoms	65	53.0
Pills	30	24.7
Injection Depo	17	14.1
Implants	10	8.2

4.5 Economic Determinants of Contraceptives

Table 4.4 showed 31.0% (129/415) of the respondents stayed within 5km to the nearest hospital providing ASRH services, while 21.4% (89/415) stayed more than 10km away from health facilities offering ASRH services. In terms of affordability and accessibility, 64.5% (268/415) of respondents believed contraceptives were expensive and only 12.1% (50/415) of them believed they were able to access family planning services at any time at home or school. A form three adolescent girl from Amagoro division reported during FGDs, *“Wedon’t have time to visit the hospital clinic while at school or home and the environment is not good for us. Mixing with old women who some of them know us, will definitely look at us with bad eyes or report to our parents”*.

4.6 Reproductive Health Related Determinants of Contraceptives

Table 4.4 revealed that 71.0% (295/415) of the respondents knew at least a place in the community where they could get contraceptives. 78.9% (327/415) of the respondents shied away from obtaining contraceptive services. *“It is hard for us to visit hospital to seek for those services because we fear being seen by our relatives who some work there and others a lot go to seek the same services”*, reported by one of form four student from Angurai division during FGDs.

4.6.1 Reproductive Health Related Perceptions on Contraceptives non-use among adolescent girls

Table 4.4: shows adolescent girls perceptions on contraceptives non-use. 33.4% (139/415) of the respondents feared the side effect of contraceptives, 17.2% (71/415) of them felt that contraceptives were expensive to acquire. At the same time 13.5% (56/415) of the respondents believed contraceptives were for married people, as 13.1% (54/415) felt embarrassed to purchase or access the service providers. About 7.6% (32/415) of them had believed that contraceptives were for older people, while 4.8% (20/415) of them felt embarrassed to use contraceptives. Another 3.8% (16/415) of respondents had a notion that health care providers couldn’t allow them to use and 6.6% (27/415) had not engaged in sexual intercourse. Fear of contraceptives side effects and age factors played a big role among adolescent girls on non-use of contraceptives. This was also witnessed during a FGDs in one of the secondary school in Amagoro division. *“Am still too young to start using those things. When used by young girls can spoil the eggs and make them infertile when it reach time of marriage, they will not sire children. It can also make someone to bleed in excess leading to death.”* Reported by a 16 year old form two adolescent girl in one of the school in Amagoro division.

Table 4.6: Perceptions on contraceptives non-use

Characteristics	Frequency (n=415)	Percent (%)
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Your reason for not using contraceptives regularly		
Contraceptives are used by older people	32	7.6
Contraceptives are for married people	56	13.5
Contraceptives are expensive	71	17.2
I fear the side effects of using contraceptives	139	33.4
I feel embarrassed to use	20	4.8
I feel embarrassed to purchase or access the service providers.	54	13.1
Health care providers cannot allow me	16	3.8
Never engaged in sexual intercourse	27	6.6

4.7 Relationship between Determinants and Contraceptive Uptake

Table 4.7 revealed at the bivariate level, there was a statistically significant difference between girls aged 16-19 years (38.2%) compared to 12 - 15 years (8.1%) who used contraceptives (P<0.0001). Similarly, there were statistically significant differences between contraceptives use and the class level (with form 4s highest at 58.7% and form 1s lowest at 5.4%), type of school (mixed schools higher than girls only schools), residence (peri-urban highest at 48.3% while rural lowest at 22.6%), marital status (married at 100% and singles at 28.6%), next of kin (those staying with partner at 100% and 22.4% for those staying with parents), whether one had a sexual partner (56.2% for those with partner and 5.2% for those without partner), whether one gets sexual education at home/school against didn't get sexual education(39.7% vs. 26.1%), whether one discussed contraceptives with anyone against didn't discuss contraceptives with anyone (44.6% vs. 8.9%), whether one had been trained on contraceptive use against didn't train on contraceptive (54.8% vs. 25.0%), ability to access FP services at any time at home or school against not able to access FP services (54.3% vs. 25.9%) and whether one knew a place in the community where they could get contraceptives against don't knew a place to get contraceptives (38.8% vs. 6.0%) (P<0.05).

Table 4.7. Association between contraceptive use and socio-demographic characteristics, knowledge/education and access/affordability to contraceptives

		Have you used contraceptives?				Total	P-value
Factor		No	%	Yes	%		
Age (years)	12-15	113	91.9%	19	8.1%	123	<0.0001
	16-19	180	61.8%	112	38.2%	292	
Class	Form 1	76	94.6%	4	5.4%	80	<0.0001
	Form 2	99	81.2%	23	18.8%	122	
	Form 3	75	70.3%	31	29.7%	106	
	Form 4	44	41.3%	63	58.7%	107	
Type of school	Girls only day school	16	88.9%	2	11.1%	26	0.025
	Girls only boarding	115	77.3%	34	22.7%	149	
	Mixed day school	108	63.5%	62	36.5%	170	
	Mixed boarding school	44	63.3%	26	36.7%	70	
Religion	Catholic	132	72.4%	50	27.6%	182	0.767
	Muslim	20	73.7%	7	26.3%	27	
	Protestant	142	68.8%	64	31.3%	206	
Residence	Rural	216	77.4%	63	22.6%	279	0.001
	Urban	34	64.9%	19	35.1%	53	
	peri-urban	43	51.7%	40	48.3%	83	
Marital status	Single	293	71.4%	118	28.6%	411	0.025
	Married	0	0.0%	4	100.0%	4	
Next of kin	Parent	234	77.6%	67	22.4%	301	<0.0001
	Guardian	60	54.5%	50	45.5%	110	
	Partner	0	0.0%	4	100.0%	4	
Have a sexual partner	No	208	94.8%	11	5.2%	219	<0.0001
	Yes	86	43.8%	110	56.2%	196	
Do you get sex	No	235	73.9%	83	26.1%	318	0.031

Determinants of Contraceptives Uptake among Adolescent Girls between 12-19 Years of ..

education at home	Yes	58	60.3%	39	39.7%	97	
Do you discuss about contraceptives with anyone	No	161	91.1%	16	8.9%	177	<0.0001
	Yes	132	55.4%	106	44.6%	238	
Have you been trained on contraceptives and use	No	266	75.0%	89	25.0%	355	<0.0001
	Yes	27	45.2%	33	54.8%	60	
Distance to nearest hospital for ASRH services	Less than 1 km	57	69.0%	26	31.0%	83	0.896
	1-5 km	92	71.1%	37	28.9%	129	
	5-10 km	78	68.8%	36	31.3%	114	
	More than 10 km	66	74.2%	23	25.8%	89	
Do you find contraceptives expensive to buy	No	101	68.9%	46	31.1%	147	0.626
	Yes	192	71.7%	76	28.3%	268	
Are you able to access FP services at any time at home or school?	No	270	74.1%	95	25.9%	365	0.001
	Yes	23	45.7%	27	54.3%	50	
Do you know a place in community where one can get contraceptives?	No	113	94.0%	7	6.0%	120	<0.0001
	Yes	181	61.2%	114	38.8%	295	

