MODERN CONTRACEPTION UTILIZATION AMONG ADOLESCENT GIRLS IN NTCHEU DISTRICT, MALAWI

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A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTERS DEGREE OF PUBLIC HEALTH, REPRODUCTIVE HEALTH OPTION IN THE SCHOOL OF PUBLIC HEALTH AND APPLIED HUMAN SCIENCES OF KENYATTA UNIVERSITY

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DECLARATION

I hereby declare that this is my own work towards the Master of Public Health, Reproductive Health option to the best of my knowledge. It therefore does not contain any other previously published materials which have been accepted by Kenyatta University and elsewhere except where acknowledgment have been made within the text.

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DEDICATION

To my dear children; Hope and Chisomo Simbi.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CEDAW	The Convention on Elimination Against all forms of Discrimination against Women
CREHPA	Centre for Research on Environmental Health and Population Activities
EC	Emergency Contraception
FGD	Focus Group Discussion
HDS	Demographic and Health Survey
HIV	Human Immunodeficiency Virus
ICRW	International Center for Research on Women
IUDs	Intra Uterine Devices
SDGs	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences
STIs	Sexually Transmitted Infections
UN	United Nations
UN DESA	United Nations Department of Economics and Social Affairs
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organization

OPERATIONAL DEFINITIONS

Adolescent:	An adolescent is any person between the ages of 10-19 years.
Adolescent fertility rate:	Number of births per 1000 adolescents.
Contraception:	A deliberate use of artificial methods or other techniques to prevent pregnancy.
Contraceptives:	Devices or drugs that prevent pregnancy.
Emergency contraception:	Methods of contraception that can be used to prevent pregnancy.
Modern contraception:	This is a product or medical devices that was technologically designed to interfere with production from acts of sexual intercourse. These include; pills, injectables and condoms (short acting), Implants and intrauterine devices (long acting) and Vasectomy and Tubal Tubal Ligation (permanent) after sexual intercourse and is recommended for use within specified period of time (72-120 hours) but are more effective the sooner they are used after the act of intercourse.
Reproductive health:	The state of complete physical, psychological, spiritual and social Wellbeing not merely absence of disease or infirmity in all matter to reproductive system and its functions and processes.
Sexual and Reproductive health:	Having a responsible and satisfying safe sex life and not merely having sex for reproduction.
Sexual Activity:	Include heterosexual intercourse involving penetration of vagina by the penis (coitus).
Unmet need:	Unmet need for modern contraception is the number/percentage of sexually active adolescents who do not want any more children or want to delay pregnancies but are not using any contraceptive method.
Utilization:	This means how much a product or service is used, types used and the timing of usage of the said product or service.

ABSTRACT

The World Health Organization (WHO, 2018) defines adolescents as individuals in the 10-19 years age group. Every year estimated 21million girls aged 15-19 years, and 2.5 million girls under 15 years become pregnant and approximately 3.9 million girls aged 15-19 years undergo unsafe abortion every year. Despite the high sexual activity by the Malawian adolescents which is rated at 51 percent, there is low utilization of modern contraception. Failure to utilize the modern contraception has resulted in adolescent girls getting unplanned pregnancies which have detrimental effects both to their health as well as their social life. Therefore, the aim of this study is to assess the modern contraception utilization among adolescent girls at Tsangano Turnoff community in Ntcheu District, Malawi. The objectives of the study were to determine the prevalence of modern contraception, to assess the level of knowledge among adolescent girls', to determine socio-demographic, socio-cultural and health systems factors influencing the utilization of modern contraception among adolescent girls at Tsangano Turnoff community in Ntcheu District, Malawi. This study focused on all unmarried adolescent girls living in the study area at the period of study. The study used a cross sectional study employing both simple random sampling technique for quantitative data and purposive random sampling technique for qualitative. The research instruments were self-administered questionnaires and Focused Group Discussions (FGD). Quantitative data was analyzed using Statistical Package for Social Sciences (IBM SPSS®) version 22.0. Analysis proceeded in two steps. First, univariate descriptive statistics were used to describe sample characteristics and estimate contraceptive prevalence among the adolescents. Contingency table methods were used to test associations between independent (categorical) variable and utilization of contraception and the qualitative data from the FGDs was transcribed and analyzed by thematic content analysis techniques. Overall 180 adolescent girls aged 10-19 took part in the study (mean age 15.2 ±1.5 years). The findings showed that 41% of the respondents had sexual debut at the age of 15 years but modern contraception utilization is still low (36%) with the majority using condoms. On knowledge, it revealed that with higher knowledge are ≥1.5 times more likely to use contraceptives than their counterparts (OR=1.595: 95% CI 1.3394-1.825: P (χ^2) ≤0.001).The study revealed that the odds of utilizing contraception among the adolescent girls is more ≥1.5 times higher in those of 15-19 years than those of the lesser age (10-14years) (OR = 1.561: 95% CI 1.386-1.758: P(χ2)≤ 0.001) similarly, those adolescent girls with higher education are ≥ 3.8 times higher than those with lower education levels (OR= 3.869:95% CI 2.381-4.972: P(χ^2)< 0.05). On sociocultural, religion is significant in utilization of modern contraception as those from Zion and Catholics are less likely to utilize contraception than their counterparts from other denominations (OR=4.421:95% CI1.874-7.692: p(χ2)<0.05). However, health-care workers attitude, commodity availability and opening hours of the facility have no significant statistically as the odds of adolescent girls utilizing contraceptives because of these factors are less than 1 (OR =0.908, 95% CI 1.596-1.384: P (χ^2)>0.05; OR = 0.944: 95% CI 0.167-5.325: P(χ^2)>0.05 and OR= 0.344: 95% CI 0.104-1.173: P (χ2)>0.05) respectively. These results showed a big gap between knowledge and utilization among adolescent girls as it showed that 74% knew about modern contraceptive but only 36% utilized it. There is a need to develop age specific reproductive health messages to guide schools' education curriculum as well as parents and guardians to specifically communicate to this group of people. Secondly, develop adolescent friendly health services as another vital aspect to improve adolescent health access to sexual and reproductive health services which will subsequently improve modern contraception utilization.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The World Health Organization (WHO, 2018) defines adolescents as individuals in the 10-19years age group. Adolescence is the transitional period from childhood to adulthood and it is a period of life with specific health and developmental needs and rights. It is also a time to develop knowledge and skills, learn to manage emotions and relationships and acquire attributes and abilities that will be important for enjoying years and assuming adult roles (WHO, 2014). Adolescence is the period of physical, psychological and emotional development triggered by a cascade of endocrine changes that lead to sexual maturation and reproductive maturity (WHO, 2018).

There are nearly 1.2 billion adolescents (10-19 years old) worldwide and in some countries, adolescents make up as much as a quarter of the population and the number of adolescents is expected to rise through 2050, particularly in low- and middle-income countries (LMICs) where close to 90% of 10- to 19-year-olds live (WHO, 2019).

According to WHO, the global birthrate for late adolescent girls is 44 births per 1000 women where as in Sub Saharan Africa it is very high at 115 births per 1000 women (WHO, 2017).

According to the WHO (2017) report, in many countries especially Latin America and Africa, sexual activity begins in early adolescence, before 15 years old for girls and boys tend to start earlier. Early initiation of sexual activities associated with negative outcomes such as risky sexual behaviors that heighten the likelihood of unintended pregnancies or Sexually Transmitted Infections (STIs) including HIV (WHO, 2017).

Even though adolescents start sexual activities at the tender age, contraception prevalence among them is very low as revealed by Guttmacher Institute and International Planned Parenthood (2015), the World Health Organization (WHO, 2017) revealed there is limited data on world contraception usage for unmarried adolescents because of cultural and religious beliefs. However, as low as 10 percent is the available data for sexually active girls age 15-19 that use modern contraception as a result, there is a lot of unmet needs and this result to more than 6 million unintended pregnancies annually in developing countries and often end in unsafe abortion.

The use of emergency contraception is low in many countries including Malawi due to lack of knowledge and access to the services. This has resulted in many adolescent girls having unplanned pregnancies. The WHO (2017) reported that in the systemic review of 60 countries' DHS, 22.5 million adolescent girls (15-19) had already given birth and Malawi is inclusive in this report.

In Malawi about 1.1 million adolescents had their first child representing 59 percent among these 31 percent are from the rural areas and 21 percent from the urban areas (MDHS 2015/16).

1.2 Statement of the Problem

Every year, an estimated 21 million girls aged 15–19 years in developing regions become pregnant and approximately 12 million of them give birth. At least 777,000 births occur to adolescent girls younger than 15 years in developing countries. About half of these (49%) of these pregnancies are unintended (Darroch, Woog, Bankole & Ashford, 2016). Complications during pregnancy and childbirth are the leading cause of death for

adolescent girls globally and every year some 3.9 million girls aged 15-19 undergo unsafe abortions. Besides, adolescent pregnancy has psychosocial consequences and these include dropping out of school which will eventually lead to poverty due lack of formal jobs (Vogel, Castrol-Pleggi, Chandra-Mouli, Pleggi, Souza, Chou & Say, 2015).

Proper contraceptive use is the key to prevent unintended pregnancies up to 90 percent. However, there is significantly low usage of contraception in Africa most specially among sexually active adolescents as mostly global monitoring mostly center on married or in-union women leaving out this special group who face a lot of discrimination and inadequate information regarding how and where to access the service (Vogel, Castrol-Pleggi, Chandra-Mouli, Pleggi, Souza, Chou & Say, 2015).

The global adolescent birth rate has declined from 65 births per 1000 women to 47 per 1000 women in 2015 (UN DESA, 2017). However, even though there is progress, the global projections indicate the number of adolescent pregnancies will increase globally by 2030 with the greatest proportional increases in West and Central Africa (where Malawi falls) and Eastern and Southern Africa (United Nations Population Fund, 2019).

According to the report produced by Every Woman Every Child (2015), it shows that there are three times more adolescent pregnancies in rural and indigenous population than urban population than the adolescents in the urban setting.

Looking at the magnitude of the problem of teenage pregnancy, the World Health Organization (WHO) published guidelines on preventing early pregnancies and reducing poor reproductive outcomes, made recommendations for action that countries could take and one of the recommendations is to increase the use of contraception by adolescents at

risk of unintended pregnancies. If this need is met, 2.1 million unplanned births, 3.2 million abortions and 5600 maternal death could be averted (WHO, 2017).

The Malawi Demographic Health Survey (MDHS, 2015/2016) has reported that as of 2016 the population of Malawi was 17 million and that adolescent fertility rate is one of the highest in the (at 136 births per 1000 women) Sub Saharan Region with over 29 percent of adolescents falling pregnant every year (MDHS, 2015/2016).

1.3 Justification of the Study

Teenage pregnancy remains a big challenge in Malawi as reports indicate at least 22 out of every 100 girls aged 15-19 have given birth while another seven percent were pregnant with their first child at the time the Malawi Demographic and Health Survey (MDHS) was conducting a survey which covered 27, 516 households signifying a 3 percent increase from the 2010 MDHS (MDHS, 2015/16). The birthrate which is over 100 per 100 women is deemed very high as stipulated by the World Health Organization and in Malawi on average the birthrate for adolescent girls is at 136 per 1000 women and it is highest in the rural areas as it is 145 per 1000 women which is so alarming (MDHS, 2015/16).

In Malawi, the mean age for sexual debut is 16.8 years. However, 19 percent of the adolescent girls start having sex at below 15 years (MDHS, 2015/16).

Even though the adolescent birthrate is so high in Malawi the unmet need for modern contraception is so high among unmarried adolescent girls as it is at 52 percent while their married counterparts is at only 22 percent. Similarly, married adolescent girls aged 15-19 have 62 percent of their modern contraception satisfied whereas unmarried

sexually active adolescent girls of the same age have only 38 percent of their modern contraception demand satisfied (MDHS 2015/16; HP+ Policy Brief, 2017).

The National Statistical Office (NSO) conducted a survey in Malawi in the Multiple Cluster Survey. It was reported that in the rural areas, 64% of adolescents drop out of school by the time they reach standard seven, majority due to pregnancy. Ntcheu District, especially Tsangano Turnoff Community is in the rural area which means, it is not spared from this problem (NSO, 2015). A few studies have been done on adolescents' utilization of contraception but no study has been done on factors that are affecting adolescent girls not to utilize modern contraception despite an increase in unintended adolescent pregnancies.

An unintended pregnancy poses a range of public health problems including maternal and perinatal deaths, unsafe abortions and school dropout and non-completion of basic education among adolescent girls which in the long run will lead to poverty.

Tsangano Turnoff community is one of the busiest trading areas in the district as it boarders Mozambique. This leads to a lot of adolescent girls indulge in transactional sex that put them at risk of unintended pregnancies. Despite these challenges, no study has been done regarding adolescent pregnancy and modern contraception uptake in this area to find strategies which can be utilized to avert the alarming state of adolescent pregnancies.

1.4 Research Questions

1. What is the proportion rate of utilization of modern contraception among adolescent girls at Tsangano Turnoff community in Ntcheu District- Malawi?

2. What is the level of knowledge on modern contraception among adolescent girls at Tsangano Turnoff community, Ntcheu District- Malawi?
3. What are the socio-demographic factors that determine the uptake of modern contraception among adolescent girls at Tsangano Turnoff in Ntcheu district, Malawi?
4. What are the socio-cultural factors that determine the utilization of modern contraception?
5. What are the health systems related factors that determine the utilization of modern contraception?

1.5 Null Hypotheses

There is no relationship between level of knowledge and utilization of modern contraception among adolescent girls.

There is no relationship between age and utilization of modern contraception among adolescent girls.

There is no relationship between level of education and utilization of modern contraception among adolescent girls.

There is no relationship between health systems related factors and utilization of modern contraception among adolescent girls.

1.6 Objectives

1.6.1Main Objective

To assess the modern contraception utilization among adolescent girls at Tsangano Turnoff community, Ntcheu District- Malawi.

1.6.2 Specific Objectives

1. To establish the prevalence of utilization of modern contraception among adolescent girls at Tsangano Turnoff community in Ntcheu District- Malawi.
2. To assess the level of knowledge among adolescent girls on modern contraception at Tsangano Turnoff community, Ntcheu District, Malawi.
3. To identify socio-demographic factors that determine uptake of modern contraception among adolescent girls at Tsangano Turnoff Community in Ntcheu district, Malawi.
4. To establish socio-cultural factors that determine modern contraception utilization among adolescent girls at Tsangano Turnoff community in Ntcheu district, Malawi.
5. To assess Health related factors that determine utilization of modern contraception among adolescent girls at Tsangano Turnoff Community in Ntcheu district, Malawi.

1.7 Significance of the study

At the International Conference on Population and Development held in Cairo in Egypt states committed themselves to comprehensively addressing sexual and reproductive health issues of adolescents as alluded to in the paragraphs 7.44 and 7.46 of program

action and these include reducing unsafe abortions, substantially reducing unwanted pregnancies and promoting their rights to reproductive health education, information and care. However, over 25 years down the line since that commitment was made Malawi has failed to fulfil that commitment as the recent MDHS (2015/16) indicates that teenage pregnancy is on the rise as it has risen with 3 percent (29 %) from 26 % as reported by the MDHS (2010) and Ntcheu district is worse as it shows that it has surpassed the National data on teenage pregnancy as recently a study by National Statistical Office (NSO) reported that 24.3% of adolescent girls age between 15-19 reported to have had a live birth while another 6.1% were pregnant with their first child. In total 30.4% of the adolescent girls had therefore began childbirth (NSO, 2015).

Even though the adolescent birthrate is so high in Malawi the unmet need for modern contraception is so high among unmarried adolescent girls as it is at 52 percent while their married counterparts is at only 22 percent. Similarly, married adolescent girls aged 15-19 have 62 percent of their modern contraception satisfied whereas unmarried sexually active adolescent girls of the same age have only 38 percent of their modern contraception demand satisfied (MDHS 2015/16; HP+ Policy Brief, 2017).

Various studies have been conducted on adolescent girls in Malawi but most of them were only focusing on impact of their risky sexual behaviors. There has been little research on why adolescent is low utilization on modern contraception among adolescent girls currently at 26 percent (MDHS, 2015/16) and limited data is available that is specifically talking about unmarried adolescent contraception utilization in Malawi as

well as Ntcheu District despite the outcry of high rates of school dropout due to adolescent pregnancies among this special group.

Contraceptive unmet need for unmarried adolescent girls has increased overtime leading to increased gap between total demand and contraceptive prevalence rate among this specified group leading to unintended pregnancies (Sanchez-Paez & Ortega, 2018). This study will help in identifying the reasons why there is high unmet needs for contraception that lead to unintended pregnancies. Even though a lot of studies have been done, limited studies have been done on rural unmarried adolescents therefore this study will help the unmarried adolescent to know that they can that it is there right as stipulated in the Programme of Action during the International Conference on Population and Development (ICPD) held in 1994 to access modern contraceptives to avert the problem of adolescent pregnancies which is making it difficult for adolescent girls to complete their basic education (United Nation Population Fund (UNFPA, 2004). It will also help to provide the much-needed information to the adolescent girls living in the rural areas as reports indicates that those girls who reside in the rural areas are at the disadvantage regarding accessing information and availability of modern contraception as compared to their counterparts residing in the in the urban areas. The study will therefore bring to limelight the information and availability and accessibility of modern contraception to the adolescent girls hence promoting its utilization hence preventing adolescents' pregnancies thereby retaining girls in school hence contribute to their socioeconomic stability in the near future after completion of their education.

The findings of the study will be shared among parents and other stakeholders at Tsangano T/Off community and the surrounding areas to empower their sexually active girl child to use the modern contraception to prevent unintended pregnancy. The findings will be also shared with the Ntcheu District Health Office to help it review its health systems policies so that adolescent girls are assisted in a friendly way to access the modern contraception when need arise.

To the Malawi Government, the findings will assist in the review of policies on youth friendly health facilities that will promote the utilization of modern contraception hence being able to meet the commitment she made at the ICPD as the adolescents' pregnancy will be reduced substantially and also to train enough youth-friendly health workers.

1.8 Limitation and Delimitation

1.8.1 Limitations

The study was limited to modern contraception only and did not include sexual and reproductive health services that include post- abortion care and Sexually Transmitted Infections (STI's) including HIV. However, information regarding the best practices of prevention which is Abstinence, Being Faithful if they are in a relationship and if all fails, and then they should use condoms (ABC) and also information regarding the importance of post abortion care was provided during the study period.

1.8.2 Delimitations

The study explored all the avenues of promoting uptake of modern contraception among adolescent girls in the study area and possibly applying the findings to the all adolescent girls in Malawi. This helped the policy makers to revisit the existing policies to include

the research findings which eventually will promote adolescent girls' modern contraception utilization thereby preventing adolescent pregnancies which has reached an alarming state in Malawi.

1.9 Theoretical Frame Work

The study was guided by the theories of Reasoned Action and Planed Behavior by Ajzen and Fishbein (2010) which comprise of four components for one to perform a desires behavior which are attitudes towards a behavior, subjective norms, behavior intentions and perceived behavior.

