

**BARRIERS ASSOCIATED WITH CONDOM USE FOR PREVENTION
OF HIV INFECTION TRANSMISSION AMONG ADOLESCENTS: A
CASE OF SENANGA URBAN DISTRICT OF WESTERN ZAMBIA**

BY

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DECLARATION

I **Bright Mweene** do hereby declare that “*Barriers associated with condom use for prevention of HIV Infection Transmission among adolescents: A case of Senanga urban district of Western Zambia*” is my own piece of work, that it has not been submitted before for any degree or examination in any other University or college, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

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CERTIFICATE OF APPROVAL

This dissertation of **Bright Mweene** has been approved as partial fulfilment of the requirements for the award of the degree in Master of Public Health in Population Studies by the University of Zambia.

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ABSTRACT

Male latex condoms are 80–95 percent effective in preventing HIV and most STIs when used consistently and correctly. HIV/AIDS is the most dramatic epidemic of the century that has claimed more than 3 million deaths over two decades. Sub-Saharan Africa is heavily affected and accounts for nearly 70 percent of all cases. Despite awareness campaigns, prevention measures and more recently promotion of anti-viral regimens, the prevalence of cases and deaths continues to rise but the prevalence of systematic condom use remains low, especially among adolescents. This study identified barriers to condom use among adolescents based on the Health Belief Model (HBM) in Senanga urban, Western Province.

The study was a cross-sectional survey conducted in the first quarter of 2017. Three hundred sixty nine (369) adolescents were interviewed using a structured questionnaire adapted from a standardized WHO/GAP questionnaire. Data were obtained through self-administered questionnaires. Logistic regression analysis was used to identify factors associated with condom use.

In spite of satisfactory knowledge on HIV/AIDS transmission, adolescents are still at high risk of contracting the infection. Condom use was declared by only 49.8 percent of males and 45.3 of females. Age, gender and schooling status were associated with condom use. Based on the HBM, failure to use condom was related to its perceived lack of efficacy [OR = 10.1 (2.1–28.7)] and perceived low quality [OR = 1.9 (1.8– 8.9)].

The HBM provides a useful framework for investigating predictors of condom use behaviours among adolescents. This study identifies perceived efficacy (incomplete protective effect) and perceived utilization-related problem (any reported problem using condoms) as the main barriers to condom use. Hence, Future HIV prevention interventions should focus on increasing perceived benefits of condom use, reducing barriers to condoms use, and improving self-efficacy among adolescents. This information will be useful in designing and improving HIV/AIDS prevention outreach programs in the HIV/AIDS hit Western Province of Zambia, Zambia and Sub Saharan Africa at large.

DEDICATION

This work is dedicated to my parents, Laika M. Ng'andu and Kelly Ng'andu Mweene, my wife Mwiila and to my son Ng'andu Mweene Bright (Jr). Thank you for believing in me and for your love, support, and continued encouragement.

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ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
CSO	Central Statistical Office
DEBS	District Education Board Secretary
DHS	Demographic Health Survey
FGD	Focused Group Discussion
HIV	Human Immunodeficiency Virus
MOH	Ministry of Health
NAC	National AIDS/TB/STI Council
STIS	Sexually Transmitted Infections
SRS	Simple Random Sampling
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNZA	University of Zambia
UNZABREC	University of Zambia Biomedical Research Ethics Committee
VCT	Voluntary Counselling and Testing
W H O	World Health Organization
ZDHS	Zambia Demographic Health Survey
ZSBS	Zambia Sexual Behavioural Survey

OPERATIONAL DEFINITIONS

An adolescent: A young person who has undergone puberty but has not yet reached maturity.

A transition phase from childhood into adulthood, usually between 10 - 20 years of age.

Condom use attitudes: Self-evaluation of one's attitudes towards condoms.

Condom use self-efficacy: Belief in one's ability to use condoms or request a partner to use condoms under various situations.

Condom: A barrier device (sheath) used during sexual intercourse to reduce the probability of pregnancy and the spread of Sexually Transmitted Infections (STIs)

Dropouts: Pupils leaving a school due to one or more reasons e.g. pregnancy, lack of schools fees poor school systems and long distance

Individual gender role attitudes: An individual's belief about the roles of males and females in society.

Re-entries: Number of admissions of pupils back into school that had dropped out of school for various reasons e.g. pregnancy.

Sexual intercourse: Penile-vaginal sexual act with penetration.

Sexually experienced: A label used to identify a person who has engaged in sexual intercourse. This label was selected over "sexually active" because the latter is often used to describe those who are presently involved in sexual partnerships.

CHAPTER I: INTRODUCTION

1.1 Background

Latex condoms utilization is the most effective method for prevention of Human Immunodeficiency Virus (HIV) and sexually transmitted disease (STD) among sexually active persons (Weller, 1993). Despite the benefits, many adolescents have difficulty in using condoms. Rates of HIV/AIDS and unplanned pregnancies in adolescent population are a serious concern. A report from UNAIDS indicates that, condom use at last sex with non-regular partners ranges from 80 percent use by men in Namibia and Cambodia to less than 40 percent usage by men and women in other countries, including some highly affected by HIV (UNAIDS, 2015). Similarly, among young people aged 15 to 24 years, condom use at last sex varies from more than 80 percent in some Latin American and European countries to less than 30 percent in some West African countries (UNAIDS, 2015). This Inadequacy in condom utilization greatly contributes to the spread of sexually transmitted infections (STIs) and early pregnancies, especially among the high-risk adolescents in developing countries.

In 2014, an estimated 36.9 million people were living with HIV (UNAIDS, 2015). The vast majority of this number lives in low and middle-income countries with 70 percent of the global total infection living in sub-Saharan Africa, (AVERT, 2015). If no serious interventions such as safer sex education, condom utilization and abstinence are employed the upward trend in infection will continue. Consistent and correct condom use prevents unintended pregnancies, HIV infection and other sexually transmitted infections, with an efficacy of about 85 percent, (Holmes et al, 2004).

In Zambia and most African countries huge costs of anti-retroviral medication (ARV) have pushed public health authorities to focus on prevention medicine. This involves Abstinence, Being faithful and Condom use; (ABCs), where C stands for condom use when one fails to abstain (A) or be faithful (B). However, According to the ZDHS 2013-14, condom use was reported at 40 percent and 49 percent among young women and men aged 15-24 respectively. Most of these adolescents are still in schools and more than 50 percent of them are already involved in unprotected sex (CSO, 2014). Unprotected heterosexual sex drives the Zambian HIV epidemic, with 90 percent of new infections recorded because of not using a condom, (Zambia National AIDS Council, 2014). HIV prevalence among the youth aged 15-24 is seven percent (CSO, 2014).

A study examining sexual risk behaviors among young people conducted by Kayeyi et al., (2013) found among other things, that in Zambia, despite extensive condom promotion, use during high-risk sex was low (estimated at only 40 percent) due to negative norms surrounding condom use. Among barriers to correct and consistent use are inadequate information disseminated to youths, especially those in school, and parent's reluctance to talk about condoms at home and church. This has created a negative impression among youth that condom use is wrong. Abuse of alcohol and other drugs impairs judgment leading to non-use of condoms regardless of one's HIV status. Some beliefs and attitudes have equally affected the use of condoms by youths. These include perceived protection against HIV infection provided by circumcision as well as negative attitudes towards protected sex. Other key factors identified with low or poor condom use among youths included the embarrassment they go through in asking for condoms from a person older than them at condom outlets. In the earlier years of their youth, majority of the sexual relationships youth engage in are mostly short-term and spontaneous and less likely to allow for condom use (Kayeyi et al., 2013). Consistent condom use was positively associated with higher levels of education, belief that condoms did not diminish sexual pleasure, believing that condoms were safe (among males) and having multiple partners (among males) and negatively associated with being married or being in a cohabiting relationship, and equating condom use with lack of trust (among females) (Kayeyi et al., 2013).