P<0.05 statistically significant

4.8 Statistically Significant Determinants of Contraceptive Use

Table 4.8 indicated that controlling for all other determinants, educational level, residence, next of kin, having a sexual partner, whether one discussed contraceptives with someone else, whether one could access contraceptives at any time at home or school and whether one knew a place in the community where one could get contraceptives were statistically significant determinants for contraceptive use among the students. For instance, Form 4s were nine times likely to use contraceptives compared to Form 1s (AOR 8.9, 95%CI 2.0 - 39.7, P = 0.004). Girls from the peri-urban residence were nine times compared to those from rural residence (AOR 9.0, 95%CI 2.8 - 28.9, P<0.0001), staying with guardians was three times compared to staying with parents (AOR 2.7, 95%CI 1.2 - 6.1, P = 0.018), having a sexual partner was 16 times compared to not having a partner (AOR 16.4, 95%CI 5.8 - 46.6, P<0.0001), those discussing contraceptives with anyone were four times compared to those who did not discuss with anyone about contraceptives (AOR 4.2, 95%CI 1.7 - 10.7, P = 0.002), ability to access FP services at any time at home or school against not able to access FP services (AOR 3.4, 95%CI 1.3 - 9.2, P = 0.016) and knowing a place in the community where one can get contraceptives was five times compared to not knowing a place to access contraceptives (AOR 4.9, 95%CI 1.3 - 17.9, P = 0.017) to use contraceptives (Table 4.8).

Table 4.8. Statistically significant Determinants of contraceptive use among adolescent girls in Teso North, Busia County

Determinant		AOR	95%CI	P-value
Age (years)	12-15 (ref)	1		
	16-19	2.401	0.586 - 9.835	0.223
Class	Form 1 (ref)	1		
	Form 2	4.605	1.104 - 19.203	0.036
	Form 3	3.564	0.763 - 16.649	0.106
	Form 4	8.926	2.004 - 39.764	0.004
Type of school	Girls only day school	1.000		
	Girls only boarding (ref)	0.982	0.238 - 4.058	0.980
	Mixed day school	1.432	0.357 - 5.744	0.612
	Mixed boarding school	1.387	0.310 - 6.203	0.669
Residence	Rural (ref)	1.000		

Determinants of Contraceptives Uptake among Adolescent Girls between 12-19 Years of ..

	Urban	3.037	0.898	10.277	0.074
	Peri-urban	8.999	2.807	28.850	0.000
Next of kin	Parent (ref)	1.000			
	Guardian	2.677	1.180	6.071	0.018
	Partner	1			
Have a sexual partner	No (ref)	1.000			
	Yes	16.420	5.791	46.560	0.000
Do you get sex education at home	No (ref)	1.000			
	Yes	0.672	0.292	1.547	0.350
Do you discuss about contraceptives with anyone	No (ref)	1.000			
	Yes	4.223	1.662	10.728	0.002
Have you been trained on contraceptives and use	No (ref)	1.000			
	Yes	1.508	0.499	4.560	0.466
Are you able to access FP services at any time at home or school	No (ref)	1.000			
	Yes	3.402	1.258	9.198	0.016
Do you know a place in community where can get contraceptives	No (ref)	1.000			
	Yes	4.888	1.332	17.942	0.017

P<0.05 statistically significant

V. DISCUSSION

5.1 Introduction

In this chapter current articles are discussed and compared to the findings of this study Section two provides a discussion on the socio-demographic characteristics on contraceptive uptake among secondary school adolescent girls in Teso North, Busia County. Section three to six provides a discussion on determinants to contraceptive uptake among secondary school adolescent girls under study in Teso North, Busia County.

5.2 Socio-demographic characteristics

Contraceptive uptake among the adolescent girls in Teso North was low despite of a higher proportion of the adolescent girls having sexual partners, therefore they were considered sexually active. This rate was slightly low compared to a similar study conducted in Kenya which showed two third of Kenyan adolescents were sexually experienced (Ikamari&Towett, 2007). Having a sexual partner implied that the adolescent girls were sexually active and therefore they considered themselves at risk of becoming pregnant and hence they needed protection from unplanned pregnancy and STIs. This findings of this study agreed with KDHS, 2014; KNBS & ICF International, 2015) which reported that use of any contraceptive method was higher among sexually active and unmarried women.

The uptake of contraceptives increased with age among secondary school adolescent girls. An adolescent girl aged between 16-19 years or more were likely to use any contraceptive method as compared to their counterpart of lesser age. The finding of this study agreed with the findings of (Murigiet *al.*, 2016) which showed adolescent girls aged 18 years or more were likely to utilize contraceptives as compared to their counterparts of a lesser age.

Peri-urban residence was associated with a higher contraceptive use compared to the rural residence in this study. The findings of this study agreed with (Kenya National Bureau of Statistics (KNBS) and ICF International, 2015; Ochako *et al.*, 2016) which stated that uptake of contraceptives was higher among women in urban areas compared to the rural areas. This finding also agreed with (Paul *et al.*, 2015) who revealed that urban women were more likely to use contraceptives compared to their rural counterparts. According to (Okigbo *et al.*, 2015) they agreed that people in urban and peri-urban areas are more exposed to information through mass media on contraceptives and their use compared to their rural counterparts leading to this disparity.

5.3 Educational Determinants of Uptake of contraceptives

Educational level of adolescent girls have influence on the rate of uptake of contraceptives and that varies according to their different levels. This study established that majority of the respondents had heard about contraceptives, and a higher proportion of them knew at least a modern contraceptive method. Despite these high level of knowledge, just a few number of them had used any contraceptive method before yet almost half of them had a sexual partner. This finding of this study agreed with (UNFPA, 2010) which stated that availability of contraceptive choices for adolescents were in place, but uptake was low among sexually active adolescents which contributed to several factors associated with its low uptake.

Almost half of the respondents thought that at their age they should use family planning, as more than half of them believed they could get pregnant from one unprotected sexual encounter. This finding of this study agreed with (Apter, 2018) which stated that all methods are physiologically safe for adults are also physiologically safe for adolescents except the permanent methods of contraception. This calls for provision of age appropriate comprehensive sexuality education (AACSE), contraception counselling and emergency contraceptives in schools, health facilities and community as the respondents were afraid of unwanted pregnancy and contracting of sexual transmitted infections.

There was more than a third of respondents had inaccurate or incomplete information about sexuality and reproduction concerning one unprotected sexual encounter if it could lead to pregnancy. This study finding agreed with (Bankole&Malarcher, 2010) which showed that adolescents' lack adequate information about sexuality and reproduction. Lack of adequate information on sexuality was further established with (Binuet *et al.*, 2018; Tamang *et al.*, 2017) to predispose adolescent girls and young women (AGYW) to teenage pregnancies. Hence, this study calls for in cooperation of sexual reproductive health in school curriculum as per age appropriate for empowering adolescents with adequate knowledge on SRH.