These components were defined as follows:

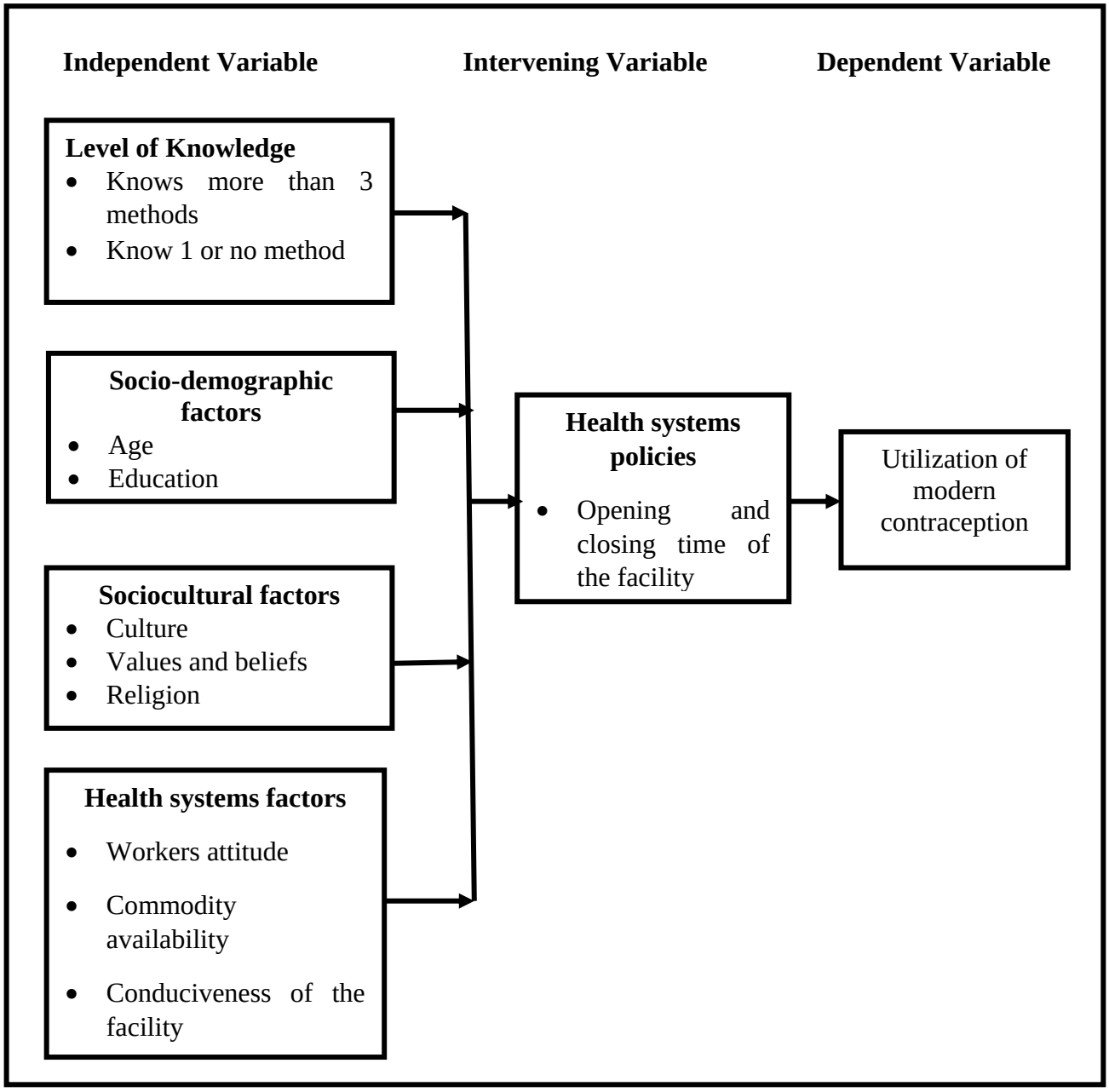
Attitudes toward a behavior as an aggregate of readily accessible or salient beliefs about the likelihood of performing the target behavior whereas subjective norms as perceived social pressure to perform or not to perform the target behavior and behavior intentions as perceived likelihood of performing a target behavior. Ajzen and Fishbein however noted that there is one factor which may limit the translation of intentions to behavior is one's ability. The theory of planned behavior updated the theory of Reasoned Action by including the component of perceived behavior control which specifies one's perceived ability to enact the target behavior.

The theory addresses the impacts of cognitive components such as attitudes, social norms and intentions on behavior. According to the theory an individual's attitudes towards a certain behavior and norms representing their perception of other people's views such as behavior will determine their behavior intentions, which may further lead to performance of the behavior. These components were defined as follows:

Attitudes toward a behavior as an aggregate of readily accessible or salient beliefs about the likelihood of performing the target behavior whereas subjective norms as perceived social pressure to perform or not to perform the target behavior and behavior intentions as perceived likelihood of performing a target behavior. Ajzen and Fishbein however noted that there is one factor which may limit the translation of intentions to behavior is one's ability. The theory of planned behavior updated the theory of Reasoned Action by including the component of perceived behavior control which specifies one's perceived ability to enact the target behavior.

As the theories have explained what can drive a person to perform a target behavior in this case the driving force for the adolescent girls to utilize the modern contraception are the their attitudes towards the method whether they perceive that it is right for them to use any of the methods or not (Behavior intentions), what the society, health workers and their peers are saying towards the method (subjective norm), their assertiveness to use it, their perceived susceptibility towards pregnancy whether they feel that they are at risk of getting pregnancy or not, their perceived behavior control in this case their level of thinking, education and accessibility to the method. Taking into consideration the thinking abilities of the adolescents, they are easily convicted by what other people think about a certain behavior as their prefrontal cortex is fully matured to make a concrete decision on their own as compared to adults.

1.10 Conceptual Framework



Adapted from Fishbein and AJzen 1980

Figure 2.1 Conceptual framework Adopted from Fishbein & Ajzen, 2010

The conceptual framework is adapted from The Reasoned Action Approach, a combination of The Theory of Reasoned Action and the Theory of Planned Behavior. The theory stipulates that behavioral intentions are determined by attitudes towards the behavior (e.g. whether engaging in a behavior is evaluated by positive or negative), subjective norms surrounding the behavior (e.g. beliefs about whether others think one should engage in a behavior and perceived behavioral control (e.g. beliefs regarding how easy or difficult performing the behavior is likely to be (Fishbein & Ajzen, 1980). In this context perceived behavioral control reflects both external factors for example availability of time, money or social support as well as internal factors for example ability in terms of skills and information.

According to this study the theory fits in appropriately as adolescent's utilization of modern contraception will depend on their behavior and the behavioral intentions in this case and adolescent's will to prevent an unintended pregnancy coupled by a positive attitude towards the behavior (utilization of modern contraception). These adolescents should believe in the behavior in such a way that they should know that if they are sexually active and yet do not use contraception, they will end up having unintended pregnancy which will eventually delay or completely ruin their future. Adolescents should also have an ability to have an evaluation of their behavior in regarding their sexual behavior in relation to utilization of modern contraception.

An adolescent girl may have an internal conflict regarding utilizing modern contraception as her a culture and religion may approve of her using contraceptives (subjective norms). On the other hand, normative beliefs such as age of which majority of the adolescents

might believe that they are still young to utilize contraception yet they are sexually active and eventually leading into unintended pregnancy. However, if they are motivated by either their parents and peers, they can freely utilize the commodities.

This theory is used to predict the behavior and understanding healthy and unhealthy behaviors and the outcomes. For example, an adolescent girl's sexual behavior may lead to unintended pregnancy if she is not utilizing modern contraception. This theory also lavages the important of knowledge or health education of modern contraception and hence utilizing the same. Using this theory can lead to implementation (utilization) and development of health prevention programmes for example having an adolescent friendly facilities and healthcare workers eventually creating a conducive environment for adolescent girls to freely access and utilize the modern contraception hence preventing the unintended pregnancies.

According to the theory, the uptake of the modern contraception is directly affected by the availability and accessibility of the preferred contraceptive methods, socio-demographic variables (age, education, culture and religion) determine the behavioral intentions for the adolescent girls whether to go to use the modern contraception or not. This is so because most people view adolescent girls as the group of people which does not require contraception as they are socially, culturally and religiously deemed to be not practicing sexual intercourse. Some religious beliefs bar their subjects from using contraception for example, the Roman Catholic. This coupled with the belief that the adolescent girls are supposed to abstain from premarital intercourse put the adolescent girls away from utilizing modern contraception.

The adolescent girls must have knowledge regarding the availability and importance of modern contraception. However, they face challenges in regards to time and social support as mostly they have limited time and lack money to go for the services and besides, no one can support the idea as culture stipulates that unmarried adolescent girls are not supposed to engage in sexual relationships and in this regard their tender age is a barrier.

The adolescent girls' perception towards the impact of sexual intercourse as they see themselves less susceptible to pregnancy as they do not routinely engage in sexual intercourse.

The health workers attitude, service delivery time and structural convenience where there are no youth friendly services or clinics can also determine the adolescent girls' utilization of modern contraception.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

An adolescent person is any person in the age band of 10-19 years. It is a period of rapid neuronal development which is linked to hormonal changes. Developments take place in the limbic system of the brain being responsible for pleasure seeking and reward process, emotional responses and sleep regulation and on the other hand the prefrontal cortex development being responsible for executive functions like decision-making, organization, impulse control and planning for the future. However, maturity in the limbic system precedes those in the pre-frontal cortex (WHO, 2018).

Modern contraception is any method that aim at preventing pregnancy by interfering with the normal process of ovulation, fertilization and/ or implantation. There are several methods of contraception categorized in the two major categories; the hormonal and non-hormonal contraception methods. Under hormonal there are pills, Depo Provera, implants and some Intra uterine devices (IUDs) and under non-hormonal contraception there are barrier methods like condoms, spermicides, and permanent methods like Tubal ligation for females and vasectomy for males. The World Health Organization eligibility criteria for contraception does not stop adolescents from utilizing any chosen method. However, consideration must be made when they have chosen a permanent method as it might have a negative consequence when they think otherwise (WHO, 2018).

The total demand and contraception use are very significant measures of access to sexual and reproductive health and rights and the universal access to sexual and reproductive health by the year 2030 corresponds to the United Nation’s Sustainable and Development

Goals (SDGs) targets 3.7 and 5.6. Target number 3.7.2 specifically refers to the adolescent birthrate and expansion of contraception use in most impoverished countries (Malawi inclusive) is also a goal of Family Planning 2020 global partnership (UN, 2015; FP 2020, 2015).

Adolescent girls face a lot of challenges to access the modern contraception as compared to older women due to a number of barriers. As they may not have knowledge as to where to obtain the contraception or may not afford the services but yet where there is an easy access uptake may be constrained by stigma around non-marital sexual activity and overall lack of agency to make critical decisions. Addressing these challenges may delay first pregnancy, reduce maternal mortality, improve health outcomes of both mother and children, contribute to broad development goals and reduce poverty (Subedi, 2016). In this section, selected public health studies conducted around the world regarding modern n contraception will be highlighted. Areas covered in this area are the adolescent girls' level of uptake of modern contraception, knowledge on Emergency Contraception, factors determining uptake of contraception among adolescent girls.

2.1 Prevalence of modern contraception among adolescent girls

Globally among many sexually active adolescent girls' large numbers want to avoid, delay or limit pregnancy but lack knowledge, agency to decision making or resources to do so. On average unmet need for contraception is greater among the unmarried adolescent girls than their married counterparts (Guttimacher, 2017). In a study done by Chhabra & Singh in the United States of America on Adolescents' birth control practices reported that the majority of the sexually active adolescent girls reported to have used

contraceptives the first time they had sex (78%). The most commonly used method is barrier method (condoms) (68 %) followed by withdrawal method (57), pills (56%) and 20 % percent of the adolescents reported to have used duo protection method (condoms and Hormonal method concurrently) (Chhabra & Singh, 2016).

Sanchez-Paez & Ortega analyzed DHSs in Africa on Adolescent Contraceptive use and its Effects on fertility and reported that there is a high demand for contraception among sexually active adolescent girls (84.7 %) and the Sub Saharan Africa (Where Malawi is) is at 80 %. However, despite these demands, contraception use among this group of people is only 38.6 % against the global prevalence of 60.8 % (Sanchez-Paez & Ortega, 2018). This signifies how low contraceptive is as there is a lot of demands but low utilization, as such there is need to find out the reasons behind this trend so that unintended pregnancies can be averted with consistent use of modern contraception.

In a study conducted in Nigeria in 2016 on contraceptive use among female adolescents reported that modern contraception use is very as low as 8 percent and indicated religion, education and availability of funds as the major reasons for low uptake of modern contraception among adolescent girls (Oluwaseun, Babatola & Gbamisola, 2016). In Kenya, a study on utilization of contraception among female adolescent girls in secondary schools reported that only 23 percent of the sexually active adolescent girls use modern contraception and injectables, pills and condoms are the mostly utilized contraception methods (9.2 %, 3.8 % and 2.8% respectively) (Center for Reproductive Rights, 2015). However, the study left the equally important group of adolescents those below 15 years as the have contraception needs as well since some start sexual activities t

a tender age so it is important to investigate their contraception needs as well. In Malawi only 15 percent of unmarried sexually active adolescent girls use modern contraception and the most utilized method is Depo Provera (9.1 %) followed by pills and Intrauterine Devices (IUDs) methods (0.4 and 0.3 %) respectively and the remaining 85 % are not on any method which is very risky to the unintended pregnancies (MDHS, 2015/16).

2.2 Adolescent girls' level of knowledge on modern contraception

Globally, little is known regarding contraceptive needs for adolescents particularly the unmarried ones although they are the largest cohort of adolescents in history, as data for them are rarely reported, even when collected. Understanding the varied reasons for non-use can help in tailoring policy and programme responses within countries to decrease barriers in knowledge and access for adolescents and health care providers (Hindin & Kalamar, 2017).

In the United States of America, a good number of adolescents especially those 18 years and above reveal high rates of unintended pregnancies, this is because of not utilizing contraception of failure of the contraceptives due to ineffective use (Asut, Ozen, Gur, Deliceo, Cagin, Korun, Turk, Vaizegulu & Cali, 2018). Much as the utilization of the modern contraception seems good, the study looked at all adolescents (both boys and girls) and also it left out a specific group of girls, those below 15 as majority may be sexually active as well such that they may also need the contraception as the WHO indicated that some 2.5 million pregnancies of this group become pregnant yearly as well which is a substantial figure to be considered.

In a study done in Brazil in an attempt to answer a question if knowledge of contraception affect its use reported that there is no significance between the level knowledge and its utilization as 58 percent of the adolescent girls reported that they have ever used one of the modern contraception methods and this percentage is way too much higher than the previous studies. Even though utilization is good, most of the respondents clearly show that they have insufficient knowledge regarding the some of the contraceptive methods for example emergency contraception and its mechanism of action (Chofakian, Borges, Sato, Alencar, dos Santos & Fujimori, 2016). However, the study has limitations as it focused mainly on emergency contraception such that there is need to conduct another study that will incorporate all the methods so that the adolescents have wider variety of choices not only one contraceptive method. In Nepal, in a study done on factors influencing contraceptives among adolescents reported that almost all the adolescents are aware of at least one contraceptive method. However, even though they know about the contraceptive method, there is low utilization citing the reasons that most of them have little knowledge on the efficacy, mode of operation and proper ways of how to use and when to use the contraceptive methods (Subedi, 2015).

The International Center for Research on Women reviewed several literatures done by several researches done from the year 2000 in the quest to find out about what is known about adolescents' demand for and access to Family Planning information and services and reported that utilization of Family planning is good to the adolescents who have sufficient knowledge and also those with positive attitude. However, the study involved all the adolescents (boys inclusive) as the study may not give the true reflection of contraceptive usage as boys are known to be very good partakers of sexual and

reproductive services as compared to girls as such an independent study that will only focus on the unmarried adolescent girls must be done to find the factors that is leading to the heightening of unintended pregnancies (International Center for Research on Women, 2014).

In a study done in Sao Paulo, Brazil on the impact of knowledge on Emergency Contraception among adolescents, it was discovered that 95 percent of the girl respondents has knowledge on Emergency Contraception and that 58 percent reported using it (Chofakian et al., 2016). In relation to modern contraception, adolescent girls' dearth of knowledge about relevant sexual and reproductive health care services in Sub Saharan Africa indisputably hinders the utilization of modern contraception as evidence has shown that below 10 percent of the adolescent girls in Senegal and Zambia are aware of the availability of some of the methods of contraception such as emergency contraception (WHO, 2017). Hence the need is still there for the specific study to be done that will address the unmarried adolescent girls about their knowledge of contraception methods, where to get them and how to effectively use them so that unintended pregnancies can be prevented.

In a study done in Dare Salam, Tanzania on knowledge of the contraceptives among secondary school girls reported that the most adolescent know about contraceptives (75.2%) however the utilization is relatively low (12.4%). This signifies that knowledge about something does not positively correlate with the utilization as a result a study must be conducted that will investigate factors that influence utilization of contraception among unmarried adolescent girls so that they can be addressed thereby help in the

reduction of adolescent pregnancies (Mardi, Ebadi, Shahbazi & Moghadan,2018). In a related study among female undergraduate student in Dare salaam and Muhimbili Universities reported that almost all the respondents knew about modern contraceptives however, only 56% had ever used on of the contraceptive methods with condoms being utilized most (23%) followed by pills (16 %). The respondents reported that these are the only methods they know, hence there is inadequate knowledge and this can also significantly affect the utilization (Somba, Mbonile, Obure & Mahande, 2014).

In a study done in Kenya on the undergraduate Health Sciences students at the University of Nairobi, it was found that 72.1 percent of the respondents had knowledge on modern contraception. However only 23 percent reported using the method frequently coupled with incorrect use of the method (Gitonga, 2017). In a study done in South Africa, adolescent girls living in urban areas are more likely to use modern contraceptives than those girls living in the rural areas probably due to lack of knowledge and accessibility (Makola, Mlangeni, Mabaso, Chibi, Sokhela, Silimfe, Seutlwad, Naidoo, Khumalo, Mncadi & Zuma, 2019). According to a survey done in Malawi, it reported that adolescent girls are rarely taught about contraception and other sexual and reproductive health services in schools hence they have little knowledge regarding prevention of unintended pregnancies (Convention on the Elimination of all forms of Discrimination Against Women, 2015).

Studies which were conducted in the Eastern Cape, South Africa and in Kenya, reported that low contraceptive use has been associated with limited knowledge on accessibility, and awareness of contraceptives in the rural areas hence contributing to high rates of

unintended adolescent pregnancies (Christofides, Jewkes, Dunkle, Nduna, Shai & Sterk, 2014; Ochako, Mbondo, Aloo, Kaimenyi, Thompson, Temmerman & Kays, 2015). However, both these studies both boys and girls and those above fifteen hence there is still a need to conduct a study that will specifically address the un married adolescent girls and factors that will help to identify the factors that can influence contraception utilization so that they can have sufficient knowledge about it that will enable them to utilize it and in the long run unintended pregnancies can be prevented.

2.3. Socio-demographic related factors that determine uptake of modern contraception among adolescent girls

Socio-demographic related factors for the sake of this study include, age, education and marital status.

In Nepal a study was conducted which looked at Factors associated with Contraception use among sexually active youths and reported that age is a strong determinant of contraceptive use as there was a strong evidence among youths who were above 16 years using contraception (62.3 percent) than their younger counterparts (8.5 percent). These results are similar what were found in Spain in a study on trends in the use of oral contraception use among adolescents and young women (Tamang, Raynes-Greenow, Mc Geechan & Black, 2017; Carraso-Garrido, Lopez de Andres, Hernandez-Berreira, Jimenezi-Trujillo & Garcia, 2016). However, these studies did not look specifically at the unmarried adolescent girls who might have challenges accessing the contraceptives despite the fact that they are above 16 as they face a lot of stigma in accessing the services because of their unmarried status.