On the other hand, In March 2004, the Zambian government banned the distribution of condoms in schools on the grounds that condoms promoted promiscuity among youths (Geloo, 2004). Since majority of adolescents are still in schools, this policy might be limiting their access to condoms. Access to condoms for the youths is only possible through health facilities, bars and drug stores (Geloo, 2004). This study identifies barriers to condom use based on the Health Belief Model (HBM) in Senanga, Western Zambia. The Health Belief Model postulates that an individual's actions are based on beliefs (Champion and Skinner, 2008).

1.2 Outline of Chapters

Chapter I state the background of the study and outlines the chapters that are explained in the dissertation.

Chapter II presents the statement of the problem, conceptual framework, the rationale, the research questions, and the objectives of the study.

Chapter III presents a review of literature. The literature focuses on the barriers associated with condom use for prevention of HIV infection among adolescents in both developed and developing countries.

Chapter IV describes the methodology used in establishing the factors that influence the utilisation of condoms among adolescents for prevention of HIV infection. The chapter explains the research setting, the study design, the sample size, the research instrument, the procedure followed in obtaining the information, the analysis used to interpret the information and the ethical issues.

Chapter V presents the analysis of the data in form of frequencies, percentages and chi-square tests.

Chapter VI discusses the findings of the study. The discussion compares the findings of the current study with similar previous studies and attempts to draw comparisons and differences. The chapter further provides the limitations to the study, the conclusions drawn and the suggested recommendations.

CHAPTER II: PROBLEM STATEMENT, RATIONALE, RESEARCH QUESTIONS AND STUDY OBJECTIVES

2.1 Statement of the Problem

Inconsistence and low use of condoms is one of the main drivers of HIV infection, other sexually transmitted infections (STIs) and teenage pregnancies especially among adolescents who are at high risk (WHO, 2004). In Zambia, efforts by government and development partners to promote condom utilization among adolescents includes, provision of free condoms in health facilities and other friendly corners, free HIV counselling and testing services, mandatory antenatal clinics and outreach sensitization programmes in communities and schools (Bharath-Kumar, 2006). Despite these efforts condom use among young people has remained very low. According to the Zambia 2013-14 Demographic and Health Survey, condom use was reported at 40 percent and 49 percent among young women and men aged 15-24 respectively, who had premarital sexual intercourse in the 12 months prior to the 2014 Zambia Demographic and Health Survey (CSO, 2014). Among never-married adolescents aged 15 to 19 years, the prevalence of condom utilization at the last premarital sexual intercourse was 36.5 percent among females and 42.5 percent among males (CSO, 2014).

Despite increased availability of both male and female condoms, condoms are not easily accessible to vulnerable and most at risk populations such as students in secondary schools in Zambia (NAC, 2013). Accessibility to condoms among adolescents was at 16.3 percent for females and 15.1 percent for males who had sexual intercourse in the past 12 months before the 2013-2014 ZDHS (CSO, 2014). Zambia has an acceptable national condom distribution programme that distributes mostly generic condoms. Youths can access these generic condoms available in health facilities free of charge, but access is believed to be affected by a number of challenges such as inadequate information disseminated to youths, parent's reluctance to discuss condom use, alcohol and other drugs abuse, some beliefs and attitudes, as well as embarrassment associated with collecting condoms (Geloo, 2004). The cost of branded condoms in drug stores, bars and other outlets is another barrier (Bodibe, 1994).

Condoms remain a cost-effective and relatively simple intervention to prevent HIV infection and other STIs (Katikiro and Njau, 2012). However, condom use remains very low, particularly among adolescents in Zambia. This could be directly related to the high HIV prevalence and early pregnancies among adolescents. HIV prevalence among adolescents is at eight percent

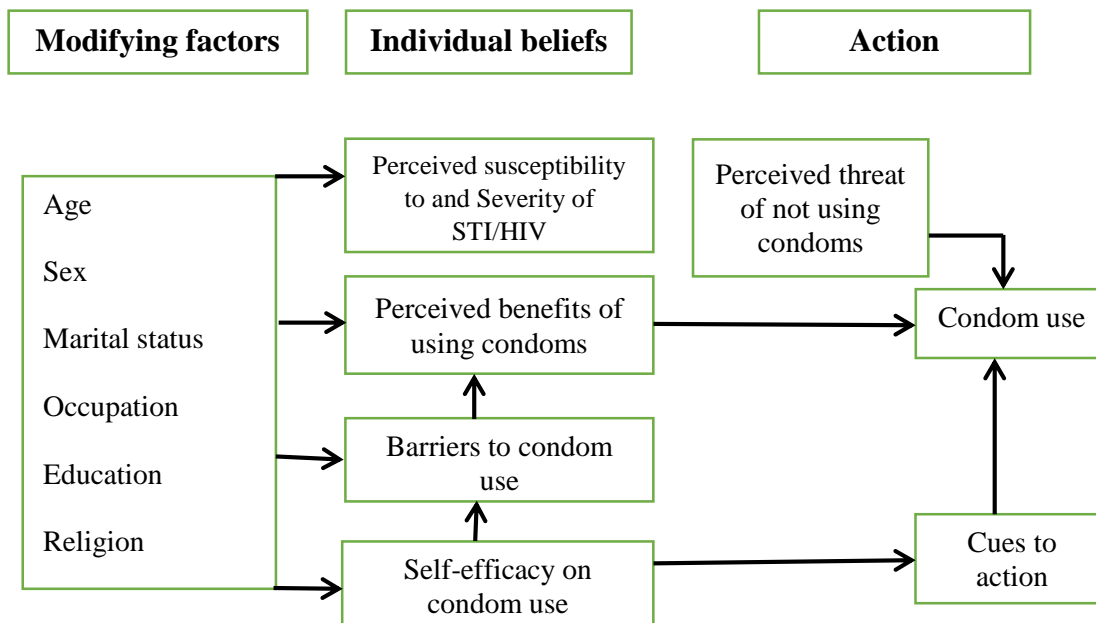
among females and five percent among their males counterparts (CSO, 2014). Western province with 87 percent of the people living in rural area has the second highest HIV prevalence in Zambia at 15.4 percent (CSO, 2014). The province also has the highest urban population HIV prevalence at 27.3 percent (Baboo and Vitola, 2015). Senanga district has one of the highest school dropout rates. According to the district education annual report 2014, during the period 2012 to 2014, a total of 2,021 primary and secondary school girls dropped out of school due to pregnancies and early marriages (DEBS-Senanga, 2014). Though data is limited, abortion among adolescents is a source of serious concern in the district. In Senanga, like other rural districts in Zambia, condoms are not readily accessible to youths. The only access points for condoms are bars, drug stores and health facilities. Under 18 years of age adolescents are not allowed entry or to purchase anything from bars. On the other hand, the exorbitant cost limits the number of teenagers who cannot afford to buy condoms from drug stores, when need arises (Senanga, EHA Report, 2014).

Frequently, the concern is that if adolescents cannot abstain and have no knowledge and access to condoms they will most likely indulge in unprotected sex, which may worsen the HIV/AIDS and teenage pregnancy situations (GARPR, 2014). This has far-reaching consequences particularly in the absence of research to highlight areas that require attention and support adolescents in practicing safe sex. Therefore, the study investigated the prevalence and correlates of condom utilization among adolescents in Senanga urban community of the Western Province using the Health Belief Model.

2.2 Conceptual Framework

This study, conducted in Senanga, identified factors deterring condom use among adolescents and adopted the Health Belief Model (HBM) as a conceptual framework to address the study objectives. The Health Belief Model postulates that an individual's actions are based on beliefs. According to the HBM, several factors, such as perceived susceptibility or vulnerability, perceived severity of an outcome or condition, perceived efficacy or benefits of a preventive measure, and the perceived barriers are important factors in decision-making. It has been extensively used in behavioural sciences to predict behaviours and to design behavioural prevention programs (Champion and Skinner, 2008).