Training of adolescents on contraceptives and their use reported a low rate with almost three quarter of respondents had not received sex education at home. It was established in the FGDs where one of adolescent girl reported of their parents lacked time for them to discuss matters of sexual and reproduction, alleging it to cultural taboos for parents to utter about sexual intercourse word in front of their children. Adolescent girls ended up discovering themselves by accessing incorrect information from fellow peers of which some was misguiding and led to teenage pregnancy, contracting STIs and some of them dropping out of school. This study findings agreed with (Kumar *et al.*, 2017) which stated that, a major factor associated with non-use of contraceptives was lack of knowledge on modern contraceptive methods or unmet need for contraceptives. Most adolescents also do not use contraceptives due to lack of knowledge about its use or even the type of method to use. It is high time for parents or guardians to take fore front role of counseling their adolescent girls on SRH to equip them with knowledge about sexuality.

There was statistically significant differences between contraceptive uptake and class level of respondents, where Form 4s were nine times likely to use contraceptives compared to form 1s. This study findings agreed with (Nyarko, 2018) which showed the odds of contraceptives use were higher among educated female adolescent as the level of education increased in Ghana.

Therefore, school-based sex education programs had been found to be successful in improving SRH knowledge and attitudes among young people (Shepherd *et al.*, 2010). Lack of comprehensive sex education in schools, home or youth centers predisposes adolescents to incorrect or deficient information about contraception (Odejimi& Young, 2014; Sidzeet *et al.*, 2017). A similar study conducted in Bangladesh reported low contraceptive use among the illiterate female adolescents as compared to literate female adolescents (Khan *et al.*, 2014).

There is a need to integrate the school teaching curriculum with adolescent and sexual reproductive health focusing on contraception. Evidence from a systematic review showed that the group using a modified integrated curriculum was more likely than the standard-curriculum group to use a contraceptive during sexual intercourse (OR 1.62), condom use during last sex (OR 1.91) or less frequent sex without a condom (OR 0.5). Additionally, the groups had increased knowledge of HIV and pregnancy prevention as well as sexual risk reduction and risk avoidance (abstinence- focused) (Lopez *et al.*, 2016). Consequently, a study in India in medical students recommended pre-service and in-service training in contraceptive counselling and sex education in order to increase women's access to evidence-based maternal healthcare services and avoid misconceptions on contraception (Hogmark *et al.*, 2013).

5.4 Socio-Cultural determinants of contraceptives

The study finding revealed almost half of respondents had sexual partners, therefore considered sexually active. In terms of decision making on uptake of contraceptive methods in the last time, it was established that a fifth of respondents made their own initiative while a sixth it was decided by their sexual partners. This still showed some influence by spousal or familial support of or opposition to family planning. This study finding agreed with (Ochakoet *et al.*, 2015) which showed that spousal approval for contraception use existed in the typical woman in Sub Saharan Africa, who still relied on the husband for key decision making including health care due to lack of empowerment economically. This calls for the empowerment of a girl child by provision of adequate information on SRH education and life skills in decision making about their own health and wellbeing.

It is believed from the study findings by a third of respondents that contraceptives were for married people only and almost two fifth of them reported that unmarried people who used contraceptives were regarded to be promiscuous or immoral. Those were misconceptions about contraceptives among respondents which misguided and discouraged them in uptake of contraception. This study findings agreed with (WHO, 2018) which found out contraceptives being seen as a product that should be used by not just adults, but married adults. Thus adolescents were not seen as a possible target for their use, ignoring the still large number of adolescents who

not only conceived but also contracted STIs (WHO, 2018). Another similar study (Wirsiyet *et al.*, 2019) in Cameroon revealed adolescent girls faced barriers preventing contraceptive uptake even when they were able to obtain contraceptives; stigma of non-marital sexual affairs and/or contraceptive use. Hence, there is need to create awareness in the communities on contraceptive uptake among adolescents by dispelling all the raised myths and misconceptions.

Adolescent girls who were able to discuss about contraceptives with anyone were four times more likely to use contraceptives compared to those who did not discuss with anyone about contraceptives. This study findings agreed with (Bhushanet *et al.*, 2021) which showed that contraceptives communication among peers led to three times more likely to use and among partners was five times more likely to use compared to those who did not discuss. However, this study showed that respondents staying with parents were less likely to use contraceptives compared to those who stayed with guardians. Parents are considered an important source of information and therefore this study calls for early parent-child communication in facilitating contraceptive use as evidenced by a study in South Africa (Zulu, 2019). The findings highlighted the need to consider the influence of social ties in the design of future family planning interventions and suggested that interventions which encourage interpersonal communication about contraception and targeted peer-based descriptive norms had the potential to impact uptake of contraceptives in the at risk communities.

5.5 Economic determinants of contraceptives

It was established that accessibility to contraceptives at any time, at home or school was significantly associated with increased contraceptives uptake that was three times more likely to use contraceptives by respondents if accessible to them. This study findings agreed with (Murigiet *et al.*, 2016) which showed that accessibility to contraceptives among respondents led them four times more likely to use in Kiambu County.

Majority of the respondents were ashamed of purchasing or accessing the service providers and some of those who were willing didn't had money to purchase contraceptives. Two third of the respondents believed contraceptives were expensive and only a third were able to access family planning services at any time at home or school.

Over three-quarter of the respondents shied away from obtaining contraceptives or sexual reproductive health services. This was well elaborated in the FGDs where it was reported that some respondents feared being seen by their relatives who work in health facilities or chemists and they didn't had time to visit those facilities while at school or at home. This study findings agreed with (Godiaet *et al.*, 2013) which found that reproductive health services were mostly inadequate and inaccessible to the adolescents either due to unavailability, unaffordability and the poor attitude from health care givers. This study findings therefore, calls for the county government through the MoH to create an enabling youths and adolescent friendly environment for accessibility of the SRH services.

The study findings established from FGDs showed poverty as a contributing factor to challenges facing most adolescent girls and uptake of contraceptives. It was reported by some respondents coming from poor families which couldn't afford to cater for their needs financially to purchase items like sanitary pads during their menstrual periods, uniform, stationeries and other personal effects. This with peer pressure forced some respondents to seek for help from boyfriends or older people like bodaboda operators who could provide them with their needs, hence end up in exchange of sexual intercourse without negotiation for condom use or protection which was at the liberty of the boyfriend. This study findings agreed with (Ikamari&Towett, 2007) which stated that those adolescent girls in Kenya coming from poor economic households were less likely to use contraceptives since they could not afford them. This calls for the ministry of education (MoE) and community based organization (CBOs) to put more priority needs in provision of menstrual hygiene services to schools which are in rural set ups, which are hit by high poverty index level to curb incidences of unplanned pregnancies and sexual transmitted infections among adolescent girls.

Interestingly, the cost of contraceptives was not a hindrance to its use among the respondents. This demonstrated that the contraceptives were readily available to school going adolescents and no measures of restrictions existed on who should receive the commodities and for what purpose. This could be attributed to the fact that contraceptives were offered at no cost in public health facilities in Kenya making them easily accessible for use. This study findings disagreed with (Asaoluet *et al.*, 2019) which demonstrated that women residing at areas with health facilities providing sexual reproductive health services at no cost were more likely to access those services in Kenya, Nigeria and Ghana. Therefore, there is need to strengthen contraceptive provision in Kenya, including targeted information and services to adolescent girls still in school as demonstrated by a study conducted in Kenya and Nigeria, which shows the two countries had the highest rates of emergency contraceptive use in sub-Saharan Africa (Morgan *et al.*, 2014).