Low contraception utilization among adolescents has been associated by low education and living in the rural areas revealed a study which was conducted in the Eastern Cape in South Africa (Christofides et al., 2014). Education is a determinant of contraception use as the study found that contraception use was much higher in women with at least secondary school education that those with little or no education at all (41.2 percent and 6.4 percent respectively) (Asiimwe, Ndugga & Mushon, 2014). Marital Status is another important variable as far as Contraception use is concerned. This is so because culturally married women are regarded as mature enough to make decision regarding their reproductive health as compared to unmarried counterparts as they are expected not to indulge in sexual relationships. The study reported that married women were more advantaged to use contraception than their unmarried counterparts (Asiimwe et al., 2014).

In a study conducted on Predictors of Emergency Contraception among female students at Adama University in Ethiopia reported that female students who were above 20 years were 3.48 times more likely to use modern contraception as compared to younger women. Secondly, the study also reported that those female students who were married were 15.39 times more likely to use modern contraception than the unmarried students. Another important variable was age at sexual debut as those women who started sexual intercourse at later age (above 20 years) were found to be 2.38 times more likely to utilize modern contraception than those female students who started it at a younger age (Tilahu, Assefa, & Belachew, 2018).

In Nigeria a study about determinants of contraceptives among female adolescents reports that contraceptive usage increases with age as it showed that 98 percent of

adolescents said no to contraception against 86 percent of those aged 19 years, and another study reports that age at sexual debut is another determinant of an adolescent usage of emergency contraception as those young girls who first had sex at 20 years are five times more likely to use modern contraception as compared to adolescent girls (Oluwaseun et al., 2016; Shiferaw, Gashaw & Tesso, 2015) .

In Malawi as study on socioeconomic and demographic factors affecting contraceptive use was conducted and reported that contraceptive use is higher among older women and decline among younger women. Contraception use is also higher among married women than unmarried women (Palamuleni, 2018). However, this was a general study that looked at all women of the reproductive age (15-49) such no study was done that specifically targeted the unmarried adolescent girls and modern contraception and look at the factors that affect its utilization hence the need to conduct such a study.

2.4 Socio-cultural related factors that determine uptake of modern contraception

These include culture, religion, values, peers, parents and beliefs that shape one's growth and the way she / he perceives things. It is an important aspect that looks at the important contributions that the society makes to individual development (Cherry, 2018).

In a study done in the United States of America reported that one of the deterrent factors to using modern contraception by adolescent girls is ambivalent intentions of pregnancy and uncertainty about the future. These feelings leave the adolescent girls without proper decision about whether to use the modern contraception or not (Chemick et al., 2015).

A systemic review on factors influencing contraceptive use in Sub Saharan Africa indicated that restrictive culture, low status and social stigma affects adolescents'

utilization of contraception. These socio-cultural barriers explain why there is underutilization of contraception among adolescent girls even though there might be adequate knowledge about it. Furthermore, in a survey which was conducted in Zimbabwe which was trying to examine the influence of individual, household and community variables on contraception among adolescents discovered that community variables are much more critical predictors of adolescents' contraception utilization than individual or household variables (ZDHS, 2011; Blackstone, 2017). Decreasing age of menarche and onset of sexual activity have contributed to young people exposed early to unplanned and unprotected sexual intercourse leading to unintended pregnancies and consequently abortions especially in many Sub-Saharan African countries where persistent high rates of unmet need for family planning and low rates of contraceptive use are reported.

Barriers to utilization of contraception disproportionately affect adolescent girls due to culture as it restricts them from moving around and also lacks financial autonomy to pay for services and transport to the service delivery points (Chandra-Mouli et al., 2017; Oluwaseun et al., 2016). This in turn affects the adolescent girls to go and utilize modern contraception methods even after having unprotected sex for fear of being reprimanded at either at home or community.

In Malawi, despite the services being offered for free of charge, still there is underutilization of modern contraceptives even though adolescent pregnancies has reached at an alarming rate, a thing that needs an investigation to find out the reason why that is the case to devise means which can improve utilization of the service so that un

intended pregnancies can be averted. Lack of education is another factor that contributes to underutilization of modern contraception as less educated adolescent girls are less empowered to make decisions about their sexual behavior in negotiating with their sexual partners (Subedi, 2015).

In Nigeria studies were conducted charting the future for adolescent girls and determinants of contraception among female adolescents, reported that adolescent girls face considerable challenges in regards to controlling their fertility. They reported that in the areas where adolescent girls are deeply rooted into cultural values modern contraception utilization is a challenge as premarital sex faces a lot of stigma therefore, they (adolescent girls) cannot have the courage to seek for any contraception method despite actively indulging in sexual intercourse. Other barriers include geographical location especially to the adolescent girls living in the rural areas as it is difficult for them to access the services as those living in urban were five times more at utilizing contraceptives than those living in rural areas. Fear of being labeled promiscuous by society when unmarried adolescents seek contraceptives is another factor that contributes to underutilization of modern contraceptives (Christofides et al., 2014; Oluwaseun et al., 2016). The International Centre for Research on Women also reported the similar findings on the impact of what is regarded as ‘socially correct’ in many societies puts adolescent girls at a disadvantage as boys are pressured to engage in premarital sex while girls must remain chaste. This puts adolescent girls who engage in premarital sex in a situation where they cannot seek or utilize modern contraception due to fear of being labeled as loose as well as a feeling of embarrassment (International Center for Research on Women (ICRW), 2014).

Looking at all the above studies, socio-cultural factors are some of the contributing factors to the underutilization of modern contraception among adolescent girls worldwide. However, there limited studies from Malawi on adolescents' contraceptive utilization. However, a study is therefore required to specifically target un married adolescent girls to assess factors that determine utilization of modern contraception and find a lasting solution that will address the disparities thereby promoting utilization of modern contraception hence helping in averting unintended pregnancies thereby keeping the girls in school for the better future.

2.5 Health systems related factors

The UNFPA categorized the barriers to utilization of modern contraception by adolescents in three categories, the first one being demand-side barriers which are related to contraception seeking behavior and uptake by adolescents themselves, the second one being supply-side barriers which are related to the service delivery and provision of contraception and lastly is the structural and environmental barriers related to the large economic factors, social norms and societal attitudes and organizational structures that influence health service access and practices (UNFPA & Guttmacher Institute, 2019).

In the quality of care framework by the World Health Organization (2015), emphasized on three important components to make the existing services accessible, equitable, appropriate and effective for adolescents as follows:

1. Service providers must be trained about the needs of adolescents and youth and how to communicate and counsel them.

2. Facilities must be friendly and welcoming of good quality and acceptable to adolescents and youth and also that it must protect their privacy and confidentiality and must be offered at subsidized rates or for free.

3. More effective interactions must engage the community and make specific efforts to inform adolescents and youth about the available services.

2.5.1 Institutional factors that determine modern contraception among adolescent girls

UNFPA, United Nation Children's Fund (UNICEF) and the Ministry of Health and population in the Department of Health Services conducted a qualitative study in Nepal on constraints affecting the quality adolescents friendly health services and the barriers to utilization reported that in many health facilities, the clinics are not separated from the general services and the adolescents thus avoiding accessing the services as they feel embarrassed that they might meet someone who knows them and report to their relatives. Some of the barriers include sex of the health provider as most adolescents do not feel free and open talking to the provider of the opposite sex and free at ease with the same sex health providers (UNFPA, 2015).

The setup of Healthcare facilities plays a vital role in influencing utilization modern contraception among adolescent girls. In a study done in Nepal indicated that opening hours of health facilities contribute to underutilization of modern contraception among adolescent girls as they must skip school for them to access the services as such many choose not to. Besides, it was also noted that many Family Planning Clinics are not separated from the general services as such adolescent girls feel embarrassed to go to

seek for the modern contraception as the fear that they might be seen by people who know them (Subedi, 2015).

Privacy and confidentiality are very essential as far as adolescent girls are concerned as they are afraid of being seen by those they know and once privacy is compromised on modern contraception, accessibility as well as utilization is also compromised (Dorairajan et al., 2017).

2.5.2 Healthcare worker attitude and perception

In a study done in Nigeria on adolescents' knowledge, attitude and utilization of Emergency Contraception pills reported that reluctance by health workers to provide Emergency Contraception to adolescent girls because of the belief that they produce abortion (abortificients) (Onasoga et al., 2016). The healthcare workers, negative attitude and behaviors towards adolescents seeking sexual and reproductive health services such as contraceptives in the Sub- Sahara African region as most healthcare workers put age and marital status restrictions to offer contraceptives as such those unmarried adolescents find it difficult to access the contraceptives. Such negative attitude and behaviors have negative repercussions on adolescents especially girls as consequently, they fall pregnant of which most of them are unwanted (Sidze, 2014). Most of the studies were general in such that they were looking at all the sexual and reproductive health services and also that they included both married and unmarried adolescent girls. In this regard, there is need to conduct a specific study that will look at the health systems determinants of uptake of modern contraception methods so that lasting solutions can be found that will

improve the uptake hence help unmarried adolescent girls prevent unintended pregnancies.

In a study done in Ethiopia, reported that one of the reasons why adolescent girls do not access and/or use the modern contraception is disrespectful and unfriendly approach by healthcare workers (Chere & Belete, 2017).

In a study on attitude of health care providers towards adolescent sexual and reproductive health services in developing countries reported that there is role conflict in nurses when they work as they assume a role of a parent and feel not comfortable providing adolescent girls with contraception as they feel that it promotes early sexual debut. Secondly, the feel that adolescence is not the right time for contraception as they are still perceived as children (Chilinda et al., 2014).

2.6 Summary of reviewed literature

According to the above literature, almost all the studies done in the world, only a few studies concentrated on unmarried adolescent girls and utilization of modern contraception. Besides, none of the studies has studied on all adolescent girls (10-19 years), they concentrated on a specific group of adolescents for example most studies concentrated on girls aged 15-19 leaving out the most important group which is that below 15 years as they face unintended pregnancy problem 2.5 million yearly as reported by the Word Health Organization and this signifies that they are equally sexually active just as the order adolescents (15-19 years).

In this case, it is very important to conduct a study that will address all unmarried adolescent girls' needs on modern contraception and eventually avert unintended pregnancies in this specific group.

Secondly, much as many studies on contraception have been done all over the world, very few studies have been done in Malawi and no study was done that specifically addressed the unmarried adolescent modern contraception needs for adolescents let alone finding out why there is low utilization of the same hence the need to conduct a study that will specifically try to find out why there is low utilization despite the fact that unintended pregnancy reaching at an alarming state in Ntcheu District.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter looks into the methodology used in the study these includes; the research design, the study area, study population, sampling procedures, the sample size, procedures on data collection, reliability and validity, data analysis and presentations, pretest and ethical considerations.

3.2 Study Design

A descriptive cross -sectional study design was used in this study. Cross-sectional studies are carried out at one point in time over a short period of time. Descriptive cross-sectional studies simply characterize the prevalence of a health outcome in a specific population commonly for the purposes of public health planning. This study design was chosen because it helped to look at the individual characteristics, including exposure to risk factors, alongside information about the outcome in this case why are the unmarried adolescents fail to utilize the modern contraception despite knowing adverse outcome which is unintended pregnancy. Furthermore, this study design was useful in determining the proportion of the unmarried adolescent girls among the general population to determine factors that may affect the modern contraception utilization.

The study was be purely based on primary data which was collected using questionnaires and Focus Group Discussion (FGDs).

3.3 Study Area

Tsangano Turn Off community which is in Ntcheu District in the area of Traditional Authority Njolomole, Group Village Headmen Phuka and Kadzakalowa in Malawi and it comprise of seven villages namely; Chipula, Unyolo, Kalulu, Phuka, Galeta, Chingawa and Kasamba Villages. It is situated along M1 road along Lilongwe –Blantyre main road. Situated some 8 kilometers from Ntcheu Boma and approximately 235 kilometers from Lilongwe. On average each village has 1,440 people. In Malawi, out of the total population, 34 percent are the adolescents (World Bank Group, 2016), Adolescents group in Malawi half are boys and the other half are girls (50 percent) (MDHS, 2015/16).

3.4 Study Population

All unmarried adolescent girls in the seven above mentioned villages around Tsangano Turnoff community in Ntcheu district, Malawi will participate in the study. In those villages, the total population is about 10,074 and therefore, there are approximately 3,428 adolescents and dividing this number by half is giving a target of 1,721 adolescent girls.

3.5 Inclusion criteria

All unmarried adolescent girls at Tsangano Turnoff Community who will assent to participate in the study.

3.6 Exclusion criteria

All un married adolescent girls who were pregnant during that period of study at Tsangano Turn off community in Ntcheu District, Malawi and those who did not assent to participate in the study.

3.7 Sample Size Determination

The Fisher's formula was used to determine the sample size.

$$\mathbf{N=} \quad \frac{\mathbf{Z^2 x\ pxq}}{\mathbf{d^2}}$$

N= Minimum sample size

Z^n = Standard normal deviation, 95%

p = Proportion of adolescents in target population (34 percent of the population (MDHS, 2015/16)

d = Absolute precision (Error Margin) (0.05)

Therefore $\frac{1.96^2 x\ 0.34x0.66}{0.05^2}$ =345.

As stated earlier on, adolescents represent 34 percent of the total population (MDHS 2015/16). However, 345 was the total number of adolescents in the population. The MDHS 2015/16 stated that half of the adolescents are girls therefore the sample size was 173 girls.

The sample size however, allowed a 10 percent proportionate sampling which was 180 girls. (Mugenda & Mugenda, 1999).

3.8 Sampling Technique

The study used purposive sampling technique to select the villages surrounding Tsangano Turnoff Community in Ntcheu District, Malawi. Simple random sampling technique was used for quantitative data and purposive sampling technique was used for qualitative data. There seven villages surrounding Tsangano Turnoff Community and all the villages were selected. There were about 3,428 adolescents. According to the MDHS (2015/16),

50 percent of the total adolescents are girls and, in this case, there are about 1,721 adolescent girls in the sampled villages. The sample was appropriately proportional to the number of adolescent girls per village as the village with the highest number of adolescent girls contributed more adolescent girls to the study and vice versa. The table below illustrated the size of sample size determination.

Village	**Total population**	**Number of adolescents**	**Number of adolescent girls**	**Sample representation**
Kasamba	2, 267	771	386	39
Chipula	2, 064	702	356	36
Unyolo	1, 589	541	271	28
Kalulu	1,155	393	197	20
Chingawa	829	282	141	15
Galeta	842	287	144	15
Phuka	1,328	452	226	27
TOTAL	**10,074**	**3,428**	**1,721**	**180**

Table 3.1 total population and sample representation

This gave total of 180 adolescent girls as respondents which is a good representation of the target population (Kothari, 2014). All the adolescent girls were gathered at one place in the respective villages then the simple random sampling method was used by lottery method where pieces of paper were written numbers and those who picked a paper with an ordinary number was included in the study if consented.

3.9 Research Instruments

The study used semi-structured questionnaires and Focused Group Discussion (FGDs) as prime methods of collecting data. An FGD involves gathering people of similar backgrounds or experiences to discuss a specific topic of interest in this case all the adolescent from the study area were involved. This is so because these methods

complement each other in such a way that ideas are generated and in depth understanding of respondents' views, perceptions, experiences, values, beliefs, expectations and reactions about a phenomenon are expressed and noted in a way in which would not be feasible using other methods.

3.10 Pre-test of Data Collecting Tools

Pre-test of the data collecting tools was done to validate and check the feasibility of the research tools. The Pre-test was done in the two purposively selected village at Bembeke Community in Dedza district as they are believed to share the same characteristics with the study population as these villages lie along the same M1 road bordering Malawi and Mozambique and also that Bembeke is the busy trading Centre as well just like Tsangano Turnoff.

The pre-test aimed at assessing the relevance, clarity, accuracy and flow of questions asked so that the maximum time to be allocated for each tool was deduced as well checking the clarity of the instructions to the respondents.

3.10.1 Validity of the study tools

Validity simply means the ability of a test to do what it purports to do (accuracy) as a result permits appropriate interpretation of test scores. The study used content validity to and study tools were pre-tested before use to assess their validity through expert reviews.

3.10.2 Reliability

Reliability is about being able to produce the same findings when examination is done in more than once in this case the study tools should be able to produce the consistence results on different repeated trails. The Pre-test of the data that was done at Bembeke

Community in Dedza district helped to show the reliability of the collected data if it was able to produce the similar results.

3.11 Data Collection

Semi- structured questionnaires to collect quantitative data was utilized. The questionnaires were administered to every third adolescent girl who was available at the meetings which were conducted.

Focus Group Discussion (FGD) guides was used to collect qualitative data. Two FGD was conducted in the one at Chipula Local Education Authority (Primary) School and the other one was conducted at Redemption Private Secondary School. These FDGs had a representation of all the selected villages as most of the adolescent girls from the selected villages go to these schools. Each FGD consisted of 12 adolescent girls who were purposively recruited by using the ones selected among the remaining group of those picked to do quantitative data on that particular day. The researcher was the facilitator while research assistants were there to take notes. For full and active participation, participants sat squarely for at least 1hour 30 minutes discussion and notes of the discussion were taken for later transcription.

3.12 Data Analysis and Management

The data that was collected qualitatively during the FGD was transcribed verbatim into Microsoft Word and thematic content analysis was done. The quantitative data that was collected through questionnaires was coded to enable appropriate computer entry after being checked for completeness. Besides, the data was managed using the Statistical Package for Social Sciences version 22.0. Analysis proceeded in two steps. First,

univariate descriptive statistics were used to describe sample characteristics and estimate contraceptive prevalence among the adolescents. Contingency table methods were used to test associations between independent (categorical) variable and utilization of contraception using chi square and the odds ratio.

3.13 Research Ethical Committee Approval

3.13.1Ethical Considerations

- Before data was collected, Kenyatta University Graduate School approved. Ethical clearance was sought from the National Commission for Science and Technology (NCST) in Malawi. Authority to conduct the study was given by the District Commissioner for Ntcheu.
- Consent was also sought from the Village Headmen of the villages where data was collected.
- Consent was also sought from the head teachers for both Chipula Primary School and Destiny Private Secondary School.
- Consent was sought from participants who were over 18 years old and assent was sought from the participants who were below 18 years being enrolled into the study.

3.13.2 Consent for Questionnaires and Focus Group Discussions

Before data was collected, respondents were informed that they have the right to take part in the study voluntarily and that they were free to withdraw or refuse to participate at any stage of the study without being reprimanded. Informed consent was obtained from each and every participant before administration of the questionnaires and that they were

assured of privacy and confidentiality by the use of codes and not real names. When the questionnaires have been completed, they were put in the envelopes and sealed and kept in a lockable cabinet which was accessible by only those directly involved with the research.

Knowing that adolescent girls have different needs at different age, they were stratified in two groups of those aged between 10-14 years old were separated from those aged 15-19 during Focus Group Discussion to allow them to freely express themselves. Permission was sought to have the discussion recorded.

3.13.3 Consent from Adolescent girls below 18 years

According Ministry of Health and Intra health International (2010), there is no age restriction or need for parental or spousal consent for adolescents to access the reproductive health services including contraception. It further states ‘adolescents need to know about contraception without parental or spousal consent’. This includes access and utilization of contraception. On modern contraception, there is no clear age limit for adolescents to access the commodity; nevertheless, it will fall under the general contraception as the guide clearly stipulates that there are no contraindications for modern contraception methods for unmarried adolescent girls. However, assent was sought from the participants themselves who are less than 18 years before being enrolled into the study.

CHAPTER FOUR: RESULTS

4.0 Introduction

Chapter four shows data analysis results and presentation

4.1 Characteristics of the study participants

A total of 180 participants were randomly selected from the seven participating villages in the area of Tradition Authority Njolomole in Ntcheu district which was the study area of which 100 percent of questionnaire return rate was obtained. Pilot study to test the reliability of the research instruments was conducted at Bembeke Community in Dedza District as the location has similar characterizes to the research area.