Figure 1: The Conceptual Framework of Barriers to Condom Utilization



Operational description of the Health Belief Model (Champion and Skinner, 2008).

The model was used to predict who among the sexually active young men of Senanga urban district are likely to use condoms to prevent HIV infection. The four dimensions of health beliefs, each related to health seeking behaviour. Therefore, according to the HBM, individuals were more likely to adopt health behaviours if they perceived themselves to be susceptible to illness, and if they thought that the consequences of infection were serious, that an effective solution existed, and that they could surmount barriers entailed in adopting the effective behaviour. Hence the widely used HBM helped us to predict behaviours determining condom use among adolescents in Senanga district.

2.3 Rationale

Despite findings of the Zambia Demographic Health Survey of 2014 showing that less than half of adolescents use condoms, there have been limited studies that have examined deterrents to condom utilization in preventing HIV infection. However, for HIV prevention programs to be successful, it is important to identify socio-economic, beliefs, behavioural, myths, misconceptions, and fears that may hinder access to or use of condoms. This study therefore identified factors that hinder condom use in preventing HIV infection among adolescents in an urban setting using the Health Belief Model (HBM). Considering that the HBM is a behavioural change framework, which addresses several constructs influencing health behaviours inter alia

condom use, it is expected that the findings from this analysis will provide a basis for designing an effective HIV prevention programme for youths in urban communities of Zambia.

Zambia has an ambition to end HIV and AIDS by the year 2030; and to ensure that sexual and reproductive health services are available to all who need them (UNAIDS, 2014). Young people are identified as an important entry point for an HIV-free society. The information generated by this study informs programming to motivate young people to adopt safer sexual practices. The study also provides a baseline for further research. In addition these finding can help aid policy makers to formulate a workable framework that will enable young people have access to condoms and promote correct use. The Ministry of General Education may use the study results to review the school health curriculum and develop policies that will benefit school going adolescents. Thus, the study contributes to promoting comprehensive sexual education and reintroduction of condom distribution in schools.

2.4 Research Questions

The overall research questions driving the conceptualization of this study were:

1. What is the prevalence of condom utilization among sexually active adolescents in Senanga urban district?
2. What factors are associated with consistent, sporadic, and or non- condom utilization among adolescents in Senanga urban Communities?

Some sub-questions includes: What is the relationship between;

- ✚ adolescents' knowledge on HIV/AIDS and condom utilization?
- ✚ socio-demographic, economic status, cultural and condom utilization?
- ✚ adolescents' beliefs and perceptions on HIV/AIDS and condom utilization?

2.5 Research Objectives

2.5.1 General Objective

To identify barriers to condom use for HIV prevention among adolescents in the urban communities of Senanga District of Western Zambia

2.5.2 Specific Objectives

1. To estimate adolescents' level of knowledge on HIV/AIDS in Senanga urban district.
2. To estimate the prevalence of condom use among sexually active adolescents in Senanga district
3. To determine the socio-demographic, economic and cultural factors associated with condom utilization among adolescents in Senanga district
4. To assess the extent to which adolescents' level of knowledge and beliefs on HIV/AIDS influence condom use in Senanga district.

CHAPTER III: LITERATURE REVIEW

Inadequate condom utilization contributes to the spread of HIV and other sexually transmitted infections (STIs). According to UNAIDS (2008), condom use is a critical element in a comprehensive, effective and sustainable approach to HIV prevention and reduction of unplanned teenage pregnancies. Condoms have played a decisive role in HIV prevention efforts in many countries. Condoms have also encouraged safer sexual behaviour (UNAIDS, 2008). However, condom accessibility and use to prevent HIV infections is challenged by low accessibility and people's beliefs such as perceived susceptibility or vulnerability, perceived severity of an outcome or condition, perceived efficacy or benefits of a preventive measure, and the perceived barriers which are important factors in decision-making (Champion and Skinner, 2008). Most countries have different views when it comes to adolescents' accessibility to condoms or their utilization. Despite statistics, showing that in some countries HIV is on the increase among the youths, youths still hold different beliefs on condom use to prevent HIV infection.

Low and inconsistent use of condoms was declared in a Prevention convention resolution (2010) as one of the key drivers which is propelling HIV/AIDS pandemic worldwide. Dorozynski (1994) shows that a survey by a French agency that fights AIDS indicates that the number of condoms used by Europeans varies from 1.7 to 3.8 per person per year. In 1992 about 150 million condoms were used in Spain, an average of 3.8 per person. In Britain, where the average cost of a condom is much lower, a total of 152 million were sold, representing 2.7 condoms per person per year. In France, where the cost is slightly higher, 2.0 condoms are used per person per year. The cost of condoms is highest in the Netherlands, where their use is lowest, 1.7 per person per year.

In France, legislation adopted at the beginning of the century which banned contraceptive advertisements, and this regulation was repealed only in 1987. Condoms had practically stopped being used in France by the end of the 1960s, having been replaced by oral contraceptives. In addition, the use of condoms in France became associated with prostitution and illicit sex. In 1970 condoms were used by 26% of people using contraception in Britain; in France the proportion of 22% was reached only last in 2009. Condoms are generally bought in pharmacies: 80% in Spain, 75% in Italy, 53% in Britain, and 48% in France (Glanz, et al., 2010). It is stated that about 2.8 billion condoms are produced every year worldwide while Japan is the greatest consumer, using 58% of that total.

Ali et al (2004) conducted a study to assess the contraceptive effectiveness of condoms versus oral contraceptive pills and estimated the reproductive consequences of a major shift from pill to condom use in 16 developing countries including Dominican Republic, Guatemala, Kenya, and Zimbabwe. The findings were as follows; in the 16 countries, the median per cent of married couples currently using condoms was 2%, compared with 13% for the pill. Condom users reported a higher 12-month failure and higher method-related discontinuation rates than pill users. Condom users were more likely to report subsequent abortion following failure and also more likely to switch rapidly to another method. It was revealed that condom users were more likely to experience method- or user-failure than pill user in the absence of competing risks; the 12 month failure probability for condom users was about 9%. Nonetheless, Ali et al (2004) shows that pills do not prevent HIV infection other than pregnancies but condoms also help to protect one from contacting HIV/AIDS and other sexually transmitted infection.

Central Statistical Office et al (2009) indicated a slight increase with about three quarters of women and men knowing that continued comprehensive and consistent use of condoms is a means of preventing the spread of HIV in Zambia. They also reviewed that among those having higher-risk sex, 37% of women and 50% of men reported that they used a condom at the last sexual encounter. Central Statistical Office et al (2003) showed that condom use still remained very low (12% among women and 19% among men). One of women and 44% of men reported that a condom was used the last time they had sex with a non-cohabitating partner.

Central Statistical Office (1999) reports that a survey was conducted in order to examine patterns of condom use in Zambia; examine exposure to advertising and promotion concerning condom use; and examine family planning practices and knowledge. Overall, 40% of respondents reported condom use outside marriage, and about 8% reported condom use in marriage. Levels of condom use remained well below the required to arrest the HIV epidemic in Zambia. Socioeconomic and reproductive factors were associated with condom use within and outside of marriage among urban pregnant women in Zambia. Kankasa et al (2005) conducted a cross-sectional questionnaire survey on condom use among 470 pregnant women in Lusaka.

Condom use was reported much lower than among women who were having extramarital affairs. It was recommended that there should be the implementation of family planning with emphasis on condom use, and empowering women by assisting with their economic

independence. Wilson and Lavelle (1992) stipulates that a study was carried out to assess whether Partner and relationship characteristics are associated with condom use in Zambian non-marital relationships as in many other sub-Saharan African countries. It was revealed that condom use was far below the level needed to alleviate serious threats to sexual and reproductive health. It was concluded that condom promotion programs and interventions in Africa must take into account the relationship characteristics of intended participants, paying special attention to gender differences.