5.6 Reproductive Health Related Determinants to Contraceptives

In contrast to the third of respondents who did not know where to locate reproductive health services, the majority of respondents knew where they could obtain these services. Knowing where to get reproductive health services, such as contraceptives, was five times more statistically significant for contraceptive use than not

knowing where to access these services. In Ghana, (Abdul *et al.*, 2021) found that teenagers' knowledge of where to access contraceptives in the community was a predictor of their contraceptive use. This result suggests the necessity to provide adolescents with enough information about safe locations where they can access contraceptive services.

Over three-quarter of respondents shied away from obtaining contraceptives or other sexual reproductive health services. This was established too from FGDs contributed by fear of their privacy due to overcrowded waiting places and long waiting times or being mixed up with older women who were like their parents in public FP clinics. This study findings agreed with (Godiaet *al.*, 2014 & Zaggi, 2014) which stated that design of RH services offered in public health facilities verses convenient schedules, privacy and waiting times affected the level of clients uptake of sexual RH services among the adolescents and youths. It therefore, calls for MOH through the county government of Busia to formulate Adolescent and youth-friendly services in all public health facilities by creation of youth-friendly corners with service charters updated or digitalization of SRH services for AGYW.

Three- fifth of respondents reported having negative attitude towards health care providers of RH services. This was further established in FGDs where it was said that some of the service providers were friendly to them especially the young, but old nurses looked at them with sharp and terrifying eyes which discouraged or put them off from expressing their sexual needs. This study findings agreed with (WHO, 2018) which showed that some family planning providers still restricted access to contraceptives based on age or marital status .Hence, there was need for public health facilities to ensure FP clinics adhere to provision of quality service delivery which includes clients' privacy and confidentiality, convenient schedules with reduced turnaround time and providers of services offer respectful and friendly environment favorable to adolescent sexual and reproductive care without creation of age biasness (WHO, 2017).Health care providers need to be capacity built in AGYW-SRH services to improve in adolescents contraception accessibility and uptake.

On health impacts of contraceptives, a third of the respondents feared the side effects of contraceptive use hence non-used. This was further established in FGDs where it was reported by a 16 year old respondent that at her age she could not use contraceptives because they can render her infertile. This kind of misinformation given to adolescents by opinion shapers discouraged them from access to contraception services. This study findings agreed with (Kinaro, 2012) who discovered that service providers had negative perceptions on adolescent contraception, discouraged contraceptive use through misinformation on the effects of contraceptives on adolescents' health. There is need to offer AACSE and contraception counselling at all levels in the community, households, schools and health facilities to create awareness among adolescent girls, which would help to address to misconceptions and misinformation to increase uptake of contraception.

Teenage pregnancy and its consequences are serious public health issues in rural western Kenya (Omoro *et al.*, 2018). The 2014 Kenya Demographic and Health Survey showed that Busia County had the highest teenage pregnancy rate and adolescents who had begun child bearing at 20.8% compared to the national rate of 18.1% (KNBS and ICF International, 2015). Therefore, to address this issue, schools should provide the best avenue so as to keep sexually active girls in schools and away from the increased risk of unwanted teenage pregnancy. Higher education levels are a crucial component to address the problem.

VI. CONCLUSSION AND RECOMMENDATIONS

6.1 Introduction

This chapter covers conclusions, recommendations and further research study made by the researcher which is based on the specific objectives and key study findings.

6.2 Conclusion

Contraceptive uptake among the adolescent girls in Teso North was low despite half of the girls being sexually active. Key determinants to contraceptive uptake in this study were socio-demographic, educational, socio-cultural determinants, economic determinants and reproductive health related services. Effective and sustainable interventions to improve access and uptake of contraception include integration of school teaching curriculum with adolescent and SRH focusing on contraception as per age appropriate comprehensive sexuality education (AACSE), enacting laws and policies requiring the provision of SRH education and contraceptive services for adolescent girls in schools and health facilities. Parental and community support of adolescent girls in provision of SRH and contraception education information to create awareness, by dispelling the myths and misconceptions existing about adolescents' contraception. The MoH in the county government of Busia to integrate AGYW- SRH services with other health services and providing contraception through a variety of outlets to increase the access and uptake of contraception by making the health services adolescent/youth-friendly.

6.3 Recommendations

The researcher made the following recommendations based on the study;

The MoE should revise its teaching curriculum to incorporate an integrated sexual reproductive health (SRH) education and contraception in the curriculum from form one as majority of these age groups were sexually active and at risk of unwanted pregnancy and sexually transmitted infections.

Parents and community opinion leader like community health volunteers (CHVs) should take a leading role in provision of sexual reproductive health and contraceptive education to adolescent girls and dispel the existing myths and misconceptions of adolescents' contraceptive uptake, since it was evidenced they don't create time for their adolescent children.

More community health organizations like community based organizations (CBOs) and Non-Governmental Organizations (NGOs) offering adolescents' and reproductive health services should target rural adolescent girls and schools which had a low contraceptive uptake/economic quintile level compared to the urban and peri-urban girls to create demand for contraceptive uptake and economic support.

The MOH through the county government of Busia should formulate Adolescents and Youth-Friendly Services in public health facilities, by creation of youth friendly corners or digitalization of SRH services for AGYW by use of mobile application platforms which are conducive for adolescent girls to improve on adolescents' contraceptive accessibility and also capacity building of its health care providers on SRH services components which is adolescent and youth-friendly.

6.4 Further Research

The study focused on the school going adolescent girls and therefore does not reference the total population of adolescents given that teenage pregnancy is high in this region. A good proportion of adolescents are out of school, therefore the researcher proposes that further study should be carried out capturing the entire adolescents' population in the region.