Most the study participants were between the ages of 15 and 19 years 127 (65%) and only 63 (35%) were between 10 and 14 years old. The study was dominated by primary school students 129 (72%) while secondary school students were only 51 (28%). Majority of the respondents were living with parents 171 (95%) while only 9 (5%) were living with significant other. Majority of the study respondents were Christians 174(97%) and only 6(3%) were Muslims (Table 4.1).

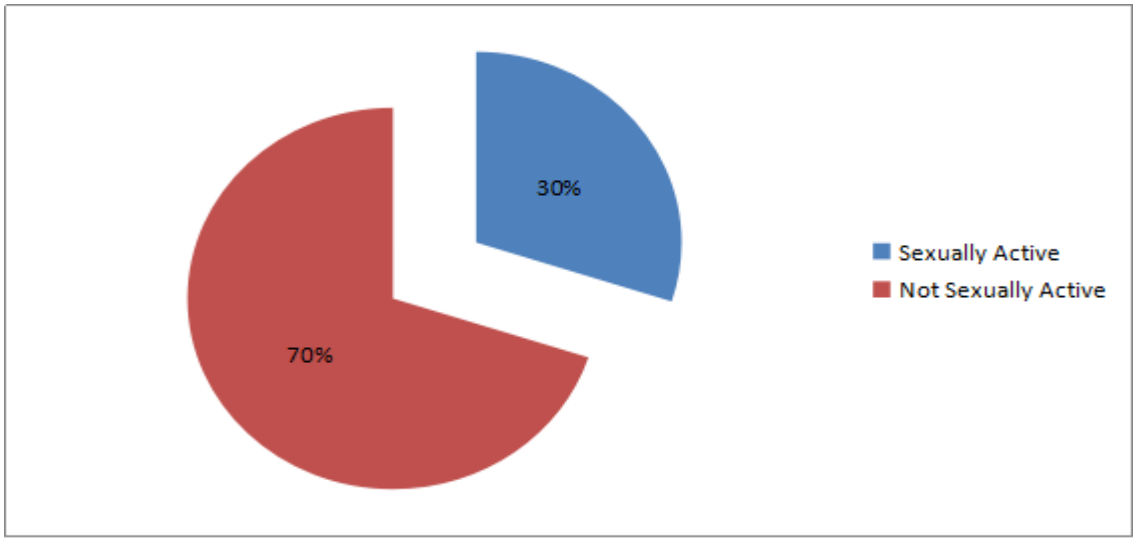
Table 4.1 Demographic Characteristics of the study Participants

Attribute	Frequency (n=180)	Percentage (%)
Age category (Years)		
10-14	63	35
15-20	127	65
Education		
Primary	129	72
Secondary	51	28
Live with parents		
Yes	171	95
No	9	5
Religion		
Christian	174	97
Muslim	6	3

4.2 Proportion of contraception among adolescent girls

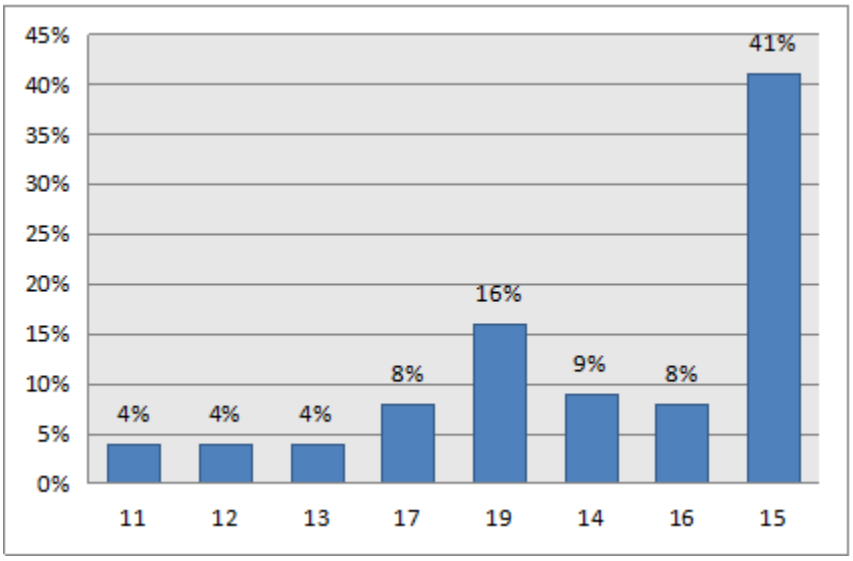
Out of the total respondent 30% (54) were sexually active while 70% (126) were not.

Figure 4.1 Sexually active respondents



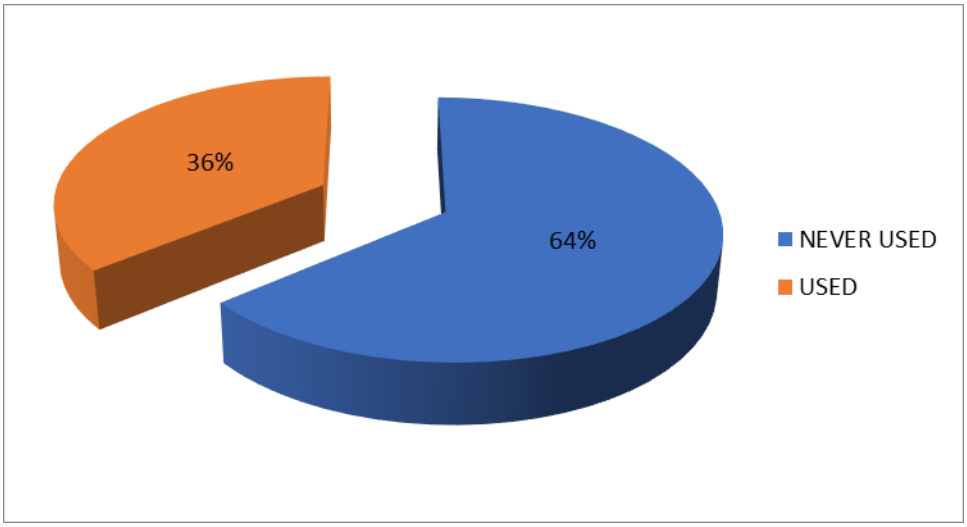
In figure 4.2 Age at first sexual intercourse is a very important variable in this study. The figure below shows that most of the respondents started having sex at 15 years (41%), followed by who 19 years (16%) the youngest stared at 11 years (4%)

Figure 4.2 Age at first sexual intercourse



In figure 4.3 Proportion rate or of modern contraceptives among sexually active respondents. 36% (16) reported using modern contraception.

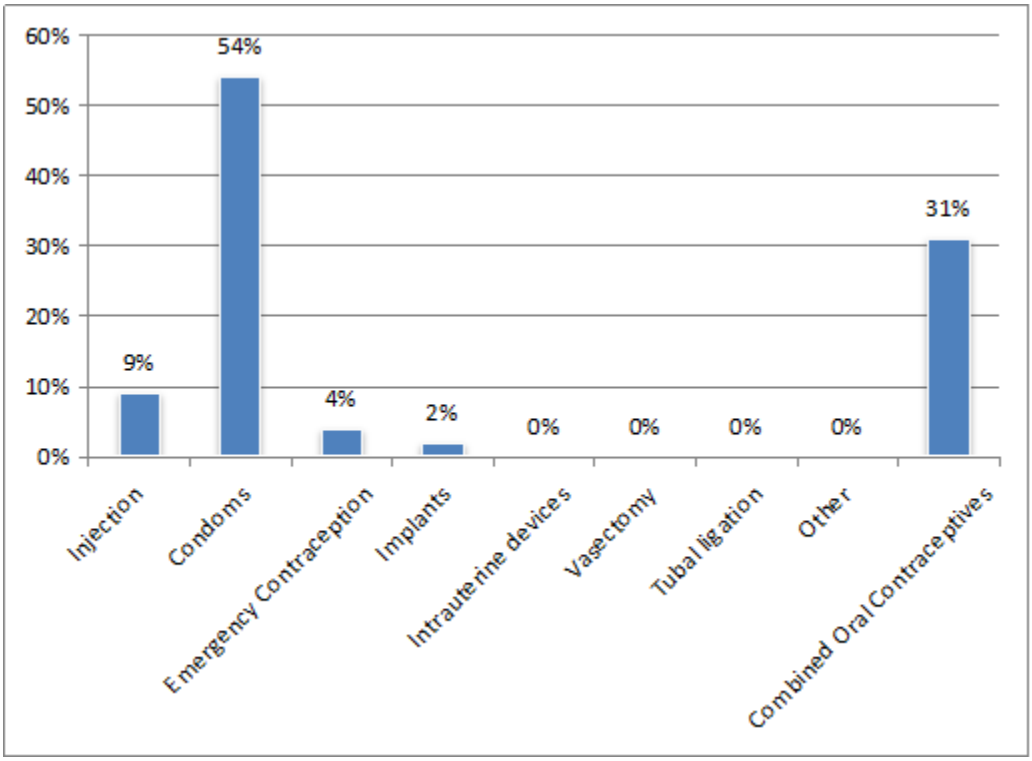
Figure 4.3 Prevalence of modern contraceptive among sexually active respondents



4.2.1 Methods of Modern Contraception used by the respondents

Out of those who said they ever used modern contraception, condoms dominated (54%) followed by combined oral contraception pills (31%), injection (Depo Provera) was 9%, Emergency Contraception (EC) 4%, implants 2% however, the Intra Uterine Device (IUCD) or tradition methods were not used.

Figure 4.4 Methods of contraception used



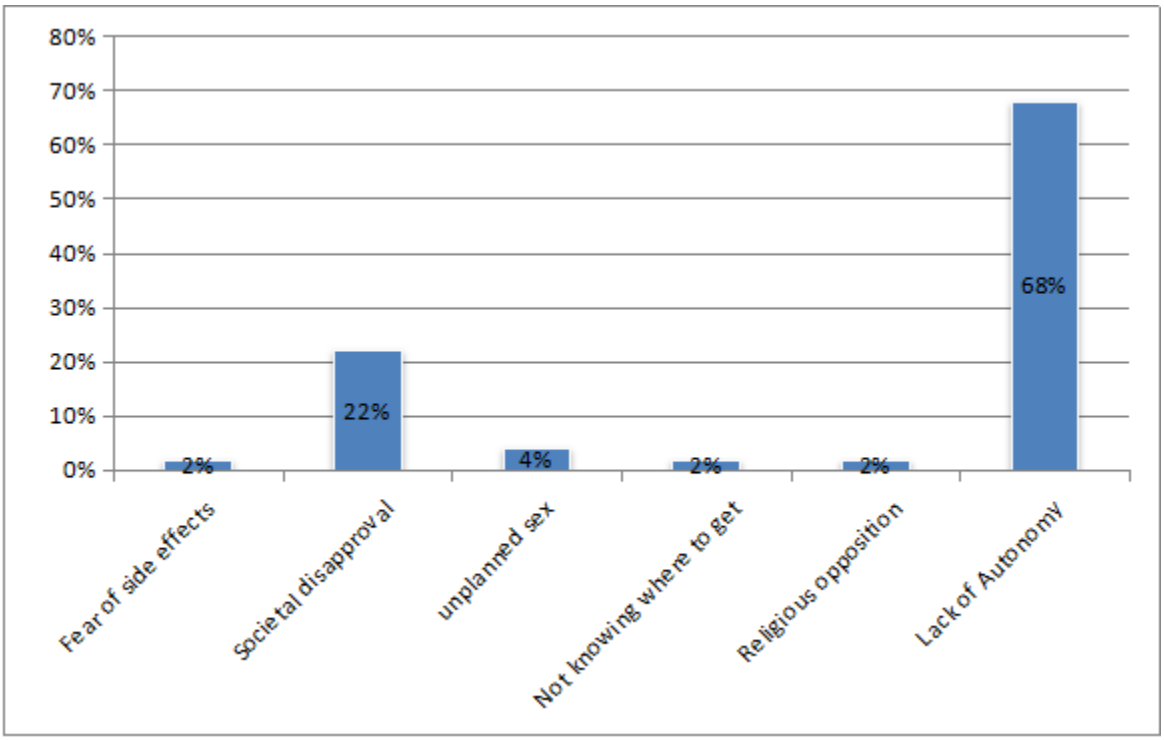
4.2.2 Reasons for non-use of modern contraceptives by respondents

Out of the 54 respondents who reported to be sexually active, 64 percent reported that they are not using any method of modern contraception. The reasons mentioned for not using modern contraception method, were lack of autonomy (68%), societal disapproval (22 %), having unplanned sex 4% and fear of side effects 4%, not knowing where to get the contraception and religious opposition (2%).

" I have a sexual partner and I don't use any contraception method because I am ashamed of going to the hospital to ask for one, you know how people look at a young girl at a family planning queue, so I prefer just staying and be ready of whatever comes though am afraid of getting pregnancy" **Girl 1**

" *I want to agree with the first girl, our society do not approve of sex before marriage so it is very difficult for unmarried girl to go for family planning method knowing how judgmental those older ladies might be when they see you queuing together with them for contraception*" **Girl 2.**

Figure 4.5 Reasons for non-use of modern contraception



4.3 Knowledge on modern contraception among adolescent girls

When asked whether they had ever heard of modern contraceptives 74% (133) of the respondents reported to have heard of contraception while 47 (26%) failed to say something on modern contraception. Out of those who reported to have knowledge on modern contraception 121 (90.8%) knew that they protect one from getting pregnant and only 11 (7.2 %) knew that modern contraception protects a woman from getting pregnant and sexually transmitted diseases especially the condoms.

Table 4.2 Knowledge on Contraception among the respondents

Attribute	**Frequency (n=180)**	**Percentage (%)**
Ever heard of contraceptives		
Yes	133	74
The drug for preventing pregnancy	121	90.9
The drug that prevents a woman against pregnancy and sexually transmitted infections	12	9.1

4.3.1 Level of knowledge on modern contraception

On this section the researcher sought to know how well the participants knew about modern contraception. The level of knowledge was categorized into three, low, medium (average) and high and those participants the who mentioned more than three methods of contraception were regarded as having adequate knowledge , those who mentioned below three methods of contraception were regarded as having medium knowledge and those who mentioned only one method were regarded as having little knowledge. All the 54 respondents who utilized all of them had knowledge on contraceptives. It has shown that with knowledge are four times more likely to use modern contraceptives than their counterparts without knowledge (OR= 4.121; 95% CI (1.533-11.08); $P < 0.001$.

The results show that the level of knowledge was highly significant both statistically and clinically with the utilization of modern contraception among adolescent girls

Table 4.3 Association of level of knowledge on modern contraception among the respondents

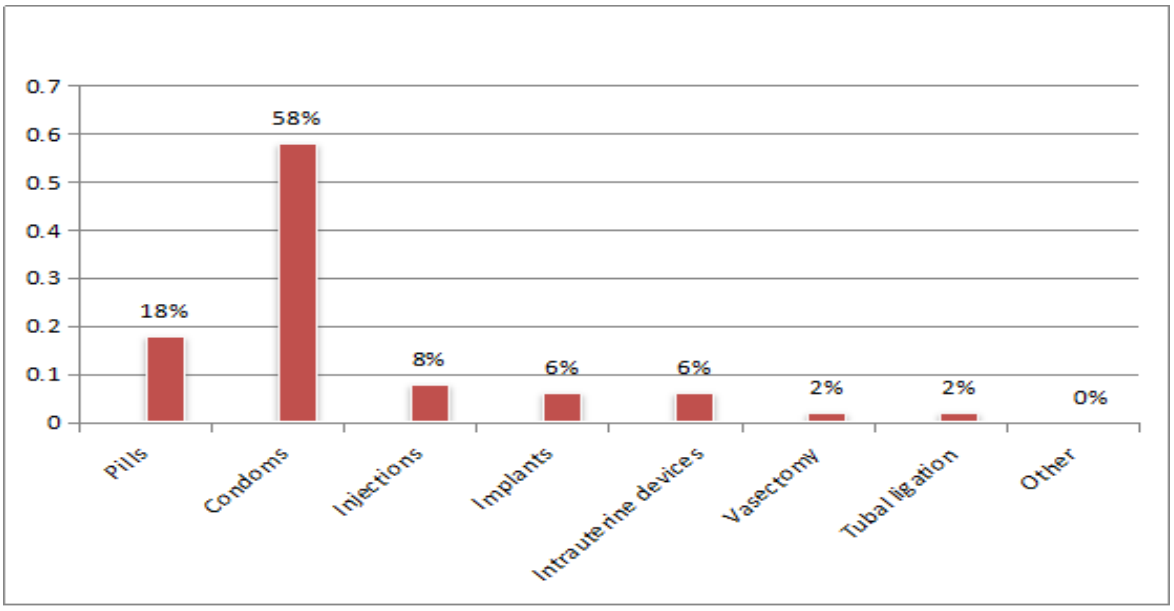
Variable	Utilization		OR	95% CONFIDENTIAL INTERVAL		P-value at 0.05 (χ2)
Knowledge level				**LOWER**	**UPPER**	
• Has knowledge	54(40.6%)	79(59.4%)	4.121	1.533	11.08	≤ 0.001
• No knowledge	0 (0.0%)	126(70.0%)	**REF**			

4.3.2 Method of modern contraception used by the respondents

Figure 4.6 shows the method of contraceptives used by the respondents.

Condoms were the most commonly used method of contraception (58 %), followed by pills, (18%), injections (8%), implants (6%), vasectomy and tubal ligation were both mentioned by 2%.

Figure 4.6 Types contraceptives used by the adolescents.



4.4. Sociodemographic characteristics that determine utilization of modern contraception among the respondents

The table 4.4 represents one of the sociodemographic factors (Age) and modern contraception utilization among the sampled adolescent girls. The results showed that uptake of modern contraception increased with age (age is highly significantly associated with utilization statically) the odds shows that those girls with higher age levels (15-19 years) are more likely to utilize contraceptives ≥1.5 times than those with lesser age (10-14years) (OR=1.561; 95% CI 1.386-1.758; P≤0.001).

"*I am 13 years old, I am an orphan living with my grandmother I sleep with a certain man who provide for us but I don't use modern contraception because I feel that am very young* **"Girl 1**

"I am 14 years old, I have a boyfriend whom I once slept with but I did not use any contraception because I was afraid to go to the hospital to request for it as I was afraid that they will shout at me since am very young," ***Girl 2***.

"I am 19 years old and I have a child of which I got when I was still in standard 7 when I was 14 years old since I couldn't use modern contraception because I thought I was young for them. After I gave birth and returned to school, I now use pills for protection against unplanned pregnancy because I learnt my lesson and now, I just want to concentrate on education" Girl 3

Education another most important value in the sociodemographic factors affecting utilization of modern contraception among adolescent girls. Education is significantly associated with utilization of contraceptives. As a person advances in education the more the utilization of modern contraception is achieved as shown by the table 4.4, there is statistical significance between education and utilization of modern contraception. The odds of utilizing modern contraception is more than three times higher in the respondents with higher education (Secondary) than their counterparts with lesser education (Primary) (OR= 3.869; 95% CI 2.869-3.972; P < 0.05) despite that the most respondents of this study were from primary school, majority of the respondents who reported to be using contraception were secondary school respondents 55.5% (17) and those from primary school were 14% (8) from primary school reported to have ever used or are using modern contraception despite the fact that their population was large as compared to secondary school students.