According to National AIDS Council (2005), condom use decreased in the period 2003 to 2005, from 26% to 24% among females and 40% to 38% among men. Similarly, National AIDS Council (2005) prevention theme document indicates that a gap exist regarding condom use in Zambia. Studies have demonstrated that AIDS knowledge is associated with condom use. Low level of knowledge about the transmission and prevention of AIDS among adolescents was a predictor of non-use of condoms (Glanz, et al., 2010). However, some studies have indicated that despite the increasing levels of AIDS knowledge, adolescents do not use condoms consistently (Mahoney, et al., 1995).

According to Nielsen and others (2012), key barriers to the use of modern contraceptives among women in Albania and condom use included socio-cultural factors such as the status of the relationship with partners. Other barriers included difficulties talking about sexual matters, contraception being taboo, health care problems, cost, availability and individual issues such as unfavourable social attitudes towards contraceptives and lack of knowledge about the use and benefits of modern contraception. While a study by Bedimo and colleagues (1998), on understanding barriers to condom use among HIV-infected African American women in New Orleans, highlighted specific barriers to condom use. These included engaging in oral or anal sex, distrust in condoms, and relationships in which partners refused to wear condoms. Limited communication skills on the part of women were attributed to their not asserting themselves to demand condom use. Therefore, programs targeted toward empowering women, with regard to communication skills with men, are essential. Within relationships, the use of condoms may be taken to signal a lack of trust or intimacy. Abdool and others (1992) revealed that religiosity was another factor associated with condom use. Similarly, most Christian churches in Zambia also hold such beliefs.

The research by Houton and others (2005) on understanding barriers to condom use in rural Benin using the Health Belief Model (HBM) identified main socio-cultural barriers to condom use. These included problems with using condom, the alleged capability to physically recognize an HIV infected person, denial of HIV disease (only 19 percent of participants believed HIV/AIDS exists), the belief that there is a cure for the disease (74 percent) and religion (9 percent). Non-favourable reaction towards condom was common among declared Christians.

In a qualitative study conducted in South Africa, MacPhail and Campbell (2001) indicated that for young women in Khutsong, condoms remained relatively inaccessible due to attitudes of nursing sisters and clinic staff. In the same study, the other barrier reported was fear of being labelled as a prostitute when carrying condoms. The study further elaborated on costs involved as a challenge that prevents adolescents from accessing condoms, as majority could not afford to buy when need arises, (MacPhail and Campbell, 2001).

Other studies have identified several perceptions as important determinants of condom use among adolescents. These include perceived susceptibility to AIDS, perceived benefits and barriers of condom use, perceived self-efficacy to use or have a partner use a condom, and perceived social support for condom use. Perceived susceptibility to AIDS has been found to be significantly related to intention to use condoms among adolescents (Hingson et al., 1990). In addition, Brown and others (1992) and Wilson and others (1992) demonstrated that the belief by adolescents that condoms effectively prevent HIV transmission was predictive of consistent condom use. Other studies have also shown that barriers to condom use (barriers that reflect physical, emotional, or accessibility concerns with condom use) were strongly predictive of lack of condom use (DiClemente and others 1992 and Jemmot and others 1990).

Studies in Zimbabwe (Wilson et al., 1992), South Africa (Abdool Karim and others 1992), Kenya (Ajayi and others 1991), and Nigeria (Nichols and others 1986) reported that the main reasons cited by adolescents for non-use of condoms included difficulty in obtaining them, lack of sexual pleasure, and prohibitive price. Greater self-confidence in the use of condoms and insistence on condom use predicted condom use (Jans et al., 1991). Furthermore, recent studies have demonstrated that adolescents who perceived peer norms as supporting condom use were more likely to report consistent condom use (Pendergrast and others 1992). Additional studies have evaluated adolescent risk and problem behaviours and have shown that those with

multiple partners, and those who used tobacco, alcohol, and illicit drugs most often were least likely to use condoms (Ku, and others 1992). Age has also been found to be associated with condom use; in general, older teenagers had more sex partners, had intercourse more frequently, and used condoms less consistently than younger teenagers used (Pendergrast and others 1992).

Similarly to other countries, in Zambia, secondary school learners engage in frequent sexual activity, use condoms ineffectively or not at all. Consequently, pregnancy and HIV infection rates increase, especially in the rural areas, where the use of contraceptives might still be taboo (Bodibe, 1994). In an effort to reduce unintended pregnancies among secondary school learners, the government has introduced a variety of school-based abstinence and sex education programmes. Ndubani and Höjer (2001) established that in Zambia sex education programmes increased the use of contraceptives and condoms from 19.5 percent to 39.0 percent. However, more research is required to better explain barriers to condom utilization.

In Zambia, there have been different views where the majority regard condom distribution to adolescents in the community and at school as culturally inappropriate. While others argue that, it is necessary to distribute condoms to prevent sexually transmitted diseases and early pregnancies. In spite of these divergent views, there is a MoE policy in place that prohibits condom distribution to schools. In 2004, through a Ministerial statement the Government of Zambia banned distribution of condoms in schools. This pronouncement is articulated in the ministerial statement of 2004 (Geloo, 2004). The government's argument is that condoms encourage young people to have premarital sex, which exposes them to HIV infection and teenage pregnancies. The policy therefore emphasises on abstinence from sex as a measure to fight the disease (Geloo, 2004).

Anti-AIDS activists still believe government can do more by legalising the distribution of condoms in secondary school. The Council of Churches in Zambia (CCZ) General Secretary in her statement on the matter articulated the need to distribute condoms as a way of safeguarding adolescents against sexually transmitted infections and early pregnancies. However, she advised adolescents to concentrate and complete their education before engaging in sex (Mulenga, 2014).

Generally, condom utilisation remains a subject of heated debate in Zambia. Conducting research to provide evidence is an important avenue for addressing some of the misunderstanding associated with condom utilization among the youth. This study empirically identified barriers to condom utilization to prevent HIV/AIDS among adolescents using the Health Belief Model in Senanga Urban communities.

CHAPTER IV: STUDY METHODS

This chapter describes the methodology used in establishing the factors that influence the utilisation of condoms for prevention HIV Infection among adolescents. A description of the study design, research setting, research tools used, research procedure used and the ethical issues relating to the study are given.

4.1 Study Design

The study followed quantitative research methods using a cross-sectional survey design. A cross-sectional design offers information about a population at a given point in time (Bless and Higson-smith, 2000). This design was chosen as it was intended to gain immediate knowledge and information on factors influencing use of condom in prevention of HIV infection in Senanga district. The survey was useful in that it allowed collection of information, opinions and perceptions of adolescents from a relatively large number of subjects to allow generalisations to be made. The research design was therefore appropriate for this study, as it explored all the necessary information about the study objectives that were stated.

4.2 Study Site

The study was conducted in Senanga District, one of the 16 districts of Western province, with a population of about 77,333 based on the adjusted projections of 2010 census annual growth rate of 1.5 percent (CSO, 2010). About 15, 371 of the population live in Senanga urban and 6500 of them are adolescents aged 11 to 19 years. Three health centres (one General hospital and two clinics) serve the urban population. It is approximately 105 km Southeast of Mongu, the provincial capital. The district shares boundaries with other districts; Mongu and Luampa in the North, Sesheke and Mulobezi in the Southeast, Sioma in the Southwest and Nalolo in the West.

4.3 Study Population

The target population was all adolescents in Senanga district during the study period. However, the study population for this study was all adolescents aged 15 to 20 years in Senanga urban district of the Western Province. Adolescents who were under the age of 15 years were excluded from the study due to ethical reasons considering their age and the nature of the study. Though some might already have been sexually active, this age group was considered too young to answer questions on sexual intercourse and condom use.

4.4 Sampling Methods

4.4.1 Sample Size Calculation

The sample size was calculated based on results from the Zambia 2014 Demographic and Health Survey. Using the proportion of condom use reported in that survey (40 percent), with a power of 90 percent and an error of 5 percent, a sample size of 369 adolescents was needed. Hence, the sample size was calculated using a single population proportion formula.