REFERENCES

- [1]. Abdi B, Okal J, Serour G, Temmerman M. "Children are blessing from God"- a qualitative study exploring the socio-cultural factors influencing contraceptive use in two Muslim communities in Kenya. *Reprod Health*.2020; 17:1-11.
- [2]. Adedini SA, Babalola S, Ibeawuchi C, Omotoso O, Akiode A, Odeku M. Role of religious leaders in promoting contraceptive use in Nigeria: evidence from the Nigerian urban reproductive health initiative. *Glob Health Sci Pract*.2018; 6(3):500-14.
- [3]. Adongo PB, Phillips JF, and Baynes CD: *Addressing men's concerns about reproductive health services and fertility regulation in a rural Sahelian setting of Northern Ghana: The "Zurugelu" Approach*. In *Critical Issues in Reproductive Health*. Edited by Kulczycki A. New York: Springer Books; 2013.
- [4]. Ahanonu, E. L. (2013). Attitudes of Healthcare providers towards Providing Contraceptives for unmarried Adolescents in Ibadan, Nigeria. *Journal of Family and Reproductive Health* Vol.8, No.1.
- [5]. Abdul-Razak Adam, John K Ganle, Benard Y Asare, Dian Baafi and Timothy S Letsa. *Risky sexual behaviors, contraceptive use and associated factors among unmarried female adolescents in an urban municipality in Ghana*. *African Journal of Reproductive Health* December 2021; 25(6): 39-40.
- [6]. APHRC, MOH, IPAS, Guttmacher Institute. (2013). Incidence and complications of unsafe abortions in Kenya: Key findings of a national study... Nairobi, Kenya: APHRC, MOH, IPAS, Guttmacher Institute.
- [7]. Apter D. Contraception options: Aspects unique to adolescent and young adult. *Best Pract Res Clin Obstet Gynaecol* 2018; 48:115-127. Epub 2017 Sep 28.
- [8]. Asaolu, I., Nuño, V. L., Ernst, K., Taren, D., & Ehiri, J. (2019). Healthcare system indicators associated with modern contraceptive use in Ghana, Kenya, and Nigeria: evidence from the Performance Monitoring and Accountability 2020 data. *Reproductive health*, 16(1), 1-10.
- [9]. Azfredrick EC. Using Anderson's model of health service utilization to examine use of services by adolescent girls in South-Eastern Nigeria. *Int J Adolesc Youth*.2016; 21(4):523-9.
- [10]. Bankole, A., & Malarcher, S. (2010). Removing Barriers to Adolescent Access to contraceptives Information and services. *Studies in FP*, 41 (2): 261-274.
- [11]. Best, J., & Kahn (1989). *Research in Education*. New Jersey: Prentice Hall.
- [12]. Bhushan, N. L., Fisher, E. B., Maman, S., Speizer, I. S., Gottfredson, N. C., Phanga, T., . . . Rosenberg, N. E. (2021). Communication, social norms, and contraceptive use among adolescent girls and young women in Lilongwe, Malawi. *Women & health*, 61(5), 440-45.
- [13]. Biddlecom A, Riley T, Darroch JE, et al. Future Scenarios of Adolescent Contraceptive use, cost and Impact in Developing Regions. Guttmacher Institute (2018).
- [14]. Binu W, Marama T, Gerbaba M, Sinaga M. Sexual and reproductive health services utilization and associated factors among secondary school students in Nekeme town, Ethiopia. *Reprod Health*.2018;15(1): 64.
- [15]. Bitzer J, Abalos V, Apter D, Martin R, Black A; Global CARE (Contraception: Access, Resources, Education) Group. Targeting factors for change: contraceptive counselling and care of female adolescents. *Eur J Contracept Reprod Health Care* 2016; 21: 417-430. Epub 2016 Oct 5.
- [16]. Blum RW et al., A conceptual framework for early adolescence: a platform for research, *International Journal of Adolescent Medicine and Health*, 2014, 26 (3):321-331.
- [17]. Brittain et al. Youth-friendly family planning services for young people: a systematic review update. *Am J Prev Med*.2018; 55(5):725-35. <https://doi.org/10.1016/j.amepre.2018.06.010>. Surveys. *Lancet Glob Health*.2019; /:e904-11.
- [18]. Campbell OM, Benova L, Macleod D, Goodman C, Footman K, Pereira AL, Lynch CA. Who, What, Where: analysis of private sector family planning provision in 57 low-and middle-income countries. *Tropical Med Int Health: TM & IH*, 2015; 20 (12): 1639-56.
- [19]. Casey SE, Gallagher MC, Kakesa J, Kalyanpur A, Muselemu J-B, Rafano-harana RV, Spilotros N. Contraceptive use among adolescent and young women in North and South Kivu, Democratic Republic of Congo: a cross-sectional population-based survey. *PloS Med*.2020; 17(3) e1003086.
- [20]. Center for Disease Control (2015). How condoms prevent HIV/AIDS. *CDC press Atlanta, USA*.