"I am 15 years old and still in primary school because I was pregnant last year but unfortunately my baby did not survive so I had to return back to school and since then I have been using injection (Depo) to protect myself from pregnancy so that I can continue with my education" ***Girl 4.***

"I am in form 3 but I have a boyfriend who is paying for my school fees and we frequently have sex so am using injection now to protect myself from unwanted

pregnancy but he doesn't know I use any family planning method because he once said he want a baby," ***Girl 5.***

"I first had a boyfriend when I was in standard 6 some 4 years ago but I never used modern contraception because I thought I won't go far with education, but now since I am in secondary school I reason differently now and that I want to go further with my education so now I use them" ***Girl 6.***

Table 4.4. Association of sociodemographic factors and utilization of modern contraception

Characteristics	**Frequency(n)**	**Utilization**		**OR**	**95% CI**		**P Value (χ2)**
Age in years		**Used**	**Never used**		**Lower**	**Upper**	
10-14	9	3(33.3%)	6(66.7%)	**Ref**			
15-19	45	32(71.1%)	13(29.9%)	1.561	1.386	1.758	
							<0.001
Total	**54**						
Education							
Primary	24	8(14.8%)	18(85.2%)	**Ref**			
Secondary	30	17(55.5%)	13(44.5%)	3.869	2.381	2.972	<0.05
Total	**54**						

4.5 Sociocultural factors determining modern contraception utilization

Sociocultural factors are one of the most important factors in determining modern contraception utilization. Majority of the respondents mentioned religion as an influencing factor in utilizing contraception (21%) followed by values and beliefs (18%), access to information regarding contraception (13%), peer influence (12%), parental support and control (11%) time of sexual debut (10%).

Religion is one of the aspects that determines modern contraception utilization among adolescents as some religious beliefs completely restricts their followers from using

modern contraception as they believe that they are abortificients for example Roman Catholic and Zion churches.

Here is what some of the girls reported;

"I am a Roman Catholic and in our church the priests frankly tell us never to use modern contraception because it's like we are killing or doing abortion but if we want, we should be using natural methods only of which counselling most of the times is conducted in church to couples and in catholic owned clinics. Now you see, a girl who is unmarried cannot go obviously, so it's tough," ***Girl 10.***

"I belong to Zion Church and you know we don't go to hospitals let alone using any medicine so girls from this can't use this modern contraception even though they have sexual partners so this is very difficult for us," ***Girl 11.***

Parents and peers influence adolescent girls' utilization of modern contraception whether positively or negatively. This what some of the respondents reported;

"I am 16 and in form 3, I have a friend who is in college now and she uses pills because she has a sexual partner and she has managed to prevent pregnancy so far so she advises me to do the same in case I find a boyfriend of which I am willing to do," ***Girl 9.***

*"I am 18 years old and I have a 3 years old baby, surely I couldn't have this baby if my parents were there for me, like they advised or counselled me on how to prevent myself from getting unplanned pregnancy but they were never there, all they did was to shout at me for having a boyfriend as a result I resorted into spending much time with my boyfriend eventually got myself pregnancy****" Girl 7***

"I am 19 and in form 3, I have a baby which I gave birth to when I was in form one because I did not know that I can use contraception even though I was not married but after that my mother who works with the Ministry of Agriculture advised me to use contraception now so that I can make my future even though she is mad at me that she dumped me here in the village but I want to prove her wrong this time around," ***Girl 12.***

Culture is another aspect that determine contraception utilization among adolescent girls. This is so because if the culture is against premarital sex then an unmarried adolescent will find it difficult to access contraception as they will be afraid of being label promiscuous. This is what some of the girls had to say;

"I am 17 and in standard 8 because I got pregnant when I was in standard 7 and was forced to stay home for good 2 years to raise the child. It's not that I couldn't prevent from becoming pregnant, but I could not use contraceptives for fear of being ridiculed by

the people I will encounter at the clinic as a result I got pregnant and eventually delayed with my education," ***Girl 7***

"I am 15 and I have a boyfriend who provides me with my needs (we had sex of course) and I know he might request for it anytime soon and I don't use any contraception because I don't know how I can access it for fear of being seen by those who know me who might report me to my parents," ***Girl 8.***

"You know what madam, how the older women look at a girl when queued for contraception (laughs) it's something else, it's like you have committed a murder. I once tried but stopped after my news about me in the Family planning clinic was everywhere in my village," ***Girl 9.***

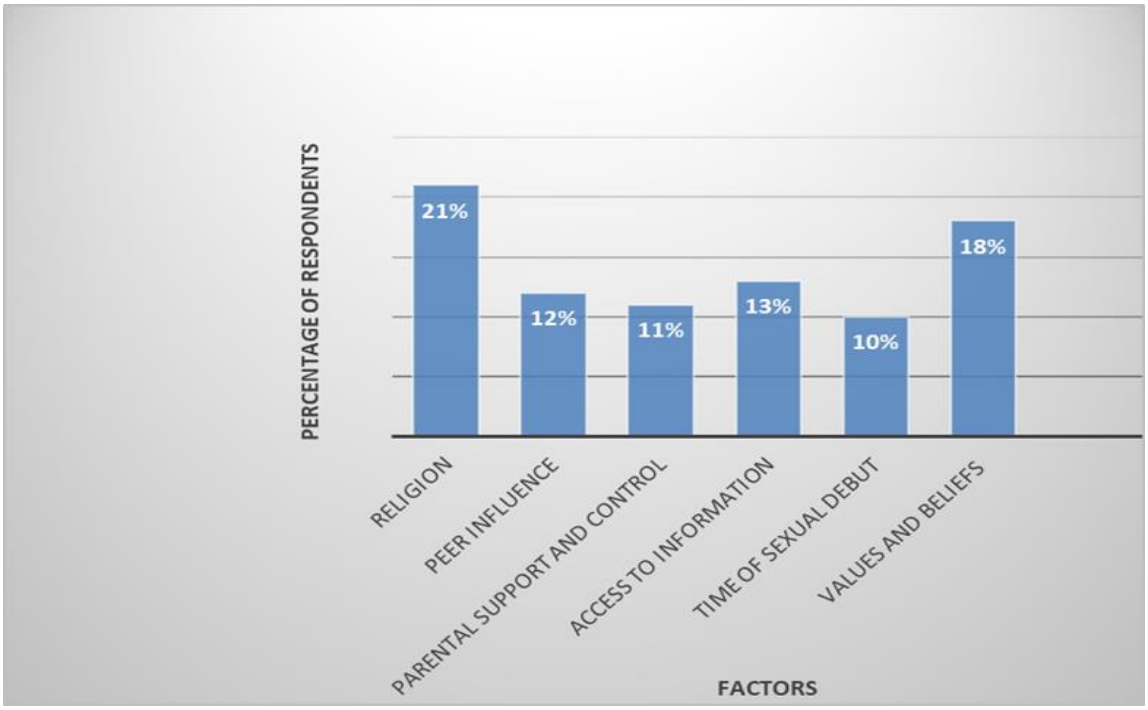
Values and beliefs also have a role to play in the utilization of modern contraception as what one believes in, will act as either as a motivating or deterrent factor in utilizing modern contraception among adolescent girls. This is some of the response respondents gave;

"I am of the opinion that what one believes is the same thing that she will do, as for me I believe that this modern contraception can lead to one being unable to have a child when time is now ripe for you have one as such, I don't think I can use these methods" ***Girl 11.***

However, another respondent had this to say in contrast to girl 11

"I believe in the beauty of my dreams, I want to be a medical doctor but on the other hand I have a boyfriend who I sleep with at times as such I use condoms to protect myself from unplanned pregnancy and sexually transmitted infections" ***Girl 12.***

Figure 4.7 Sociocultural factors determining utilization of modern contraception



The results showed that culture had no statistical significance in relation to utilization of modern contraception among the respondents (OR= 1.20; 95% CI -5.96-1.384; P> 0.808). However, the results had clinical significance as those respondents who were less rooted in culture were 1.2 times more likely to utilize modern contraception than those who were deeply rooted in culture.

Values and beliefs had no statistical significance in relation to modern contraception utilization (OR=1.6; 95% CI 0.235-3.768; P>0.0475). These results had a clinical significance as those respondents who valued a better future were more than 1.5 times more likely to utilize modern contraception than those who were not. However, religion had both statistical and clinical significance as those respondents who belonged to other

churches were more than 4 times more likely to utilize modern contraception than those who belonged to either Zion or Catholic church. (OR=4.421; 95% CI 1.874-7.692; p<0.05).

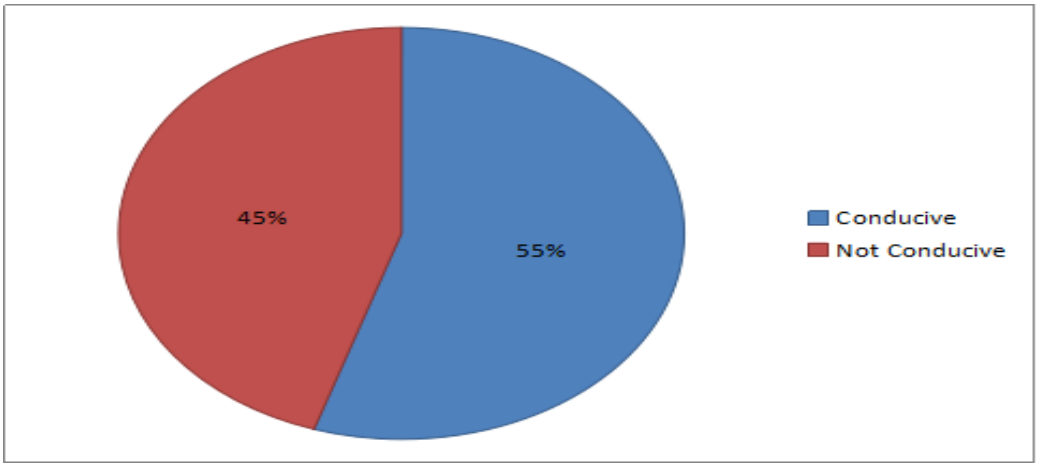
Table 4.5 Association of sociocultural factor (independent variable) and utilization (dependent variable)

Variable	**Utilization**		**OR**	**95% CONFIDENCE INTERVAL**		**P-value at 0.05 (X^2)**
Culture	**Used**	**Never used**		**Lower**	**Upper**	
• Strongly agree	3(30.0%)	7 (70.0%)	1.20	0.272	5.351	**0.804**
• Disagree	15(34.1%)	29(65.9%)	**REF**			
Values and belief	**Used**	**Never used**				
• Strongly agree	15 (62.2%)	8(37.8%)	2.20	1.675	3.523	**0.497**
• Disagree	19(61.2%)	12(38.8%)	**REF**			
Religion	**Used**	**Never used**				
• Zion &Catholics	3(27.2%)	8(72.8%)	**REF**	1.012	5.378	**0.009**
• Others	31(72.1%)	12(27.9%)	4.673			

4.6 Health systems related factors determining contraception utilization among respondents

On whether the health facilities are conducive for the respondents to access modern contraception 99 (55%) reported that they are while 81(45%) said that they are not conducive (Figure 4.8)

Figure 4.8 Conduciveness of health facilities to modern contraception



The following are the reasons given by those who said the health facilities are not conducive. Out of 81, 32(40%) said that healthcare workers are unfriendly, another 32 (40%) said that the health facilities have no confidentiality and 17(20%) said that the health facilities working hours are not conducive for them as they collide with classes

"I remember on day when I went to the hospital for contraception, I came back without getting any because I saw my mother's friend on the line to Family planning room of which I knew if I am to sit on the same line definitely she could have told my mother so as a result I just returned home ***"Girl 9.***

"I am 15 years old, one day I went to the hospital for contraceptives and a nurse asked me if am married or not and when I said am not, she said then what do I need contraceptives for (with a very negative attitude) much as she gave me the contraceptives but I will never go again coz I was judged" ***Girl 10.***

"I think they should train health care workers who are familiar with handling adolescent girls when it comes to issues concerning SRH because at one point you meet someone who is ready to help you and you go other day you even regret why you went to that hospital in the first place" ***Girl 1.***

"Even if these other services are available, timing is another challenge because mostly these health facilities open concurrently with school time so maybe they should consider at least once or twice a week having the facility opened at lunch hour and communicate to the school going girls to utilize the chance" ***Girl 7.***

"There should be special rooms allocated to adolescents for privacy sake as you know sexual and reproductive health issues are sensitive and that will promote us to utilize the services including this modern contraception you are talking about" ***Girl 7***

Figure 4.9 Reasons for the health systems not to be conducive for the respondents

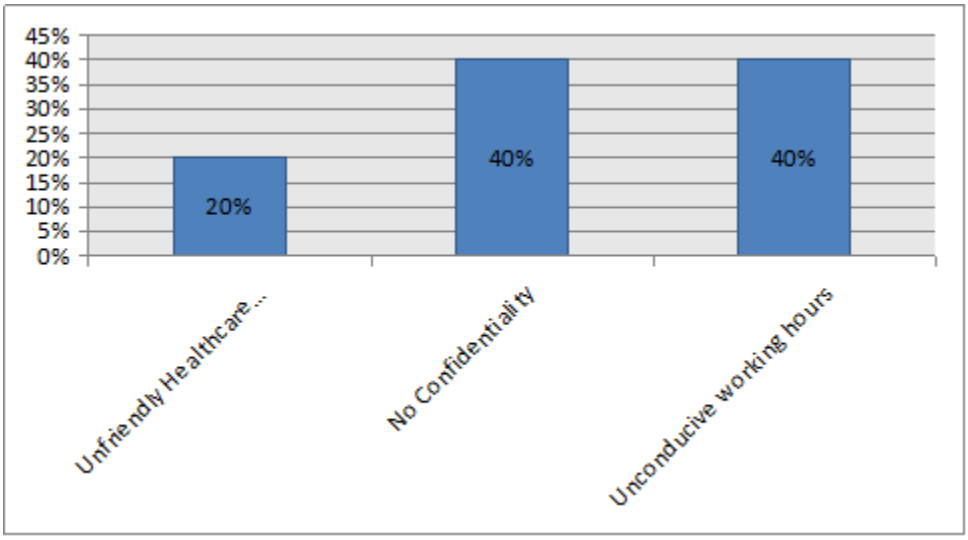


Figure 4.5.3 are responses on the availability of their preferred modern contraception commodities by the respondents , 79 (44%) reported are always available while 68 (38%) reported that they are not always available, 9 (5%) were not sure, 11 (6%) reported to have no knowledge whether they are available or not. On the other hand, 15 (8%) respondents of the total sampled respondents did not respond to the question.

"At times you find that some of the contraceptive methods are not always available like emergency contraception as a result we just return without having any. Some of us get injections but for some of us who do not always sleep with our boyfriends we feel that using depo is just giving yourself unnecessary trouble so as result we just return without having any method" ***Girl 6.***

"The most available contraceptive methods found at our health facility is Depo (injection) which has so many side effects than these other contraception and this puts at a disadvantage as we just use though we know of the consequences, my plea is for the government to make sure adolescent friendly methods are available for our convenience sake especially the Emergency Contraceptives as you can use per need arise" **Girl 3**

Figure 4.10 Availability of preferred methods as per respondents.

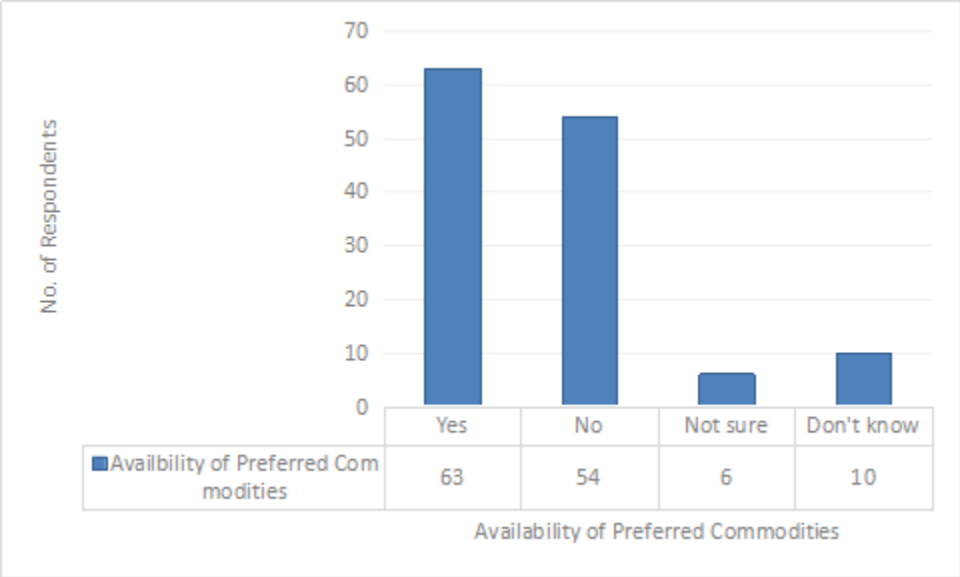


Table 4.6 is the association of health systems factors (independent variable) and utilization (dependent variable). The results showed that the health systems factors have no actual significance in relation to utilization of the modern contraception as the results as the healthcare workers attitude (OR= 1.20: 95% CI -596-1.384: P >0.05. The results have no statistical significance on utilization among adolescent girls but it has clinical significance as the odds showed adolescent girls are more likely to utilize modern contraception when they perceive that healthcare workers have good attitude (OR=1.2) than when they have bad attitude. Similarly, availability of their preferred modern contraceptives has no actual significance (OR= 2.20: 95% CI 0.167-5.32: P >0.05) but clinically there was significance as the odds of utilizing the modern contraception among adolescent girls is > 2 times more than when preferred methods are unavailable. Health facility conduciveness, had actual significance on adolescent girls' modern contraception (OR 0.550: 95% CI 0.171-1.771: P >0.05).

Table 4.6 Association of health systems (independent variables) and utilization (dependent variable)

Variable	Utilization		OR	$\chi 2$	95% CONFIDENCE INTERVAL		P-value at 0.05
Attitude					LOWER	UPPER	
• Good	3(30.0%)	7 (70.0%)	1.20	0.061	0.272	5.351	>0.05
• Bad	15(34.1%)	29(65.9%)	**REF**				
Availability of contraceptives							
• Contraceptive available	3 (21.4%)	11(78.6%)	2.20	0.660	0.527	9.17	>0.05
• Contraceptives not available	15(37.5%)	25(62.5%)	**REF**				
Friendliness of health care environment							
• Conducive	8(42.1)	11(57.9%)	**REF**				
• Not conducive	10(28.6%)	25(71.4%)	0.550	1.20	0.171	1.771	>0.05

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter the researcher will discuss the findings of the study in relation to the reviewed literature, conclusions and recommendations. The discussion in line with the study objectives according to the findings.

5.1 Discussion

5.1.1 Prevalence of modern contraception

5.1.1.1 Sexual Activity

Generally, the study discovered that 30% of the adolescent girls in the study area were sexually active peaking at 15 years (41 %) and some few even started as early as 11 years old (4%). This is comparable to the findings of the study done in Kiruri Town Council using a structured questionnaire among secondary School adolescent girls where it reported that the median age at first sexual intercourse to be at 15 years (Murigi, 2014).

However, the Malawi Demographic and Health Survey reported that the median age for sex for adolescent girls is 17 years (62.3%) with a few having started sex before 15 years (12.8%) (MDHS, 2015/16). The most notable factor contributing to early sexual debut in Malawi is education as the studies have shown adolescent with little or no education are eight times more than those adolescent girls with more than secondary education (MDHS, 2015/16). This is quite similar to the findings from Kenya by the Kenya Demographic and Healthy Survey (KDHS) which reported that the mean age of sexual debut is 18 years (KDHS, 2014).