Figure 2: Sample Size Calculation Formula

$$n = \frac{z^2 p(1-p)}{e^2},$$

For ($p = 0.4$, $z = 1.96$ and $e = 0.05$), here is the estimated sample size:

$$n = \frac{1.96^2 * 0.4(1-0.4)}{0.05^2} = 369, \text{ Therefore, 369 adolescents were recruited into the study.}$$

4.4.2 Sample Selection Methods

The study adapted the EPI sampling method, named after the Expanded Programme of Immunization a spatial sampling methods adopted by WHO for use in low-income countries. The method makes use of a modification of PPS (Probability Proportional to Size) sampling (Henderson and Sundaresan, 1982).

In this case, the calculated sample size of 369 was proportionately distributed to each of the eight main townships (clusters) depending on adolescent population of each cluster as shown in the table 1 below. To select the sample EPI steps were followed:

- (i) selected a location near the centre of the community,
- (ii) selected a random direction (by spinning a bottle), and
- (iii) a random household along the chosen direction pointing outwards from the centre of the community to its boundary was sampled.

The iterations were repeated until the required number of adolescents for each cluster was captured. Households without adolescents were treated as ‘blank households’.

Table 1: Number of Study Participants per Cluster

School	Adolescent Population	Formula	Sample Size
Katuya	1800	$1800/6500*369$	102
Limoneno	1250	$1250/6500*369$	71
Caprivi	1050	$1050/6500*369$	60
Mwanambinyi	925	$925/6500*369$	53
Mulamba	530	$530/6500*369$	30
Boma	410	$410/6500*369$	23
Nzuri	310	$310/6500*369$	18
Senanga Mission	225	$225/6500*369$	13
Total	6500		369

4.5 Research instruments

The study used a semi-structured interview schedule (*Appendix 5*) to collect data. The questionnaire contained questions on individual beliefs, knowledge, socio-demographic, economic and cultural factors.

4.6 Pilot Study

Prior to the main data collection, a pilot study was conducted with adolescents in Boma compound of Senanga urban district. The purpose of piloting the instrument was to obtain clarity, find out its appropriateness and obtain direction to the main study. The pilot study provided the researcher with orientation/experience in conducting the research procedure; and determining the length of time needed to complete the questionnaire. The necessary changes to the instrument were made after piloting. Adolescents were asked to give comments on the clarity of the instrument, its appropriateness and any other general comments. The pilot study therefore helped to address the reliability and validity of the instrument.

4.7 Study Variables and their Operational Measurements

Table 2: Study Variables and their Operational Measurements

VARIABLES		OPERATIONAL DEFINITIONS	INDICATOR	SCALE MEASUREMENT
DEPENDENT	Condom Use	Making practical and effective use of condoms	1. Consistent 2. Inconsistent 3. No use	Percentage
INDEPENDENT VARIABLES	Gender	One's state of being male or female	1. Male 2. Female	Nominal
	Age Group	One's age	1. 15-17 years 2. 18-20 years	Ratio
	Schooling Status	The state of being a pupil	1. In school 2. Not in school	Ordinal
	Head of Household	The head of household where the adolescent is staying	1. Parents 2. Guardian 3. Alone/friends	Nominal
	Head of Household's occupation	The income status of a family	1. High income 2. Low income	Ordinal
	Religious Affiliation	Belief and attendance of religious services and importance of religion	1. Catholic, 2. Pentecostals 3. Adventists, 4. Apostolic 5. Other	Nominal
	Marital status	the state of ever being married or never	1. Ever married 2. Never married	Nominal
	Awareness of condom importance	Knowledge about importance of condom utilization	1. Aware 2. Not aware	Percent
	Knowledge level on HIV/AIDS	Adolescent having knowledge on HIV/AIDS.	1. Knowledgeable 2. Not knowledgeable	Percent
	Perceived vulnerability	Participant feeling at risk or not of HIV infection	1. At risk 2. Not at risk	Nominal
	Perceived severity of the disease (AIDS)	AIDS perceived as deadly or not	1. Deadly 2. Not deadly	Nominal
	Perceived efficacy of condoms	Condom effective to prevent infection or not	1. Effective 2. Ineffective	Nominal
	Perceived barrier	Reported problem with use of condom	1. No problem 2. Reported problems	Nominal

4.8 Data Collection Methods

Pre-tested structured interviewer administered questionnaire adapted from the surveillance questionnaire developed by the Global AIDS Program of the World Health Organization was used for data collection among the 369 sampled participants. In order to prevent any interviewer variability thus measurement error, which could have resulted due to language barrier, the questionnaires was translated to Silozi. Data was recorded in the questionnaires, as they were administered to the participants. The responses were verified by checking one questionnaire for every five filled.

4.9 Data Analysis Method

Data was entered using Epi Data Software version 3.1, cleaned and then exported to StataIC 13(64-bit) statistical software for analysis. Descriptive univariate analyses were performed to inspect the frequency distributions of the various factors. Bivariate analysis was then employed to examine the associations of individual factors with condom use. The Chi square statistic with its corresponding probability level, odds ratio (OR), and 95 percent confidence interval (CI) was computed to examine the magnitude and significance of the bivariate associations between independent variables and the dependent variable. Factors identified as significantly associated with condom use in the bivariate analysis were included in the multivariate logistic regression analysis to assess the independent contribution of each factor in predicting condom use. Additionally, results were presented in tables, pie charts and bar graphs.

4.10 Ethical Considerations

Approval for this study was obtained from UNZA-BREC, (REF. No, 034-06-16). Permission to conduct the study was obtained from the Senanga District Council Office.

Before administration of questionnaires, signed assent for all adolescents below 18 years of age were obtained after consent from their parents. Signed consents were obtained from all adolescents aged 18 years and above. The interviewers were trained to conform and comply with research ethics. The ethical issues considered in this study were informed consent, anonymity, confidentiality, and no personal harm. To ensure privacy, no individual respondent's information was shown to anyone except those involved in the research. Further, the statistical data collected was published only in aggregate form so that individual respondents cannot be identified. The respondents were informed about the purpose of the research and benefits that may accrue. They were also informed that they were allowed to

withdraw from the study at any point if they felt uncomfortable with the topic; and would not affect access to services they currently enjoyed.

The dangers of the study included psychological effects to adolescents who might have had bad sexual experience, for instance those who may have been raped. Another risk is that the study was intrusive into one's privacy, thus respondents might have experienced some discomfort. To reduce the chances of such situations arising, parents were asked to help identify and completely exclude such adolescents from the study. The study depended on respondent's knowledge and experience with regards to condom utilization, hence there were no sample condoms shown or distributed. Because of the private nature of the topic under discussion, embarrassments were mitigated by ensuring confidentiality.

CHAPTER V: RESEARCH FINDINGS

This chapter focused on the presentation of the data collected and analysed in the study. The researcher's analysis was based on information gathered from the semi-structured questionnaire techniques of data collection.

5.1 Demographic Characteristics of Respondents

Table 3: Demographic Characteristics of 369 Respondents

Background Characteristic	Frequency (n=369)	Percentage (%)
Age Group		
15 - 17 years	222	60.2
18 – 20 years	147	39.8
Total	369	100
Gender		
Males	262	71.0
Females	107	29.0
Total	369	100
School Status		
Still in school	267	72.4
Not in school	102	27.6
Total	369	100
Level of Education		
Tertiary	57	15.4
Secondary	187	50.7
Primary	98	26.5
No Education	27	7.3
Total	369	100
Staying With (Head of Household)		
Parents	159	43.1
Guardians	163	44.2
Friends/Alone	47	12.7
Total	369	100
Marital Status		
Ever married	99	26.8
Never married	297	80.5
Total	369	100
Religious Affiliation		
Catholics	93	25.2
Pentecostals	59	16.0
Adventist	97	26.3
Apostolic	93	25.2
Other protestants	27	07.3
Total	369	100
Occupation of Head of Household		
Formal employment	37	10.0
Self-employed/ business	235	63.7
unemployed	97	26.3
Total	369	100

Table 3 above shows the background (socio-demographic) characteristics of the study participants (adolescents aged between 15 and 20 years of age) that took part in the study.