- [21]. Center for Reproductive Rights; UNFPA. (2010).The right to contraceptive information and services to women and adolescents. New York, USA: Center for Reproductive Rights; UNFPA.
- [22]. Chaaban, J., &Cunningham, W. (2011). Life expectancy: Measuring the economic gain of investing in girls: The girl effect dividend. Washington DC. World Bank.
- [23]. Chandra-Mouli.B., &Braet.K. (2014), February 17).Global Development Professionals Network. Retrieved September 30, 2014.from www.theguardian.com: <http://www.theguardian.com/global-development-professionals-network/2014/feb/17/access-to-contraception-birth-control>.
- [24]. Chandra-Mouli, V, McCarragher, D.R, Phillips,S.J, Williamson, N.E., &Hainsworth, G. (2014).Contraception for adolescents in low and middle income countries: needs, barriers and access. *Reproductive Health*, 11(1), 1-8. (2014).
- [25]. Chandra-Mouli V, Parameshwar PS, Parry M, et al. A never-before opportunity to strengthen investment and action on adolescent contraception and what we must do to make full use of it. *Reprod Health*.2017; 14(1):85.
- [26]. Cleland J, Harbison S, Shah IH. Unmet need for contraception: issues and challenges. *Stud Fam Plann*.2014. doi:10.1111/j.1728-4465.2014.00380.x
- [27]. Daniel WW (1999). Biostatistics: A Foundation for Analysis in the Health Sciences.7th edition. New York: John Wiley & Sons.
- [28]. Darroch JE, Woog V, Bankole A, Ashford LS. ADDING UP. Costs and benefits of meeting the contraceptive needs of adolescents.2018 ;(May 2016). <https://www.guttmacher.org/adding-it-up>.
- [29]. Darroch J, Woog V, Bankole A, Ashford L.S. adding it up: Costs and benefits of meeting the contraceptive needs of adolescents. Guttmacher Institute, New York (2016). Available from: <https://www.guttmacher.org/report/adding-it-meeting-contraceptive-needs-of-adolescents>.
- [30]. Darroch JE *et al.*, Adding it up: *investing in contraception and maternal and newborn health*, 2017.New York: Guttmacher Institute; 2017 [Available from: <https://www.guttmacher.org/fact-sheet/addingitup-contraception-mnh-2017>].
- [31]. Dehlendorf C, Levy K, Kelly A, Grumbach K, Steinauer J. Women’s preferences for contraceptive counselling and decision making. *Contraception*.2012.
- [32]. De Vargas NunesColl C, Fwerling F, Hellwing F, de Barros AJD: Contraception in adolescence: the influence of parity and marital status on contraceptive use in 73 low-and- middle-income countries. *Reproductive Health* 2019, 16(1):21.
- [33]. Dennis ML, Radovich E, Wong KLM, Owolabi O, Cavallaro FL, Mbizvo MT, Binagwaho A, Waiswa P, Lynch CA, Benova L. Pathways to increased coverage: an analysis of time trends in contraceptive need and use among adolescents and young women in Kenya, Rwanda, Tanzania and Uganda. *Reproductive Health*.2017; 14(1): 130.
- [34]. Doyle AM, Mavedzenge SN, Plummer ML, Ross DA. The sexual behavior of adolescents in sub Saharan Africa: patterns and trends from national surveys Revue: Comportment sexuel des adolescents en Afrique subsaharienne: profilset tendencies dans les enquetesnationales Revision: El comportamiento sexual. *Trop Med Int Heal*.2012; 17:796-807. Available from:<http://dx.doi.org/10.1111/j>.
- [35]. Edelman A, Micks E, Gallo MF, Jensen JT, Grimes DA. Continuous or extended cycle vs. cyclic use of combined hormonal contraceptives for contraception. *Cochrane Database Syst Rev*.2014; 7, CD004695.
- [36]. Engelman R, Rosen JF, Wong, Sylvia. The power of 1.8 billion. Adolescents, youth and the transformation of the future. UNFPA.2014 State of world population.1.8 billion.2014.
- [37]. Family Planning: A Global Handbook for Providers.2018 World Health Organization and John Hopkins Bloomberg School of Public Health.
- [38]. Ganchimeg T, Mori R, Ota E, Koyanagi A, Gilmour S, Shibuya K, et al. Maternal and Perinatal outcomes among nulliparous adolescents in low and middle-income countries: a multi-country study. *BJOG* 2013; 120: 1622-33.
- [39]. Global Press Institute (2011). Global Press Journal. *Kenya clash Debate to bring sexeducation into schools*.
- [40]. Godia P, Olenja J, LavussaL, J., Quinney D., Hofman J &Broek N. (2013, 11). Sexual reproductive health services provision to young people in Kenya; health service providers’ experiences. *BMC Health Service Research(Impact factor: 1.77)*, 13(1):476.[https://dx.doi.org/10.1016/s0968-8080\(06\)27231-8](https://dx.doi.org/10.1016/s0968-8080(06)27231-8).
- [41]. GoK (2007). National Reproductive Health Policy.
- [42]. Hassoun D. Natural Family Planning methods and barrier.CNGOF Contraception guidelines. *GynecolObstetFertil Senol*.2018; 46:873-82.
- [43]. Hogmark, S., Klingberg-Allvin, M., Gemzell-Danielsson, K., Ohlsson, H., & Essén, B. (2013). Medical students’ knowledge, attitudes and perceptions towards contraceptive use and counselling: a cross-sectional survey in Maharashtra, India. *BMJ Open*, 3(12), e003739.
- [44]. Hounton S, Barros AJD, Amouzou A, Shiferaw S, Maiga A, Akinyemi A, et al.Patterns and trends of contraceptive use among sexually active adolescents in Burkina Faso, Ethiopia and Nigeria: Evidence from cross-sectional studies.*Glob Health Action*.2015;8(1):29737 [cited 2018 Jan 22] Available from: <https://www.tandfonline.com/doi/full/10.3402/gha.v.29737>.
- [45]. Hulley, S., Cummings, S., & Browner, W. (2007). *Designing Clinical Research* (3rd ed) .Philadelphia P.A: Lippincott Williams and Wilkins.
- [46]. Jain A K, Ramarao S, Kim J, and Costello M. Evaluation of an Intervention to improve quality of care in family planning programme in the Philippines *BiosocSci* 2012; 44(1):27-41.
- [47]. Kennedy E, Gray N, Azzopardi P, Creati M. Adolescent fertility and family planning in East Asia and Pacific: a review of DHS reports. *Reprod Health*.2012; 8:11. Available from:<http://dx.doi.org/http://doi.org/10.1186/1742-4755-8-11>.
- [48]. Kenya Human Rights Commission (KHRC) and Kenya Reproductive Health and Rights Alliance (KRHRA). (2010).Teenage pregnancies and unsafe abortions. *Journal on unsafe abortions in Kenya*.941, 60-65.
- [49]. Kenya National Bureau of Statistics (KNBS) and ICF International. (2015). *Kenya Demographic and Health Survey (KDHS) 2014*. Retrieved from <https://dhsprogram.com/pubs/pdf/fr308/fr308.pdf>.
- [50]. Kenya National Bureau of Statistics. (2019).Kenya Demographic Health Survey 2019.
- [51]. Khan MM, Hossain ME, Hoq MN. Determinants of contraception use among female adolescents in Bangladesh. *Asian Soc Sci*.2012; 8:181-91.KNBS. (2014). Kenya Demographic and Health Survey 2014.
- [52]. Kinaro, J.W. (2012). Adolescent Perceptions towards Contraceptive Use in Nairobi. Nairobi.
- [53]. KHIS. (2020, August 27). Khis. Retrieved from khis website: <http://www.hiskenya.org>.
- [54]. KHIS. (2021, July 27). Khis-pivot. Retrieved from khis website: <http://www.hiskenya.org>.
- [55]. Krugu JK, Mevissen FE, Prinsen A, Ruitter RA, Who’s that girl? A qualitative analysis of adolescent girls’ views on factors associated with teenage pregnancies in Bolgatanga, Ghana. *Reprod Health*.2016; 13:39.
- [56]. Kumar, Dinesh and Kapoor Gitanjali. “Menstrual hygiene: knowledge and practice among adolescent school girls in rural settings”. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, vol, 6, no. 3, Mar. 2017.