Factors contributing to early sexual debut include transactional sex (sex in exchange for money usually done by unmarried people), intergeneration sex (relationships as constituting partnership age gaps of ≥ 5 and 10 years) and lack of youth friendly health services (Mwale & Muula, 2018).

5.1.2.1 Prevalence of Modern Contraception

This study shows that adolescent girls start having sex at a very tender age (as early as 11 years old). However, despite these findings, modern contraception utilization among sexually active unmarried adolescent girls remains very low (36%). The results agree with the findings of Njoroge in Kenya in a study at Jomo Kenyatta University of Agriculture and Technology where it was reported that modern Contraception utilization was only 34.2 % of the sexually active respondents (Njoroge, 2016). Similar results were reported in the Eastern part of Ethiopia which reported that modern Contraception utilization is still low at 39.3% among adolescent girls (Ansha, Bosho & Jaleta, 2017). On the other hand, the Malawi Demographic and health survey reported that 26% of the unmarried sexually adolescent girls utilize modern contraceptives. This is far too low from the World Health Organization's target for modern contraception utilization which is 60% (WHO, 2018). In a study done in Tanzania showed that there is also low utilization of contraception among sexually unmarried adolescent girls as it was 26.7%-32% (Atchison et al., 2018). Modern contraceptive prevalence among sexually active adolescents is also low in Cameroon (37.8%), Zimbabwe (34.7%), Democratic Republic of Congo (31.4%), Mozambique (25.4%), Nigeria (22.5%), Zambia (18.0%), Zimbabwe (10.6%) and Kenya (7.9%) (de Vegas Nunes -Coll, Ewerling, Hellwig & de Borros, 2019).

In comparison to the above presented data Guinea Bissau is doing very well as modern contraception prevalence rate for unmarried adolescent girls (68.8 %), followed by Liberia (58.6%), Ghana (58.3%) and Gabon (57.7%) (De Vegas Nunes Coll et al, 2019). These variations may come about either the area of study as it is reported adolescents residing in areas are more likely to utilize contraception than adolescents residing in the rural areas.

5.1.2.2 Modern Contraceptive methods used

This study found that the most commonly used method of modern contraception were condoms (56%) followed by Combined Oral Contraceptives (31%), Depo Provera (9%), Emergency Contraceptives (4%) and implants (2%). The results are in agreement with the results of the study done by Health Policy Project in Malawi where it reported that most female adolescent girls who ever used modern contraception 42% used condoms and another 42% used Depo Provera while the other percentage used Combined Oral Contraceptive 5%. Ott & Sucato reported that the most commonly used contraceptives among adolescents were condoms (96%), followed by withdrawal (57%) while on hormonal contraceptives was combined oral contraceptives (COCs) (56%), followed by depot medroxyprogesterone acetate (DMPA) injection (20%), emergency contraception (EC) (13%), intradermal patch (10%), and the vaginal ring (5%) (Ott & Sucato, 2014). In a study done in USA it was found that most teens report use of contraceptives with sexual activity at least once, most commonly condoms (97 %) or the birth control pill (54 %). Nevertheless, teens are less likely to use a method consistently than adults. When asked if a contraceptive method was used with last sexual activity, 13.7 % of teens reported no method was used, 59.1 % reported condom use only, and only 25.3 % used some form of

hormonal contraceptive (OCP, IUD, implant, shot, patch, or ring). A mere 8.8 % of teens reported dual use of both a condom and hormonal contraceptive with last sexual activity (Mermelstein & Plax, 2016). Virtually all sexually experienced female teens have used some method of contraception. There was an increase in the rate of contraception use among female teens since 2002, from 97.7% to 99.4% in 2011-2015. Condoms remained the most commonly used birth control method among teens in 2011-2015 (reported by 97% of teen females), followed by withdrawal (60%) and the pill (56%) (CDC, 2017). In a study done in Ashanti region, Ghana most of the adolescents (50.0%) deem it appropriate that contraceptive prevent unintended pregnancies as compared to minority of them (5.0%) who did not have any idea about contraceptive methods and their benefits. It was noted that condom known by the majority of the respondents (30%), followed by injectable (25.0%) (Agyemang, Newton, Nkrumah, Tsoka-Gwegweni & Cumber, 2019).

However, the survey which was conducted by the Malawi Demographic and Health Survey reported that the most commonly used modern contraceptive method among adolescents used are injectables (15%) followed by condoms (14%), Implants (6%) and female sterilization (5%) (MDHS, 2015/16). In a study done in Nigeria found the most commonly used contraceptives among adolescent girls in selected secondary schools are oral pills (11.0%), condom (9.3%), Traditional Methods (7.8%), and Emergency Contraception (Postinor) (6.8 %) (Suleiman et al, 2018). In a study done in Poland in 2015, adolescents/young adults tend to believe that hormonal contraceptive methods are the most effective (50%) while others pointed to condoms (21%) and intrauterine contraceptive devices (21%) were deemed less effective by both women (59.5%) and men (39.8%). These findings imply that the adolescents/young adults regarded hormonal

methods as the most effective. Yet, only some 49% of them understood the way contraceptive pills work, with 22% convinced that they are spermicidal, and 19% believing that they induce an early abortion (Skrzeczkowska et al, 2015).

5.1.2.3 Reasons for nonuse of modern contraception mentioned by the respondents

The study found out that the major reason for non-use of modern contraception among adolescent girls is lack of autonomy (68%), societal disapproval (22%), fear of side effects (4%), unplanned sex, not knowing where to get the contraception and religious opposition share 2 % each.

These results are similar to the findings in Kenya where they found out that fear of side effects and adverse reaction, myths and misconception (Using modern methods of contraception lead to promiscuity and straying, they causes infertility) and also shame are the major reasons for young unmarried women give foe them not to be using modern contraception (Ochako, Mbondo, aloo, Kaimenyi, Thompson, Temmerman and Kays, 2015). In another study done in Ghana found most adolescents do not use modern contraceptives because they that contraceptives have health risks constituted the majority (70%), fear of side effects (59.0%) and that religion prohibition of contraceptive use, majority (39.0%) is another major factor for most adolescents not using modern contraception (Agyemang et al., 2019). A study in Nepal stated that lack of autonomy as the major factor influencing adolescent nonuse of modern contraceptives followed by the societal expectations of an adolescent girl bearing a child before marriage (*S*hahabuddin, Nöstlinger, Delvaux, Sarker, Bardají, De Brouwere, and Broerse, 2016). Another study in Iran reported that most common reasons for failure by adolescent girls not using modern

contraception are insufficient familiarity with modern contraception, fear of infertility and fear of possible contraception (Mardi, Ebadi, Shahbazi, Saeieh & Moghadam, 2018).

However Out of the 164 respondents who do not use any type of contraceptives, (53.66%) stated that the side effects of contraceptive accounted for their non-usage whilst 3.66% attributed their non-usage to inconvenience associated with contraceptive use (Health policy Project, 2015). In a study done in Nigeria reported that the main reason for adolescent girls' nonuse of modern contraception are religious beliefs (27%) followed by not knowing that they can get pregnant (23%), myths that having a single sexual partner do not require (13.9%) Suleiman et al., 2018). UNFPA (2013) reported that fear of side effects and the experience of side effects of contraceptive methods are the most common reasons for non-use or discontinuation (UNFPA 2013).

5.1.2 Level of knowledge among respondents on modern contraception

In this study majority of the respondents had general knowledge regarding modern contraception (73.9%). This study discovered that utilization increases with increase in the level of knowledge as it has shown that out of the all the 54 respondents who reported to be utilizing modern contraception all of them had moderate to high knowledge regarding contraception.

The findings showed that utilization is statistically significant to knowledge as those respondents who had adequate knowledge, they were four times more likely to utilize modern contraception than those who had little or no knowledge.

These results are similar to the findings of the study by Murigi (2014) in Kenya which reported that having knowledge on modern contraceptives increases the use by threefold

than those without knowledge (OR= 3.2: 95% CI 1.115-9.183: p<0.025). The study also agrees with the findings of the WHO which states that knowledge about modern contraception is an effective way of reducing teenage pregnancies as adolescents who have knowledge are able to utilize modern contraception (WHO, 2018)**.** Njoroge reported that knowledge and awareness of modern contraception lead to its effective utilization. (Njoroge, 2016). Similar findings were reported in a study which was conducted in the Eastern part of Ethiopia which reported that out of the respondents who reported not to be using modern contraception, 23.7% reported that they lack knowledge on how to use the modern contraception (Ansha, Bosho, Jaleta, 2017). In Cameroon a study reported that utilization of modern contraception is highly significant with knowledge as those respondents (adolescent girls) who were never consulted about family planning services could not utilize the service (OR 2.32: CI 1.29-4.16: P=0.140) (Essiben, 2018). In a systemic review done by the international Centre for Research on Women it was reported that lack of awareness, lack of understanding of family planning methods that includes side effects adversely affects adolescents in utilizing modern contraception as knowledge of reproductive health services and where to access the services is a critical factor in met need for family planning – many adolescents don't know where they can find products and youth-friendly services (Glinski, Sexton & Ptroni, 2014). A systemic review found 85% of adolescents to have interest in the use of contraceptives and did not know where to get the methods and use indicating adolescents' contraceptives unmet needs are still global public and reproductive health challenges to adolescents' contraceptives knowledge and utilization (Skrzeczkowska, Heimrath, Surdyka & Zalewski, 2015). However, a study in Osun Nigeria found that the enhancing factors to utilization of

modern contraception are proper sex education (78.8%), Outreach services (71.5%) and Proper orientation (69.5%) and that there is no statistical difference in the knowledge and utilization of modern contraception ($F=2.394$; $p>0.05$) (Tchokassa, 2018).

5.1.3 Sociodemographic characteristics that determine utilization of modern contraception among adolescent girls

The study found that utilization of modern contraception among adolescent were significantly associated with age as one's age increases utilization of modern contraception also increases (OR= 1.561: 95% CI 1.386-1.758: p≤0.001). The study results are similar to the findings by Murigi et al which reported that adolescents who were 18 years or more were ten times more likely to utilize modern contraceptives as compared to their counterparts of lesser age (P≤0.001; OR= 9.870: 95% CI 3.781-25.763).

Education is another factor that affect utilization of modern contraception among the respondents, as even though majority of the respondents were primary school adolescent girls (72 %) only 35% of the sexually active respondents reported to be using modern contraceptives while 65% of the sexually active adolescents from secondary school reported to be using modern contraception even though they contributed to a lesser number in the study (28%) (OR=3.869: 95% CI 2.869-3.972: p<0.05).

This study's findings are similar to the what the MDHS reported which reported that education has a great impact in modern contraceptive utilization as 84.8% of those unmarried women who had higher education (more than Secondary education) were using modern contraceptives as compared to 81% of those women with no education (MDHS, 2015/16). An analysis of the Malawi 2015/16 DHS reported that Education and age are the significant predictors of modern contraception in Malawi as those women who were 20-24 and also had at least a primary school education were more likely to use modern contraception (AOR = 1.93; 95% CI = 1.73–2.16 and AOR = 1.47; 95%

CI = 1.18–1.83) respectively than their counterparts (Mandiwa, Namondwe, Makwinja & Zamawe, 2018). In Nigeria an analysis of DHS was done which found the similar findings which reported that modern contraception increases with age from 4% among women aged 15-19 years to 17% among women who were 40-49 years. Similarly, education has a very significant impact in the utilization of modern contraception as the study reported that the education of women and their spouses were both found to be statistical significantly associated with utilization of modern contraception ($p \leq 0.001$). It reported that modern contraception prevalence increased with increase in the education of both the spouse and the woman herself as it showed that those with secondary education and/ or more were 8 times more likely to utilize modern contraception than those women without any formal education (Ejembi, Dahiru & Aliyu, 2015). In Ghana reported similar findings found that the women from the older age group (35-40) were 4.33 times more likely to utilize modern contraception than their younger counterparts from the younger age group (15-24) (Manortey & Lotsu, 2017). A study conducted in Nepal also had the similar findings where education proved to be of great importance as far as contraception utilization is concerned as those young men with at least 10 classes or more of education were ten times more likely to use contraception than those without education 53.7 vs 5.3%) (Subedi, Jahan & Baatsen, 2018). In a study that was conducted in 35 low and middle income countries reported that education is a determining factor in modern contraception utilization as those women with the lowest education are 8.6 times less likely to utilize modern contraceptive methods as compared to the women with the highest education (Bellizzi, Sobel, Obara & Termmerman, 2015).

5.1.4 Sociocultural Factors determining modern contraception utilization among adolescent girls

Sociocultural factors were the most mentioned factors affecting modern contraceptives among adolescent girls. These factors include peer influence as the most influential factor in utilizing modern contraception as it constituted 39% of the responses, followed by having a sexual partner and one's values and beliefs (28%), academic aspirations, parental support and control, having financial resources, age at sexual debut, culture and religion are some of the factors mentioned by the respondent to be influencing one to be using modern contraception. Religion was significant as those who belonged to Catholic and Zion denominations were less likely to utilize modern contraception than those from other denominations (OR=4.421: CI 95% 0.874-7.692: $p<0.05$) However, other variables like culture and values and beliefs were not significant (OR= 1.2: 95% CI -0.596-1.384: $p>0.5$ and OR=1.6: CI 95% 0.235-3.768: $p>0.05$) respectively. These results are similar to the findings of Njoroge who did a study at Jomo Kenyatta University of Agriculture and Technology in Kenya which reported that Roman Catholics, Protestants and Muslims were less likely to utilize modern contraception as compared to the respondents belonging to the other religious affiliation as only 5.3% reported to be using contraceptives at the time of study (Njoroge, 2016). Religious opposition is one of the deterrent factors as far as modern contraception utilization is concerned as 23.7% of the respondents who reported to be sexually active but are not using any modern contraception reported in Ethiopia. Essiben in Cameroon reported that religion is one of the influencing factor in the utilization of modern contraception as the results of the study showed that those girls who belonged to Roman Catholic, Protestant and Muslim

reported not to be using any modern contraception at the time of study as the statistical significance was more OR 0.7 (0.72-1.15 CI); *P* value 0.1, OR 1.04 (0.60-1.79 CI) *P* value 0.5 and OR 1(0.18-5.49 CI) *P* value 0.64 respectively (Essiben *et al*., 2018). In Uganda it was reported that family planning services use was affected by religious beliefs and practices as it was discovered that in the community which is dominated by those indoctrinate by Roman Catholics modern contraceptive utilization was very low as they are indoctrined not to use artificial (modern) contraception (Acayo, 2014). In Nepal, evidence shows that deeply rooted socio-cultural norms and beliefs cross-cut different interlinked factors and influence contraceptive utilization among adolescents. This is so because there are restrictive cultural norms around sexuality and that they fear using modern contraception promotes premarital sex. Secondly, family members and other adults for example teachers rarely discuss issues like puberty, changes in the body, sex, and contraceptives with adolescents specially those who are unmarried this is so because these issues are often considered as matter of privacy (Subedi, 2018). In trying to understand adolescent family planning using evidence based, it was reported that cultural taboos for and taboos in communicating about reproductive health issues to adolescents are some of the barriers to utilizing modern contraception among adolescents (Glinski et al., 2014). Chandra-Mouli et al. & Glinski et al. in two different studies reported that unmarried adolescents face challenges as community attitudes toward contraception stem from the stigma around sexual activity. Young people may hesitate to seek family planning services for fear of their communities finding out, and those who do may be refused service by the provider. Although condoms are the most accessible and affordable contraceptive method for most adolescents, in many contexts both boys and

girls can be discouraged from carrying condoms because of their association with promiscuity and distrust (Chandra-Mouli et al., 2014; Glinski et al., 2014).

However, Blackstone analyzed factors determining for low contraception utilization in the Sub Saharan Region of Africa and found out that cultural factors such as men's role in making decisions in a relationship and pressure to bear children had influence on contraceptive use and women are unlikely to use contraceptives if their partners disagree or are being pressured to give birth (Blackstone, 2017). These variations in sociocultural factors are there because Tsangano Turnoff community's culture is (Ngoni) does not deter anyone from utilizing modern contraception (adolescents inclusive) but religion does. The Zion church believers do not take any medication whenever they fall sick let alone modern contraception whereas the Catholics are not allowed to utilize modern contraception but natural methods of which these methods are taught by the clinics which are owned by the church making it impossible for unmarried adolescent to access the services.

5.1.5 Health Related Factors determining Modern Contraception among Adolescent girls.

Health related factors were among the factors that determine utilization of modern contraception among adolescent girls. Among the respondents of this study 99 (55%) reported that the health-care facilities were conducive for the respondents to access the modern contraception while 81(45%) reported that the facilities are not conducive to promote adolescent modern contraception utilization. The respondents mentioned lack of confidentiality, healthcare workers negative attitude, unconducive working hours and unavailability of the preferred commodities as the reasons that affect modern contraception utilization among adolescent girl. This study's results agree with the findings of the Population Service International (PSI) which identified that institutions have limitations to utilization of modern contraception to adolescents as few facility settings are considered youth-friendly. And that most common barriers to access at the institutional level include negative provider attitudes, limited availability of products, and high costs. It also noted that most providers were unwilling or unsure of how to offer services tailored to youth. Unfavorable attitudes toward sex outside marriage and contraceptive use among adolescents and youth, particularly if unmarried, leave many providers negligent toward their young clients' needs. Providers may not perceive their clients to be sexually active and therefore neglect to offer appropriate counseling and services and this attitude affect the service delivery to adolescents hence affecting even modern contraception utilization in the long run. They may judge or stigmatize young clients coming for services, break confidentiality, or only offer certain methods, therefore denying young people of their right to make voluntary and informed decisions (PSI,

2016). Njoroge reported similar findings which reported that accessibility, availability and affordability of modern contraception are some of the factors that influence modern contraception among users Njoroge, 2016). Ansha et al. reported that 15.8% of the respondents (adolescent girls) who were not using modern contraception bemoaned lack of privacy as the reason for their failure to utilizing the services (Ansha et al., 2017).

However, in a study done in Nigeria reported more than half (57.5%) of the respondents perceived the provision of contraceptives for unmarried adolescents as promoting sexual promiscuity. The attitude of 42.7% of them was informed by the Nigerian culture which does not support premarital sex. About half (51.7%), reported that unmarried adolescents should be asked to abstain from sex rather than providing them with contraceptives. Over a third (44.2%) reported that providers should not provide services for both married and unmarried adolescents (Ahanonu, 2014). In a study done in Botswana on a study done on health workers attitude and perception on adolescent contraception reported that three-quarters of the respondents reported that did not often prescribe contraceptive services to adolescents and only 23% of the respondents reported to always prescribe contraceptives to adolescents. This inconsistent prescription of contraceptives to adolescents is attributed to lack of knowledge, health and safety concerns regarding contraceptives, and limited counselling skills by the healthcare workers (Tshitenge et al., 2018). Glinski reported that lack of provider's qualities/competences to providing modern contraception among adolescent, unavailability of appropriate contraceptive methods, stock outs, restrictions on use (some providers denial adolescents long acting methods), lack of privacy and confidentiality are major factors affecting adolescents access and utilization of modern contraception (Glinski et al., 2014). More than half (57.5%) of the respondents perceived

the provision of contraceptives for unmarried adolescents as promoting sexual promiscuity. The attitude of 42.7% of these healthcare workers was informed by the Nigerian culture which does not support premarital sex. About half (51.7%), reported that unmarried adolescents should be asked to abstain from sex rather than providing them with contraceptives. Over a third (44.2%) reported that providers should not provide services for both married and unmarried adolescents (Ahanonu, 2014).