5.1.1 Age Distribution of Respondents

A high proportion of respondents (60.2 percent) enumerated were in the 15-17 years age group while those in the 18-20 years age group accounting for 39.8 percent (n=147) of the total respondents (n=369).

5.1.2 Sex of Respondents

The table depicts a high proportion 71 percent (n=262) of respondents being male compared to their female counterparts who were only 29 percent (n=107).

5.1.3 Schooling Status

The study also revealed that from the 369 sampled population that took part in the study, majority of respondents (72.4 percent) were still in school compared to only 27.6 percent (n=102) that were not schooling.

5.1.4 Head of Household

The study further reveals that majority of the respondents were staying with a guardian (44.2 percent) followed by those that were staying with their parents (43.1 percent). Only 12 percent (n=47) were staying with friend(s) of alone.

5.1.5 Level of Education

The study also reveals that a high proportion of respondents had a secondary level of educational attainment (50.7 percent). It is a well-known fact that young women and men with no formal education (22 percent each) are more likely to have had sexual intercourse by age 15, while those with more than a secondary education are least likely to have done so (ZDHS, 2013-14). Only 15 percent (n=57) of the adolescents had more that secondary education. The rest had either primary (26.5 percent) or no formal education (7.3 percent) as their highest level of education attained.

5.1.6 Marital Status

In terms of marital statuses; 26.8 percent (n=99) were either married or have had been married at the time of the study. The majority 80.5 percent (n=297) were never involved in any form of marriage. But that does not mean they never involved in any sexual activities.

5.1.7 Religious Affiliation

The table further reveals that majority of the respondents were Christians of the Adventist, Catholic and Apostolic denomination (26.3, 25.2 and 25.2 percent) respectively.

5.1.8 Occupation of Head of Household

Majority of head of households 63.7 percent (n=235) were self-employed mostly doing small businesses. Adolescents whose parents/guardians were not in any form reasonable employment or business were 97 (26.3 percent). Formal employment only accounted to 10 percent (n=37) of household heads to adolescents.

5.2 Knowledge Levels on HIV/AIDS

Knowledge of how HIV is transmitted is crucial to enabling people to avoid HIV infection, and this is especially true for young people, who are often at greater risk because they may have shorter relationships with more partners or engage in other risky behaviours. Adolescents were asked questions on definition of HIV/AIDS, modes of transmissions, severity of the disease, preventive measures, symptoms, treatment and beliefs on HIV/AIDS. Knowledge was divided into two categories, those who answered 60 percent or more of the questions correctly in categorize of transmissions, prevention measures, signs and treatment were classified as being knowledgeable (Yes) while anything less was classified as not having sufficient knowledge, thus no (No).

The following factors were significantly associated with knowledge on HIV/AIDS: level of education (p=0.008); schooling status (p<0.001); age (p=0.016); and sex (p=0.012) as shown in table 4.

Table 4: Knowledge Levels on HIV/AIDS by Demographic Characteristics

Background Characteristic	Knowledge on HIV/AIDS		Total [n (%)]	P-Value
	Yes [n (%)]	No [n (%)]		
Overall Knowledge on HIV/AIDS	295 (79.9)	74 (20.1)	369 (100)	
Gender				
Males	210 (80.2)	52 (19.8)	262 (100)	0.016
Females	80 (74.8)	27 (25.2)	107 (100)	
Age Group				
15 - 17 years	157 (70.7)	65 (29.3)	222 (100)	0.012
18 – 20 years	98 (66.7)	49 (33.3)	147 (100)	
School Status				
Still in school	234 (87.6)	33 (12.4)	267 (100)	<0.001
Not in school	67 (65.7)	35 (34.3)	102 (100)	
Level of Education				
Tertiary	50 (87.7)	7 (12.3)	57 (100)	0.008
Secondary	149 (79.7)	38 (20.3)	187 (100)	
Primary	50 (51.0)	48 (49.0)	98 (100)	
No Education	15 (55.5)	12 (44.5)	27 (100)	
Staying With (Head of Household)				
Parents	150 (94.3)	9 (05.7)	159 (100)	0.107
Guardians	153 (93.9)	10 (6.1)	163 (100)	
Friends/Alone	38 (80.9)	9 (19.1)	47 (100)	
Marital Status				
Ever married	72 (72.7)	27 (27.3)	99 (100)	0.084
Never married	201 (67.7)	96 (32.3)	297 (100)	
Religious Affiliation				
Catholics	74 (79.6)	19 (20.4)	93 (100)	0.380
Pentecostals	52 (88.1)	7 (11.9)	59 (100)	
Adventist	92 (94.8)	5 (05.2)	97 (100)	
Apostolic	70 (75.3)	23 (24.7)	93 (100)	
Other protestants	25 (92.6)	2 (07.4)	27 (100)	
Occupation of Head of Household				
Formal employment	35 (94.6)	2 (05.4)	37 (100)	0.507
Self-employed	200 (85.1)	35 (24.9)	235 (100)	
unemployed	92 (94.8)	5 (05.2)	97 (100)	

5.2.1 Levels of Knowledge on HIV/AIDS by Gender

Table 4 above shows the level of knowledge on HIV/AIDS among adolescent respondents. According to the table, the overall level of knowledge on HIV/AIDS was 80 percent with a high proportion of adolescent males (80 percent) having had more knowledge about HIV/AIDS compared to 75 percent of adolescent females at $p=0.012$ (<0.005).

5.2.2 Levels of Knowledge on HIV/AIDS by Age Group

In terms of age, knowledge about HIV/AIDS was lowest among young women and men aged 18 - 20 at 67 percent (n=.98). It is interesting to note that the youngest (15-17 years) adolescents considered in the study had the highest level of knowledge, 70.7 percent (n=157).

5.2.3 Levels of Knowledge on HIV/AIDS by Schooling Status

Among both females and males, knowledge on HIV/AIDS was higher among those were still in school at 87.6 percent (n=234) compared to only 65.7 percent (n=67) of adolescents not schooling who were knowledgeable about HIV/AIDS.

5.2.4 Levels of Knowledge on HIV/AIDS by Level of Education

Suffice to note that the percentage of adolescents with knowledge about HIV/AIDS increases steadily with increasing education, from 55 percent of adolescents with no education to 88 percent of adolescents with more than a secondary education.

5.2.5 Levels of Knowledge on HIV/AIDS by Relationship with Head of Household

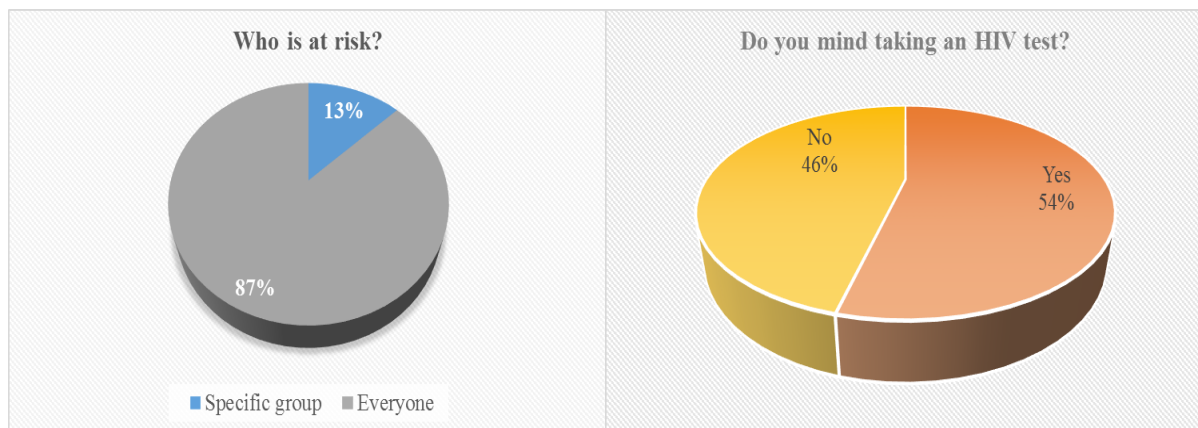
Based on the relationship with the head of the household where an adolescent stayed, table 4 reveals that 94.3 percent of adolescents who stayed with their parents had sufficient knowledge level on HIV/AIDS. While 93.9 percent adolescents who stayed with guardians were sufficiently knowledgeable about HIV/AIDS. Majority of adolescents (19.1 percent) who never had adequate knowledge on HIV/AIDS stayed alone or with friend(s).