- [57]. Lebesse RT, Maputle SM, Ramathuba DU, Khoza LB. Factors influencing the uptake of contraception services by Vatsonga adolescents in rural communities of Vhembe District in Limpopo Province, South Africa. *Heal SA Gesondheid*.2013; 8(1):6. Available from:<http://dx.doi.org/10.4102/>.
- [58]. Li Z, Patton G, Sabet, Zhou Z, Subramanian SV, Lu C. Contraceptive use in adolescent girls and adult women in low-and-middle-income countries. *JAMA Netw Open*.2020; 3(2): e19214337.
- [59]. Loaiza E, Liang M. Adolescent pregnancy: A review of Evidence. New York: United Nations Population Fund, 2013.
- [60]. Lopez, L. M., Bernholc, A., Chen, M., & Tolley, E. E. (2016). School- based interventions for improving contraceptive use in adolescents. *Cochrane Database of Systematic Reviews*(6).
- [61]. Makola L, Mlangeni L, Mabaso M, Chibi B, Sokhela Z, Silimfe Z, et al. Predictors of contraceptive use among adolescent girls and young women (AGYW) aged 15 to 24 years in South Africa: results from the 2012 national population-based household survey. *BMC Women's Health* 2019; 19(1): 158.
- [62]. Maina, M (2006). Financing and Delivery of Health care in Kenya: Do the poor really benefit from public health spending? IPAR Discussion paper series No.084/2006.
- [63]. McCleary-Sills A., Sexton M., Petroni S., et al. ICRW; Washington DC: 2014. Understanding the adolescent family planning evidence base. [https:// www.icrw.org/wp-content/uploads/2016/10/FINAL-Understanding-the-Adolescent- Family-Planning- Evidence- Base- 7.30](https://www.icrw.org/wp-content/uploads/2016/10/FINAL-Understanding-the-Adolescent-Family-Planning-Evidence-Base-7.30).
- [64]. Miles, M., & Huberman, A. (1994). *Qualitative Data Analysis* (2nd edition). In M.Miles, & A. Huberman. *Qualitative Data analysis (p.18) Thousand Oaks, CA: Sage publications*.
- [65]. M.J. Hindin et al. / *Journal of Adolescent Health* 59 (2016) S8-S15.
- [66]. MoH (2007). National Reproductive Health Policy (pp.1-80).
- [67]. MoH (2015). National Adolescent Sexual and Reproductive Health Policy.
- [68]. MOH (March, 2005). *Family Planning Guidelines for Service Providers*. Division of Reproductive Health.
- [69]. Montagu D, Goodman C. Prohibit, constrain, encourage or purchase: how should we engage with the private health-care sectors? *Lancet*.2016; 6736:1-9.
- [70]. Morgan, G., Keesbury, J., & Speizer, I. (2014). Emergency contraceptive knowledge and use among urban women in Nigeria and Kenya. *Studies in Family Planning*, 45(1), 59-72.
- [71]. Mugenda, O.M., & Mugenda, A.M. (1999). *Research Methods; Qualitative and Quantitative Approach*. Nairobi: Acts Press.
- [72]. Munakampe MN, Zulu JM, Michelo C. Contraception and abortion knowledge, attitudes and practices among adolescents from low and middle-income countries: a systematic review. *BMC health services research*. 2018; 18(1):909.
- [73]. Murigi, M., Butto, D., Barasa, S., Maina, E., & Munyalo, B. (2016). Overcoming barriers to contraceptive uptake among adolescents: the case of Kiambu County, Kenya. *Journal of biosciences and medicines*, 4(09), 1.
- [74]. Naz, R. Sex Education in Fiji. *Sexuality & Culture* 18, 664-687 (2014). Available from: <https://doi.org/10.1007/s12119-013-9204-3>.
- [75]. Nishtar, N. A., Sami, N., Alim, S., Pradhan, N., Hasnain, F.U. (2013). Determinants of contraceptives use amongst youth: an exploratory study with family planning service providers in Karachi Pakistan. *Global Journal of Health Science*, 5(3), 43108.
- [76]. Nketiah-Amponsah E, Samuel Ampaw and Priscilla TwumasiBaffour. Socioeconomic determinant of use and choice of modern contraceptive methods in Ghana. *Tropical Medicine and Health* (2022) 50:33.<https://doi.org/10.1186/s41182-022-00424-5>
- [77]. Nyarko SH. Prevalence and correlates of contraceptive use among female adolescents in Ghana. *BMC Womens Health* [Internet].2015; 15(1):60. [Cited 2018 Jan 19] Available from:<http://dx.doi.org/https://doi.org/10.1186/s12905-015-0221-2>.
- [78]. Obasohan PE. Religion, ethnicity and contraceptive use among reproductive age women in Nigeria. *Intl J MCH AIDS*. 2015; 3(1): 65.
- [79]. Ochako R., Mbondo M, Aloo S, Kaimenyi S, Thompson R, Temmerman M et al. Barriers to modern contraceptive methods uptake among young women in Kenya. A qualitative study. *BMC Public Health* .2015;15(1):118.[cited 2018 Jan 22] Available from:<http://bmcpublichealth.biomedcentral.com/article/https://doi.org/10.1186/s12889-015-1483-1>.
- [80]. Ochako, R., Askew, I., Okal, J., Oucho, J., & Temmerman, M. (2016). Modern contraceptive use among migrant and non-migrant women in Kenya.
- [81]. Odejimi O, Young DB. A policy pathway to reducing teenage pregnancy in Africa. *Journal of Human Growth and Development*.2014; 24(2): 135-41.
- [82]. Okigbo, C. C., Speizer, I. S., Corroon, M., & Gueye, A. (2015). Exposure to family planning messages and modern contraceptive use among men in urban Kenya, Nigeria, and Senegal: a cross-sectional study. *Reproductive health*, 12(1), 1-11.
- [83]. Omoro, T., Gray, S. C., Otieno, G., Mbeda, C., Phillips-Howard, P. A., Hayes, T., . . . Gust, D. A. (2018). Teen pregnancy in rural western Kenya: a public health issue. *International Journal of Adolescence and Youth*, 23(4), 399-408.
- [84]. Pamela M. Godia, Joyce M Olenja, Jan J Hofman and Nynke Van den Broek. *BMC Health Services Research* 2014,14:172.<http://www.biomedcentral.com/1472-6963/14/172>.
- [85]. Pandey. Ajay; Sharma, Richa. Determinants of maternal and child health care services. *GSTF Journal of Law and Social Sciences (JLSS)*; Singapore Vol.1, Iss.2, (July 2012):12-18.
- [86]. Palamuleni M. Trends and determinants of contraceptive use among female adolescents in Malawi.2017; 5239-350.
- [87]. Patton GC, Sawyer SM, Santelli JS, Ross DA, Afifi R, Allen NB, et al. Our future: a Lancet communication on adolescent health and wellbeing. *Lancet* 2016; 387(10036):2423-78.[https://doi.org/10.1016/S0140-6736\(16\)00579-1](https://doi.org/10.1016/S0140-6736(16)00579-1).
- [88]. Paul, B., Ayo, A. S., & Ayiga, N. (2015). Rural-urban contraceptive use in Uganda: evidence from UDHS 2011. *Journal of Human Ecology*, 52(3), 168-182.
- [89]. Phillips, K.A, Morrison, K.R., Andersen, R., & Aday, L.A. (1998). Understanding the context of Health care Utilization: Assessing Environmental and Provider Related variables in the Behavioral Model of Utilization. *Health services Research*, 33 (3 pt 1), 571-596.
- [90]. Pokhrel, S. & Sauerborn, R. (2004). Household Decision Making on child Health care in Developing countries: The case of Nepal. *Health policy & planning*, 19 (4), 218-233.
- [91]. Potter J, Rubin S.E & Sherman P (2014). Fear of Intrauterine Contraception among adolescents in New York City. *Contraception*, 89(5), 446-450.
- [92]. Rattan J, Noznesky E, Curry DW, Galavotti C, Hwang S, Rodriguez M, Rapid contraceptive uptake and changing method mix with high use of long-acting reverse contraceptives in crisis-affected populations in Chad and the Democratic Republic of Congo. *Glob Health Sci Pract*.2016; 4(supplement 2):S5- S20.
- [93]. Rogers EM. *Diffusion of innovations*. 5. New York: Free Press; 2003.
- [94]. Rosenthal DA, Hall C, Moore SM. AIDS, adolescents and sexual risk taking; a test of the health belief model. *Aust Psychol*.1992; 27(3): 166-71.
- [95]. Santelli, J. (2017). Explaining Recent Declines in Adolescent pregnancy in the United States. The contribution of Abstinence and improved contraceptive use. *American Journal of Public Health*, 97, 1-10.