5.2 Conclusion

The study focused on exploring factors that determine utilization of modern contraception of modern contraception among adolescent girls at Tsangano Turnoff Community in Ntcheu District in Malawi. The study discovered prevalence of modern contraception is low despite the fact that adolescent girls are engaging in sexual activities at a tender.

This study discovered that those respondents who were sexually active and had moderate to high levels of knowledge were using modern contraception as compared to their counterparts who had little or no knowledge. The null hypothesis that there is no relationship between knowledge of modern contraception and utilization is therefore rejected.

Sociodemographic factors such as age and level of education play a very significant role in the utilization as it was discovered that the older the respondent (18-19 years old) the more likely she is to utilize modern contraception as compared to the younger respondents. Education is another factor that is very critical in the utilization of modern contraception among adolescent girls as it has been revealed that the higher the education

level the respondent had the more likelihood utilizing modern contraception. The null hypothesis that said there is no relationship between age and education and utilization of modern contraception is rejected.

Sociocultural factors are factors that influence the utilization of modern contraception as parental support and peer influence, culture, religion, values and beliefs are very important affect utilization of modern contraception. This so because supportive parents and peers, accommodative culture and religion can enhance adolescents from utilizing modern contraception. Besides, if one values education of and or/ better future and that her beliefs are not contradictory with the utilization of modern contraception, that adolescent is more likely to utilize modern contraception.

Health related factors that determine utilization of modern contraception utilization include; Healthcare facilities which are crucial in the contraception utilization as the opening and closing hours, privacy, confidentiality and availability of the preferred methods play a vital role in facilitating adolescent girls in either to utilize modern contraception or not. This study revealed that for the adolescent girls to utilize modern contraception the working hours must be adjusted to enable them to access the contraceptives as mostly the working ours collide with the school hours. Privacy and confidentiality are other important factor as the adolescent girls cannot feel free to access modern contraception where their privacy and confidentiality is compromised thereby affecting utilization in a very negative way. The availability of the preferred methods of contraceptives motivate the adolescent girls to utilize modern contraception hence preventing the unplanned pregnancies.

Healthcare workers attitude is as important as other factors as negative attitude from healthcare workers negatively affect the adolescent girls to access and utilize modern contraception. The adolescent girls usually feel terrified to go to the health care facility to seek for any sexual and reproductive health services if healthcare workers are not friendly hence contributing to the low accessibility and utilization of those services including modern contraception. However, even though some of the respondents reported to fail to utilize the modern contraception due to health systems factors, we fail to reject the null hypothesis that said there is no relationship between health systems related factors and utilization of modern contraception.

5.3 Recommendations

1. Ministry of Education, Science and Technology in conjunction with the Ministry of Health to formulate age- specific sexual and reproductive health related information that will help the adolescents to get formal information regarding modern contraception hence promoting its utilization.
2. Knowledge on modern contraception is very important in the utilization of the contraceptive hence since education is one way of empowering the girl child to be a reliable citizen in future therefore the high existing knowledge reported in this study should be encouraged and be related to utilization of modern contraception and other sexual and reproductive health services.
3. Sociodemographic factors such as age and education is important in determining the utilization of modern contraception among adolescents as such peer education should be intensified to educate the fellow peers on the importance of utilizing modern contraception especially those peers who have

gone far with education emphasizing on the importance of girls to remain in school and delaying before they start engaging in sexual activities in order for them to be able to make concrete decision regarding sexual relationships and utilization of modern contraception. This is very important as it has shown that peer influence has a very positive impact in the utilization of modern contraception.

4. Sociocultural factors determines utilization of modern contraception as mostly culture and some religious beliefs are restrictive for adolescents to obtain and utilize modern contraception as such it is important to civic educate the community including chiefs, religious leaders and parents on the importance of sex education and supporting adolescent girls to utilize modern contraception hence making sure that there is an increase in the modern contraception prevalence eventually helping them preventing unplanned pregnancies.
5. Health systems related factors such as opening and closing hours of the health facilities, privacy and confidentiality, availability of the preferred contraceptive methods and attitude of healthcare workers the Ministry of Health (MoH) to train healthcare workers on adolescent- friendly interventions that will motivate adolescent to have the urge and courage to visit the health care facilities and eventually utilize modern contraception. The ministry and other stakeholders such as the USAID to make sure that all the contraceptives such as the Emergency Contraceptives (EC) are always available to give the adolescent girls a wider range of choices to choose from.

However, the best option in preventing unintended pregnancies remains abstinence from premarital sex. If abstinence is failed, then parents, guardians and all stakeholders must take part in encouraging sexually active adolescent girls to utilize modern contraception.

5.4 Future Research

Determine the feasibility and scale up of interventions to inform and empower adolescent girls in the utilization of modern contraception, in combination with interventions to influence family community norms to encourage modern contraception utilization.

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APPENDICES

Appendix I: Consent (Above 18 years old)

I have read and understood the information on questionnaire. I therefore freely accept to take part in this study after being assured of privacy and confidentiality and help facilitate the accuracy and validity of the study by giving the correct information.

PARTICIPANT SIGN…….

FACILITATOR SIGN…….

WITNESS SIGN……..

Appendix II: Assent Form (Below 18 Years)

These are the things I want you to know about this study: I am requesting you to be in this research study. Research is a way to test new ideas. Research helps us learn new things. Whether or not to be in this research is your choice. You can say **Yes or No**. Whatever you decide is **OK**. I will still take good care of you. This study is about modern contraception methods. I am studying about why there are a lot of adolescence pregnancies so I want to know whether you know about modern contraception and if you know what are the factors affecting you not to use them.

I am going to give you a questionnaire for you to fill with whatever information you know regarding the subject matter. There are no risks in this study since your information will be kept confidential and you are not allowed to write your name on the questionnaire. If you have any question please contact **Professor Keraka +254721817521 or Dr. Kabue +254722466297** my supervisors at Kenyatta University.

Instructions

1. Please **do not** write your name on the questionnaire
2. Tick the correct answer in the corresponding boxes (where applicable)
3. Write your answer on the spaces provided for the open-ended questions
4. Answer all questions
5. Please **do not** discuss or share answers
6. Information provided is strictly confidential

Appendix III: Research Authorization of the University

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: Q139F/CTY/PT/38925/2016 DATE: 18th January, 2019

The District Commissioner,
Ntcheu District Council
Private Bag 1
NTCHEU - MALAWI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS. ELLEN CHIFUNDO DAMSON – REG. NO. Q139F/CTY/PT/38935/16

I write to introduce Ms. Ellen Chifundo Damson who is a Postgraduate Student of this University. She is registered for M.P.H. degree programme in the **Department of Population, Reproductive Health & Community Resource Management.**

Ms. Damson intends to conduct research for a M.P.H. thesis Proposal entitled, **"Modern Contraception Utilization among Adolescent Girls in Ntcheu District, Malawi."**

Any assistance given will be highly appreciated.

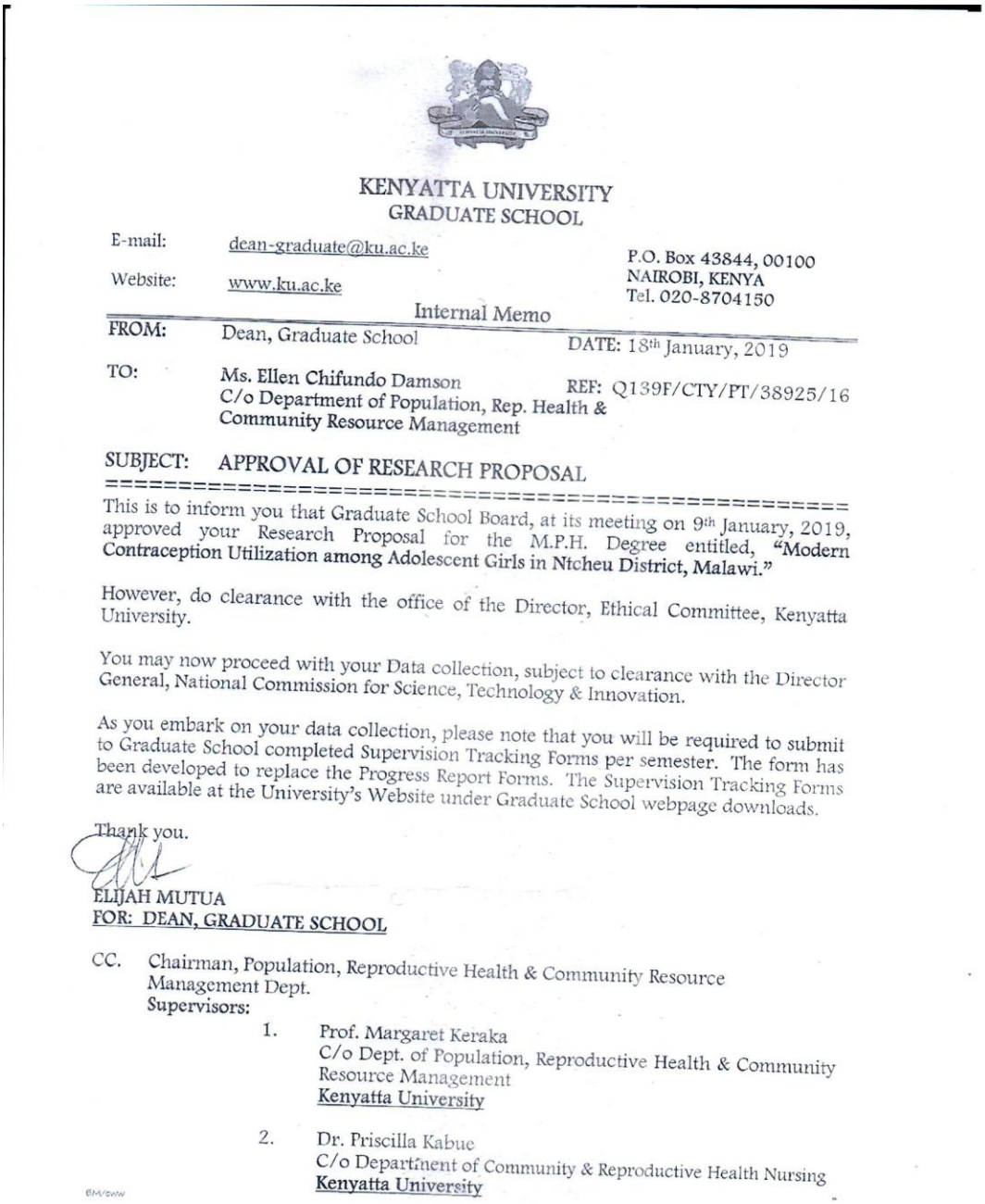
Yours faithfully,

KENYATTA UNIVERSITY OFFICE OF DEAN JAN 2019 GRADUATE SCHOOL

PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

EM/eww

Appendix IV: Approval from Graduate School



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Internal Memo

FROM: Dean, Graduate School DATE: 18th January, 2019

TO: Ms. Ellen Chifundo Damson
C/o Department of Population, Rep. Health &
Community Resource Management

REF: Q139F/CTY/PT/38925/16

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that Graduate School Board, at its meeting on 9th January, 2019, approved your Research Proposal for the M.P.H. Degree entitled, "Modern Contraception Utilization among Adolescent Girls in Ntcheu District, Malawi."

However, do clearance with the office of the Director, Ethical Committee, Kenyatta University.

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

ELIJAH MUTUA
FOR: DEAN, GRADUATE SCHOOL

CC. Chairman, Population, Reproductive Health & Community Resource Management Dept.
Supervisors:
1. Prof. Margaret Keraka
C/o Dept. of Population, Reproductive Health & Community Resource Management
Kenyatta University
2. Dr. Priscilla Kabue
C/o Department of Community & Reproductive Health Nursing
Kenyatta University

EM/eww

Appendix V: Approval Letter from NCST

NATIONAL COMMISSION FOR SCIENCE & TECHNOLOGY
Lingadzi House
Robert Mugabe Crescent
P/Bag B303
City Centre
Lilongwe
Tel: +265 1 771 550
+265 1 774 189
+265 1 774 869
Fax: +265 1772 431
Email:directorgeneral@ncst.mw
Website:http://www.ncst.mw

NATIONAL COMMITTEE ON RESEARCH IN THE SOCIAL SCIENCES AND HUMANITIES

Ref No: NCST/RTT/2/6 **19th January 2019**

Ms Ellen Chifundo Damson

Malawi Police Service,

Private Bag 305,

Lilongwe 3.

Email: eldamson@gmail.com

Dear Ms Damson,

RESEARCH ETHICS AND REGULATORY APPROVAL AND PERMIT FOR PROTOCOL NO. P.01/19/346(B): MODERN CONTRACEPTION UTILIZATION AMONG ADOLESCENT GIRLS IN NTCHEU DISTRICT MALAWI

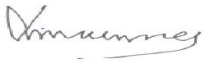
Having satisfied all the relevant ethical and regulatory requirements, I am pleased to inform you that the above referred research protocol has officially been approved. You are now permitted to proceed with its implementation. Should there be any amendments to the approved protocol in the course of implementing it, you shall be required to seek approval of such amendments before implementation of the same.

This approval is valid for one year from the date of issuance of this approval. If the study goes beyond one year, an annual approval for continuation shall be required to be sought from the National Committee on Research in the Social Sciences and Humanities (NCRSH) in a format that is available at the Secretariat. Once the study is finalised, you are required to furnish the Committee and the Commission with a final report of the study. The committee reserves the right to carry out compliance

inspection of this approved protocol at any time as may be deemed by it. As such, you are expected to properly maintain all study documents including consent forms.

Wishing you a successful implementation of your study.

Yours Sincerely,

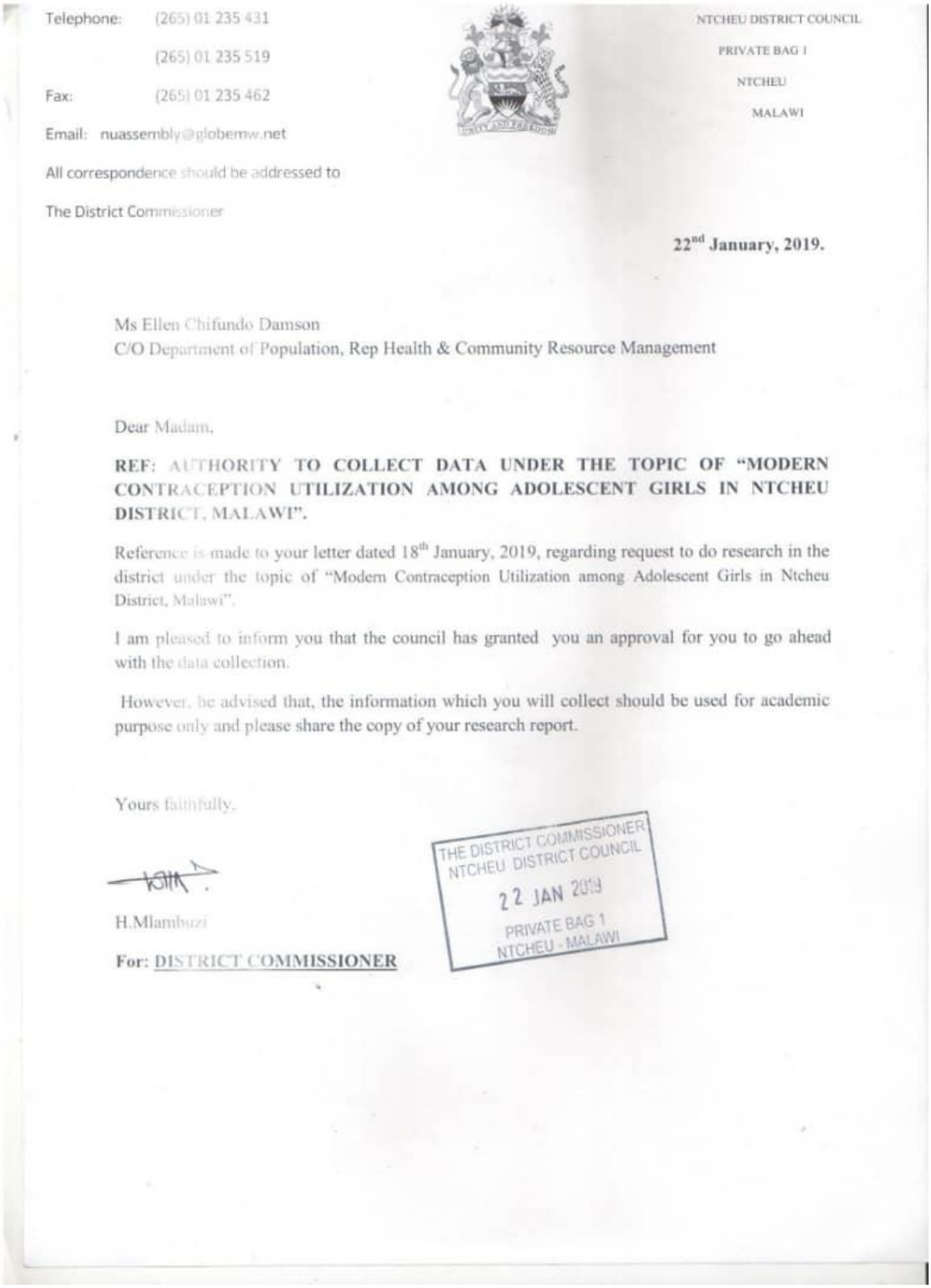


Yalonda .I. Mwanza
NCRSH ADMINISTRATOR
HEALTH, SOCIAL SCIENCES AND HUMANITIES DIVISION

For: CHAIRMAN OF NCRSH

Committee Address:
Secretariat, National Committee on Research in the Social Sciences and Humanities, National Commission for Science and Technology, Lingadzi House, City Centre, P/Bag B303, Capital City, Lilongwe3, Malawi. Telephone Nos: +265 771 550/774 869; E-mail address: ncrsh@ncst.mw

Appendix VI: Approval Letter from District Commissioner Ntcheu-Malawi



Telephone: (265) 01 235 431
(265) 01 235 519
Fax: (265) 01 235 462
Email: nuassembly@globemw.net
All correspondence should be addressed to
The District Commissioner

NTCHEU DISTRICT COUNCIL
PRIVATE BAG 1
NTCHEU
MALAWI

22nd January, 2019.

Ms Ellen Chifundo Damson
C/O Department of Population, Rep Health & Community Resource Management

Dear Madam,

REF: AUTHORITY TO COLLECT DATA UNDER THE TOPIC OF "MODERN CONTRACEPTION UTILIZATION AMONG ADOLESCENT GIRLS IN NTCHEU DISTRICT, MALAWI".

Reference is made to your letter dated 18th January, 2019, regarding request to do research in the district under the topic of "Modern Contraception Utilization among Adolescent Girls in Ntcheu District, Malawi".

I am pleased to inform you that the council has granted you an approval for you to go ahead with the data collection.

However, be advised that, the information which you will collect should be used for academic purpose only and please share the copy of your research report.