5.3 Knowledge levels and Attitudes on HIV/AIDS

A further inquiry was made from the respondents who had knowledge about HIV/AIDS on whom they thought was at risk of contracting HIV.

Figure 2 below shows that high proportion of adolescents that had knowledge about HIV asserted that everyone was at risk of contracting HIV with few of them attributing the risk to specific sub-groups. However, despite the fact that majority of the respondents asserted to know that everyone was at risk of contracting HIV/AIDS, majority of the respondents (54 percent) had a negative attitude towards HIV testing.

Figure 3: Knowledge and Attitude on HIV/AIDS



5.4 Sexual Behaviours of Respondents

Table 5 summarizes the sexual behaviour of those who were sexually active.

Table 5: Sexual Behaviour of Sexually Experienced Respondents

Variable	Females n=107 %	Males n=262 %
Lifetime number of sexual partners (n = 98 females; 251 males)		
One	36.0	53.1
Two	15.3	22.5
Three	11.2	11.1
Four	9.4	5.8
Five or more	28.1	7.5
Ever used condoms (n = 98 females; 250 males)		
Respondents who reported condom use at last intercourse (n = 92 females; 241 males)	46.4	48.9
Self-reported frequency of condom use (n = 98 females; 248 males)		
Always	31.1	25.9
Most of the time	11.5	18.2
Some of the time	14.2	9.9
Not very often	15.2	12.1
Never	28.0	33.9
Mean age at sexual debut:	14.1 years	
Mean age of sexual partner during first intercourse:	13.6 years	

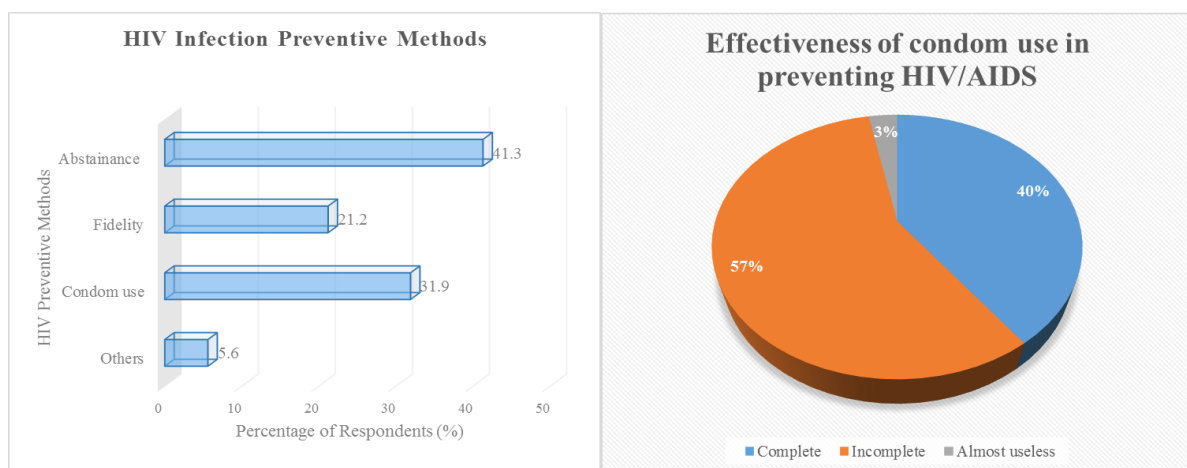
As shown in the table, similar proportions of males and females reported condom use at last intercourse. The main difference between male and female respondents was the number of sexual partners reported. Approximately 53 percent of sexually experienced females reported that they had one sexual partner compared to 36 percent of males, while 8 percent of sexually

active females and 28 percent of males stated that they have had five or more sexual partners over their lifetime. The average age of the first sexual partner among adolescents was 13.6 years and their average sexual debut of 14.1 years.

5.5 HIV Infection Transmission Preventive Methods

Further, an inquiry was made regarding the prevention methods of contracting HIV. Figure 4, shows the results from this inquiry. Based on the figure, it can be noticed that majority of respondents (41.3 percent) asserted that abstinence was one of preventive checks to controlling the transmission of HIV/AIDS, which was followed by those that said condom use.

Figure 4: Preventive Methods of HIV/AIDS and Effectiveness of Condoms in HIV prevention According to Adolescents in Senanga.



The figure further shows that of the 31.9 percent (n=92) respondents asserted that condom use was one of the preventive checks to transmitting HIV/AIDS. Majority (57 percent) however, indicated that despite the fact that condom use was one of the methods of preventing the transmitting of HIV/AIDS, it was not a 100 percent effective method in the prevention of HIV/AIDS.

5.6 Perception on the Ban on Condom Distribution in Schools

The study additionally inquired on the perception on the distribution of condoms in schools. This was done in the context that the Education Policy of 2004 banned distribution of condoms in learning environments, especially at schools below tertiary level.

Table 6: Perceptions of 369 Adolescents on Ban of Distribution of Condoms in Schools, Senanga District

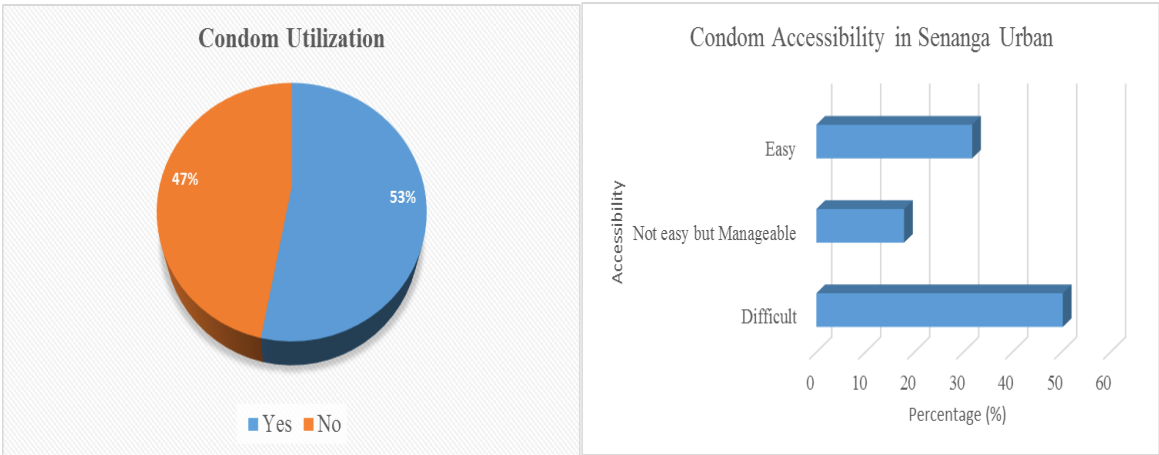
Response	Frequency (n)	Percentage (%)
An excellent idea	65	17.6
A good idea	167	45.3
A bad idea	103	28.0
A very bad idea	34	9.2
Total	369	100

According to the respondents in the study (see table 6), majority of them (45.3 percent) asserted that distribution of condoms in schools is good in that it is a well-known fact that adolescents are a sexually active population. The fact that this population is sexually active, it makes it even more reasonable to distribute free condoms knowing that most of these people are still dependent and thus cannot afford to purchase condoms in an event that they desire to have sexual intercourse.