- [96]. Shepherd, J., Kavanagh, J., Picot, J., Cooper, K., Harden, A., Barnett-page, E. (2010). The effectiveness and cost-effectiveness of behavioral interventions for the prevention of Sexually Transmitted Infections in young people aged 13-19: A systematic review and economic evaluation. *Health Technology Assessment*, 14, 1-230.
- [97]. Sidze EM, Stillman M, Keogh S, Mulupi S, Egesa CP, Leong E, et al. From paper to practice: sexuality education policies and their implementation in Kenya. New York: Guttmacher Institute. 2017.
- [98]. Sung S, Abramovitz A. *Natural Family Planning*. Treasure Island, FL: Stat Pearls; 2020.
- [99]. Tamang L, Raynes- Greenow C, McGreechan K, Black K. Factors associated with contraceptive use among sexually active Nepalese youths in the Kathmandu Valley. *Contracept Reprod Med*. 2017; 2(1):64.
- [100]. The Kenyan Constitution. (2010). Retrieved from www.kenyaconstitution.org.
- [101]. Titiloye MA, Ajuwon AJ. Knowledge and quality of adolescents reproductive health communication between parents and their adolescent children in Ibadan, Nigeria. *Journal of Public Health in Africa*. 2017;8(1).
- [102]. Towett, R., & Ikamari, L. (2007). Sexual initiation and contraceptive use among female adolescents in Kenya.
- [103]. Trussell J, Aiken ARA, Micks E, Guthrie KA. Efficacy, safety, and personal considerations. In: Hatcher RA, Nelson AL, Trussell J, Cwiak C, Cason P, Policar MS, Edelman A, Aiken AKA, Marrazzo J, Kowal D, eds. *Contraceptive technology*. 21st ed. New York, NK: Ayer Company Publishers, Inc., 2018.
- [104]. NCPD, & PSRI. (2013). Kenya population situation Analysis. Nairobi: GOK.
- [105]. UNFPA. (2013). The state of the world report 2013: Focus on adolescent pregnancies. London: United Nations.
- [106]. UNFPA. (2013). Motherhood in Childhood: Facing the challenges of adolescent pregnancy (The state of world population). Retrieved from <https://www.unfpa.org/publications/state-world-population-2013>.
- [107]. UNFPA: Center for Reproductive Rights (CRR). (2010). Right to Contraceptive Information and Services for Women and Adolescents. New York: UNFPA: Center for Reproductive Rights.
- [108]. United Nations Children's Fund. (2013). Towards an AIDS Free Generation-Children and AIDS: Sixth Stock Taking Report. New York: UNICEF.
- [109]. UNICEF. Adolescent Demographics UNICEF Data. 2016. Available at <https://data.unicef.org/topic/adolescents/overview/:2016:2016>.
- [110]. UNICEF, UNWomen. Plan International. A new era for girls: taking stock of 25 years of progress. UNICEF, New York (2020). Available from: <https://www.unicef.org/reports/news-era-for-girls-2020>.
- [111]. USAID. HIP briefs. Adolescent-friendly contraceptive services: mainstreaming adolescent-friendly elements into existing contraceptive services USAID, Washington DC (2015). Available from: <https://www.fphighimpactpractices.org/briefs/adolescent-friendly-contraceptives-services/>.
- [112]. Walker, J. A. (2012). Early marriage in African-Trends, Harmful Effects and Interventions. *African Journal of Reproductive Health*, 16(2), 231-240.
- [113]. Williamson, Lisa M, Alison Parkes, Daniel Wight, Mark Petticrew, and Graham J. Hart. 2009. "Limits to modern contraceptive use among young women in developing countries: a systematic use in South Africa." *Reproductive Health Matters* 14 (27):109-118.
- [114]. Wirsly FS, Nsagha DS, Njajou OT, et al. Determinants of Reproductive Health Needs of Adolescent Girls in Africa. *African Journal of Integrated Health* 8 (2018): 7.
- [115]. Wirsly FS, Nsagha DS, Njajou OT, et al. Determinants of sexo-Reproductive Health Needs of Adolescent Girls in the Kumbo West Health District of Cameroon. *Journal of Environmental Science and Public Health* 3 (2019):28.
- [116]. World Health Organization (WHO). (2006). Pregnant Adolescents: Delivering on Global Promises of Hope.pdf. Retrieved from: <https://whqlibdoc.who.int/publications/2006/9241593784-eng.pdf>.
- [117]. World Health Organization (WHO). Family planning/ Contraception (2019).
- [118]. World Health Organization (WHO). Adolescent pregnancy [Internet]. 2018[cited 2019 Apr 9]. Available from: <https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy>.
- [119]. World Health Organization (WHO). Engaging young people in their own care is key to improving adolescent health (2017).
- [120]. World Health Organization. Global health estimates 2013 summary tables; DALYs, YLLs and YLDs by cause, age and sex by WHO regional group and World Bank income classification, 2000-2012 (provisional estimates). Geneva: World Health Organization; 2014.
- [121]. World Health Organization (WHO). Adolescent pregnancy (2018).
- [122]. World Health Organization. Adolescent pregnancy. Geneva. [cited 2020 Jan 31] Available from: <https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy>.
- [123]. World Health Organization. Adolescents: health risks and solutions. In: Fact sheet No. 345. Geneva: World Health Organization; 2014.
- [124]. World Health Organization Department of Reproductive Health and Research (WHO/RHR) and John Hopkins Bloomberg School of Public Health/ center for Communication Programs (CCP). Family Planning: A Global Handbook for Providers (2018 update). Baltimore and Geneva: CCP and WHO; 2018.
- [125]. World Health Organization. Adolescence: A period needing special attention. Age-not the whole story. Last Accessed date: Jan 5, 2020. Available from: <https://apps.who.int/adolescent/second.decade/section2/page2/age-not-the-whole-story.html>.
- [126]. World Health Organization. Family Planning Fact Sheet No.351. Updated May 2013. Available at https://www.who.int/mediacentre/factsheets/fs_351/en/.
- [127]. World Health Organization (WHO). *Health for the world's adolescents: a second chance in the second decade [multimedia online report]*. Geneva: WHO; 2014[cited 2015 Aug 4]. Available from: https://www.who.int/maternal_child_adolescent/topics/adolescence/second-decade/en/
- [128]. WHO: Preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries: what the evidence says. Geneva: WHO; 2012. Available from http://www.who.int/maternal_child_adolescent/documents/preventing_early_pregnancy/en/.
- [129]. Woog V, Singh S, Browne A, Philbin J. Adolescent women's need for and use of sexual and reproductive health services in Developing Countries. New York: Guttmacher Institute, 2015.
- [130]. Zaggi H. (2014) Contraceptive Knowledge and Practices among students in Federal polytechnic Kaduna, Nigeria: An Exploratory Study. Available at: <https://scholar.sun.ac.za/handle/10019.1/96083>.
- [131]. Zaw PPT, Liabsuetrakul T, McNeil E, Htay TT. Gender difference in exposure to SRH information and risky sexual debut among poor Myanmar youths. *BMC Public Health*. 2013; 13(1):1122.
- [132]. Zulu, B. S. (2019). *Factors facilitating and inhibiting contraceptive use among White University students in Durban South Africa*.