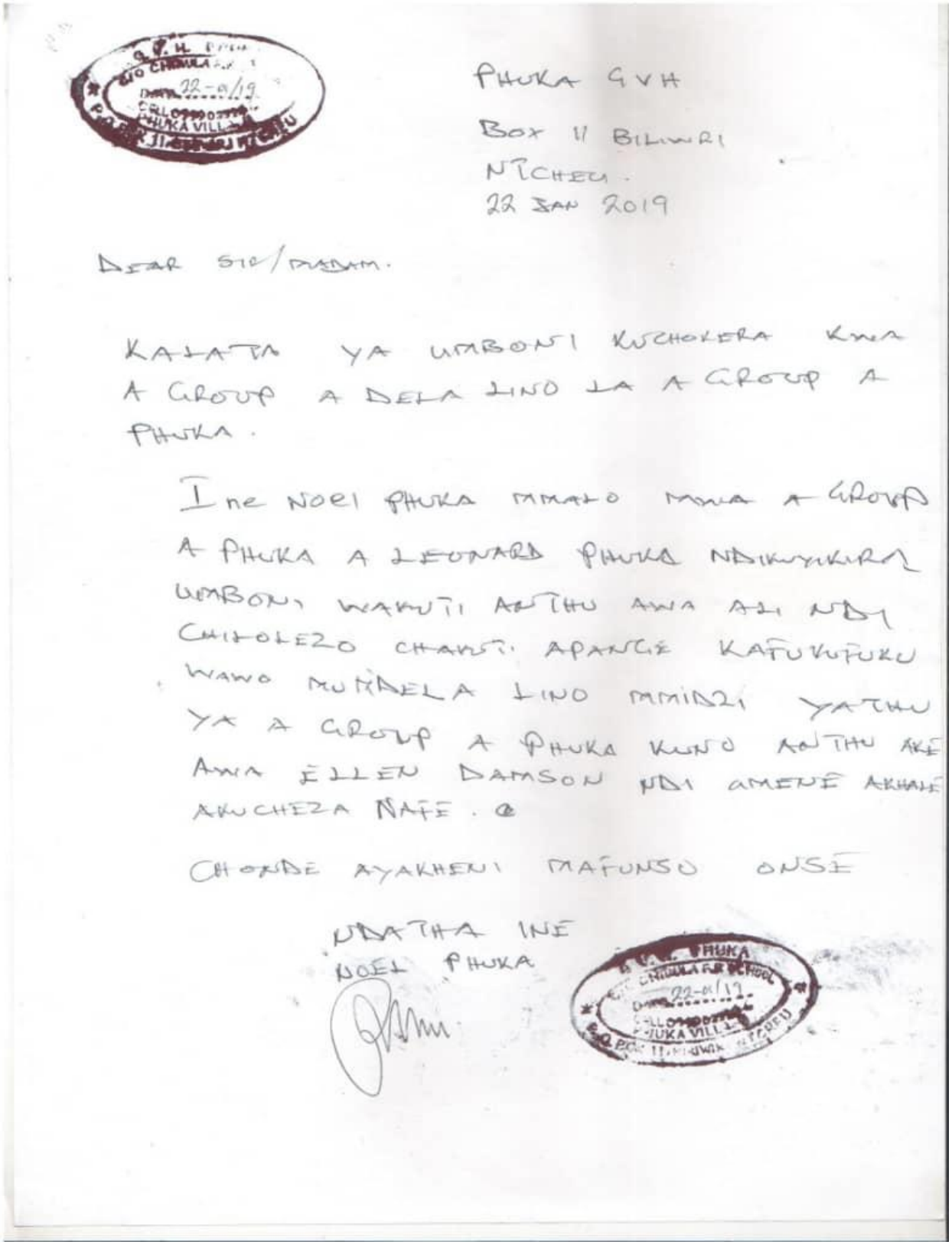
Yours faithfully,

H.Mlambuzi

For: DISTRICT COMMISSIONER

THE DISTRICT COMMISSIONER
NTCHEU DISTRICT COUNCIL
22 JAN 2019
PRIVATE BAG 1
NTCHEU - MALAWI

Appendix VII: Research Authorization Letter from the Village Chief - Malawi



PHUKA G V H
BOX 11 BILIWRI
NTCHEU.
22 JAN 2019

DEAR SIR/MADAM.

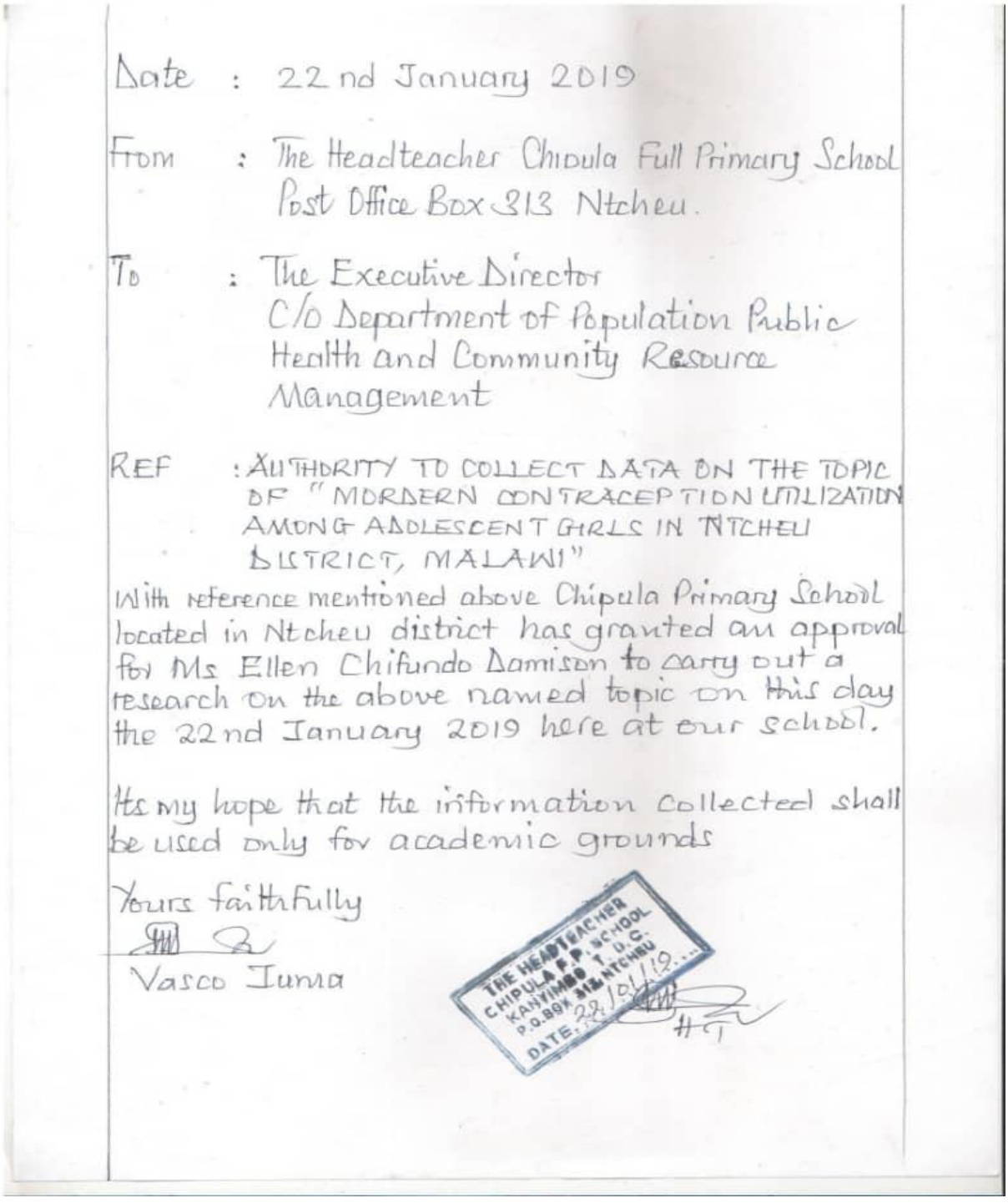
KALATA YA UMBONI KUCHOKERA KWA A GROUP A DELA LINO LA A GROUP A PHUKA.

INE NOEL PHUKA MMALO MWA A GROUP A PHUKA A LEONARD PHUKA NDIKUNKIRA UMBONI WAKUTI ANTHU AWA ALI NDI CHITOLEZO CHAKUTI APANGE KAFUKUFUKU WAWO MUNDELA LINO MMIDZI YATHU YA A GROUP A PHUKA KUNO ANTHU AKE AWA ELLEN DAMSON NDI AMENE AKHALE AKUCHEZA NAFE.

CHONDE AYAKHENI MAFUNSO ONSE

UDATHA INE
NOEL PHUKA

Appendix VIII: Research Authorization from Headteacher Chipula Full Primary School - Malawi



Date : 22nd January 2019

From : The Headteacher Chipula Full Primary School
Post Office Box 313 Ntcheu.

To : The Executive Director
C/o Department of Population Public
Health and Community Resource
Management

REF : AUTHORITY TO COLLECT DATA ON THE TOPIC OF "MODERN CONTRACEPTION UTILIZATION AMONG ADOLESCENT GIRLS IN NTCHEU DISTRICT, MALAWI"

With reference mentioned above Chipula Primary School located in Ntcheu district has granted an approval for Ms Ellen Chifundo Damison to carry out a research on the above named topic on this day the 22nd January 2019 here at our school.

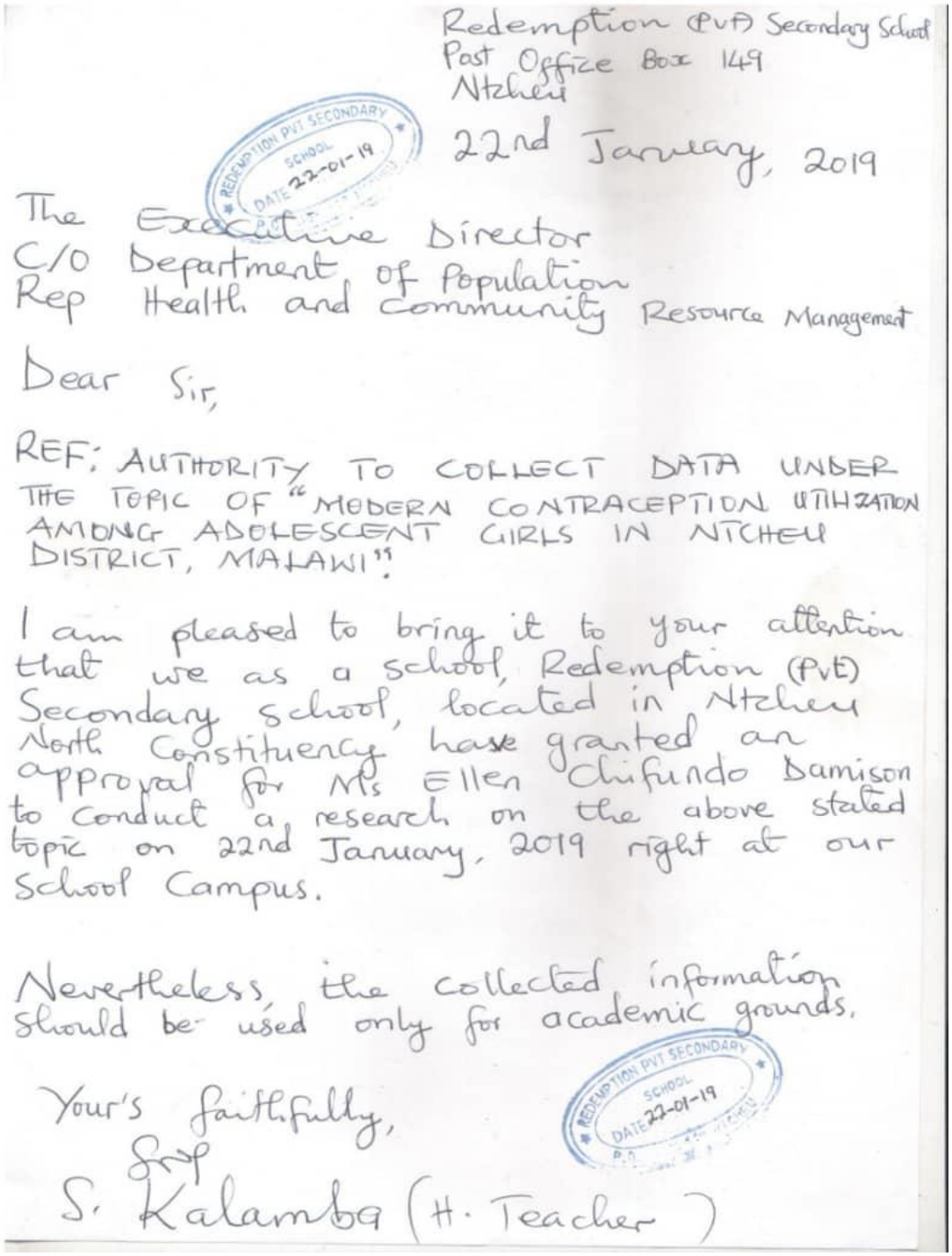
Its my hope that the information collected shall be used only for academic grounds

Yours faithfully

Vasco Iuma

THE HEADTEACHER
CHIPULA F.P. SCHOOL
KANYIMBO T.D.C.
P.O.BOX 313 NTCHEU
DATE: 22/01/19

Appendix IX: Research Authorization from Headteacher redemption secondary school- Malawi



Redemption (PVT) Secondary School
Post Office Box 149
Ntcheu

REDEMPTION PVT SECONDARY SCHOOL DATE 22-01-19

22nd January, 2019

The Executive Director
C/O Department of Population
Rep Health and Community Resource Management

Dear Sir,

REF: AUTHORITY TO COLLECT DATA UNDER THE TOPIC OF "MODERN CONTRACEPTION UTILIZATION AMONG ADOLESCENT GIRLS IN NTCHEU DISTRICT, MALAWI"!

I am pleased to bring it to your attention that we as a school, Redemption (PVT) Secondary school, located in Ntcheu North Constituency have granted an approval for Ms Ellen Chifundo Damison to conduct a research on the above stated topic on 22nd January, 2019 right at our School Campus.

Nevertheless, the collected information should be used only for academic grounds.

REDEMPTION PVT SECONDARY SCHOOL DATE 22-01-19

Your's faithfully,

S. Kalamba (H. Teacher)

Appendix X: Questionnaire

SECTION A: SOCIODEMOGRAPHIC DATA

1. Age in years ☐

Which class are you? ☐

2. Do you live with your family members?

Yes ☐

No ☐

3. What is your religion?

Christian ☐

Moslem ☐

Other, please specify _____

SECTION B: UTILIZATION OF MODERN CONTRACEPTIVES

4. Have you ever engaged in Sexual Intercourse?

Yes ☐

No ☐

5. At what age did you first engage in sexual intercourse? ……

6. Did you use any modern contraception method?

Yes ☐ if yes go to question 7.

No ☐ if No go to question 8.

Other, specify_____

7. What method of contraception did you use?

Pills ☐

Condoms ☐

Injection ☐

Implants ☐

Intrauterine Devices ☐

Vasectomy ☐

Tubal Ligation ☐

Others, specify_____

8. If yes, where did you obtain it?

Hospital ☐

Pharmacy ☐

Other, specify_____

If no, please explain why? _____

Other, please specify_____

9. What was your experience after using it? _____

10. Would you ever use the modern contraception again?

Yes ☐

No ☐

11. If yes please explain_____

12. If not, why? _____

13. In your opinion, is modern contraception good for an unmarried adolescent girl?

Yes ☐

No ☐

If yes, explain_____

If no, explain_____

_____

Other, please specify_____

14. What do you think influences one to utilize modern contraception?

_____

_____

15. Do you think there are factors that can deter one from utilizing modern contraceptives?

Yes ☐

No ☐

If yes please explain_____

If no please explain_____

SECTION C: KNOWLEDGE OF MODERN CONTRACEPTION

16. In your opinion, is sexual activity risky?

Yes ☐

No ☐

NOT sure ☐

17. If yes, what are the risks associated with sexual activity?

_____

_____

_____

_____

_____

_____

18. In your own opinion is engaging in sexual activity risky?

Yes ☐

No ☐

Other (specify) _____

If yes, please explain_____

19. Do you know about modern contraceptives?

Yes ☐

No ☐

20. If yes what methods of contraception do you know?

Pills ☐

Condoms ☐

Injection ☐

Implants ☐

Intrauterine Devices ☐

Vasectomy ☐

Tubal Ligation ☐

Others, specify_____

Where you did first hear of modern contraception?

Hospital ☐

Media ☐

Peers ☐

Parents ☐

School teachers ☐

Other, please specify_____

SECTION D: FACTORS DETERMINING THE UPTAKE OF MODERN CONTRACEPTION

21. In your opinion, what can influence one to use modern contraception?

Age ☐

Culture ☐

Religion ☐

Peer Pressure ☐

Parental support and control ☐

Mass media ☐

Access to Information ☐

Academic aspirations ☐

Financial resources ☐

Time of sexual debut ☐

Having a sexual partner ☐

Accessibility ☐

Affordability

Availability

Healthcare workers attitude

Hospital environmental factors

Support from healthcare facilities

22. Have you ever sought other reproductive healthcare facilities other than modern contraception?

Yes

No

23. If yes, how was the reception by the healthcare workers?

Good

Hostile

24. If hostile, what was the problem? _____

Do you wish to go again to seek for other health services apart from sexual and reproductive health services?

Yes

No

Not sure

If no please explain_____

25. In your opinion, do you think modern contraception is harmful for an unmarried adolescent girl?

Yes ☐

No ☐

Not sure ☐

If yes, explain how_____

_____

Do you think our hospitals are conducive for adolescent sexual and reproductive health services?

Yes ☐

No ☐

Not Sure ☐

26. If no, please explain why? _____

27. When you go to the hospital to seek for modern contraception, are your preferred commodities always available whenever you need it?

Yes ☐

No ☐

Other, please specify _____

28. Do you think the healthcare workers are ideal to handle adolescents' sexual and reproductive health needs?

Yes ☐

No ☐

If no, please explain_____

29. Do healthcare workers provide information about how the modern contraception of your choice works in the body?

Yes ☐

No ☐

Not sure ☐

30. In your opinion, what would like to see change in the hospitals that may help adolescent girls utilize modern contraception?

_____

_____

_____

_____

Appendix XI: Focus Group Discussion Guide

Consent form will be signed by the researcher to show that the participants have accepted to participate in the study.

Researcher sign_____

Identification of the FGD_____

Number of participants in FGD_____

Date _____ Place _____

Moderator's name_____

Each participant will read the information provided to make sure she understands the concept. The researcher will also explain to the participants further the information provided in the information sheet to make sure that the participants clearly understand what id expected of them. The participant will be allowed to ask questions on anything they will need clarification so that the discussion will be run smoothly. There will be 6-12 girls on each group and the discussions will last between 1-2 hours. The participants will further be reminded that they have the right to withdraw at any point in time within the discussions without being penalized. Participants will be made aware of the importance of recording the discussions for their consent.

The agreement of the participants' _____

Name of the researcher_____

Signature_____ Date _____

GUIDE

Exploring Sexual and Reproductive Health problems faced by adolescent girls

1. What are the major sexual and reproductive health problems faced by adolescent girls in this area?WZS3
2. In your opinion, what do you think contribute to these problems?
3. What do you think can be done to address these problems?

Exploring adolescent's health seeking behavior

1. Do healthcare facilities offer reproductive health services for adolescent in this community?
2. What do you think are factors that make adolescent girls not to seek healthcare services whenever they have SRH issues?
3. What sexual and reproductive health services are available at the healthcare centers?
4. Is modern contraception methods offered to unmarried adolescent girls?
5. Do they offer the contraception methods they prefer?
6. What are your views on the services offered?
7. Do you feel satisfied with how the mentioned services are offered?
8. How can you describe the interaction between adolescent girls and healthcare providers?
9. Is the environment on which these services being offered conducive for you as unmarried adolescents?
10. What can be done for unmarried adolescent girls to promote their health seeking behavior as far as sexual and reproductive health is concerned?
11. How can these services be made available to unmarried adolescents and the community as a whole?

Appendix XII: Study Area Map