However, some of the respondents argued that the distribution of condoms may actually encourage school going adolescents to engage in sex and since condoms are not a complete method in preventing transmission of HIV/AIDS; it puts them at risk of contracting HIV/AIDS.

5.7 Levels of condom Utilization among Adolescents

Figure 5: Condom Use and Accessibility



The study revealed that a minority of respondents (47 percent) indicated to have been using condoms when having sex compared to those that said otherwise. Most of the respondents (50.3

percent) indicated that they never used condoms because condoms were difficult to access and therefore this lured them to not using them when having sex (*see figure 5*).

However, (*see table 7*) there were noticeable differences in levels of utilization of condoms with different socio-demographic characteristics of respondents.

Table 7: Levels of Condom Utilization among 369 Adolescents, Senanga urban.

Demographic Characteristic	Condoms Utilization [n (%)]	P-Value
Age Group		
15 - 17 years	26 (12.0)	0.002
18 – 20 years	35 (20.2)	
Gender		
Males	67 (38.7)	0.008
Females	32 (18.5)	
School Status		
Still in school	34 (19.7)	0.001
Not in school	9 (5.3)	
Level of Education		
Tertiary	10 (5.9)	0.003
Secondary	21 (12.1)	
Primary	13 (7.5)	
No Education	7 (4.0)	
Staying With (Head of Household)		
Parents	7 (4.0)	0.235
Guardians	11 (6.4)	
Friends/Alone	17 (9.8)	
Marital Status		
Ever married	56 (32.4)	0.547
Never married	35 (20.3)	
Religious Affiliation		
Catholics	29 (16.7)	0.347
Pentecostals	19 (11)	
Adventist	7 (4.0)	
Apostolic	19 (11)	
Other protestants	12 (7)	
Occupation of Head of Household		
Formal employment	17 (9.8)	0.437
Self-employed/ business	19 (11)	
unemployed	13 (7.5)	

A positive association was observed between age, gender, school status, level of educational of respondents and having comprehensive knowledge on HIV/AIDS. A larger proportion of male respondents reported to have used condoms. The married respondents also alluded to have

used more condoms than the never married. Further, adolescents who were 18 years and above, and pupils reported to have used condoms more ($P < 0.05$). There was no statistically significant difference among educational attainment occupation status, religious denomination and condom utilization.

5.8 Determinants of condom use Among Adolescents

Table 8: Level of Association between Condom use and Background Characterises of 369 Respondents

Background Characteristic	Utilization of Condom		P-Value
	OR	(95% C.I)	
Age Group			
15 - 17 years	3.1	(0.9,7.7)	0.004
18 – 20 years	1.0		
Gender			
Males	0.8	(0.8,7.3)	0.001
Females	1.0		
School Status			
Still in school	0.5	(0.4,1.9)	0.001
Not in school	1***		
Level of Education			
Tertiary	1.0***		0.237
Secondary	0.6	(0.1,0.3)	
Primary	0.5	(0.2,0.4)	
No Education	0.1	(0.4,0.9)	
Marital Status			
Ever married	0.7	(0.4,1.6)	0.278
Never married	1.0***		
Religious Affiliation			
Catholics	1.0***		0.456
Pentecostals	0.6	(0.5,2.5)	
Adventist	0.8	(0.7,2.7)	
Apostolic	0.1	(0.4,2.3)	
Other protestants	0.0	1.0	
Occupation of Head of Household			
Formal employment	1.0***		0.543
Self-employed/ business	0.6	(0.5,2.1)	
unemployed	0.5	(0.4,1.8)	

Associations, ORs and (95% CIs) of socio-demographic factors with utilization of condoms among respondents are given in Table 8. It can be noted that there are indeed some variables that can be considered significant predictors of condom utilization. A number of factors that showed statistical significance with respect to bivariate analysis still have a high level of correlation at multivariate level of analysis. For instance, it can be noted that the ORs (95%

ORs (95% CIs) for gender lies at 1.5 (0.3, 1.0) to using a condom, with males being more susceptible to using condoms than females. This means males are about one and half times more likely to use condoms than their female counterparts. Other correlates of high level of utilization of condoms were marital status and school status [respondents who had ever been married had 0.7 (0.4, 1.6) ORs (95% CIs) of utilizing condoms than the never married and respondents who were still in school had 0.5 (0.4, 1.9) ORs (95% CIs) of using condoms compared to individuals who were not in school.

5.9 Logistic Regression using the Theoretical Health Belief Model

Table 9 describes the results of a logistic regression analysis, fitted to assess the strength of association between perceived vulnerability (participant feeling at risk or not), perceived severity of the disease (AIDS perceived as deadly or not), perceived efficacy (condom effective to prevent infection or not), perceived barrier (problems with using condoms) and the lack of condom use.

Table 9: Effect of perceived efficacy of condom, barriers to condom use, vulnerability and severity on the lack of condom use

Variables	Crude OR (95% CI)	Adjusted OR (95% CI)
No perceived risk to HIV infection	10.2 (0.5 – 32.1)	NA
AIDS not perceived as a deadly disease	2.9 (0.8 – 30.1)	NA
Perceived incomplete protection using condoms	11.1 (4.2 – 23.4)	10.1 (2.1 – 28.7)
Reporting any problem using condom	4.9 (2.1 – 13.7)	1.9 (1.8 – 8.9)

Perceiving condom as ineffective (OR=10.1, 95% CI=2.1 – 28.7) and having reported problems with using the condom (OR=1.9, 95% CI=1.8 – 8.9) were both associated with the lack of use of condom. Hence, adolescents who perceived condoms as ineffective were about ten times more likely not to use condoms compared to those who correctly perceived condoms use as an effective way of preventing HIV infection transmission. In the same way adolescents who reported problems with using condoms were two times less likely to use condoms compared to the other group who never reported any problems. However, perceiving oneself as vulnerable to HIV infection (OR = 10.2, 95%CI = 0.5 – 32.1) was not strictly statistically significant since most interviewees felt vulnerable, reducing the power of detecting a significant difference. This

variable was also a weak confounder for the effect of perceiving the condom as ineffective. Not perceiving HIV/AIDS as a deadly disease (OR = 2.9, 95%CI = 0.8 – 30.1) was not associated with the lack of use of condoms.

Crude OR was calculated from a univariate logistic regression while Adjusted OR was calculated from a multivariate logistic regression including Perceived incomplete protection using condoms and reporting any problem using condom. ‘No perceived risk to HIV infection’ and ‘AIDS not perceived as a deadly disease’ were Not Applicable (NA) for the Adjusted OR because these variables did not have an important effect on the use of condom.

CHAPTER VI: DISCUSSION, STUDY LIMITATIONS CONCLUSION AND RECOMMENDATIONS

6.1 Discussion of Findings

This study aimed at establishing the barriers to condom utilization to prevent HIV/AIDS among adolescents in Senanga urban of Western province in Zambia. This chapter, therefore, presents a discussion of the main findings from the study and identified number of barriers to condom utilization among adolescents. The study used the Health Belief Model (HBM) to determine sociodemographic, behavioural, and cultural factors associated with condom use (or intentions to use condoms) for HIV prevention among a sample of 369 adolescents in Senanga district. The HBM is one of the most widely used behavioural frameworks for more than five decades. This discussion has been structured in line with objectives of the study.

6.1.1 Awareness on HIV/AIDS

Study results showed there is a high awareness (80 percent) of HIV/AIDS in general and that males knew more about the modes of transmission of HIV/AIDS and its impacts than females. Adolescent males (80 percent) had more knowledge about HIV/AIDS compared to 75 percent of adolescent females. Pupils and adolescents who have passed through secondary education were more knowledgeable on HIV/AIDS. This could be because they have learnt more through Sexual and Reproductive Health (SRH) education offered in schools. Ndubani and Höjer (2001) established that in Zambia sex education programmes increased knowledge on STIs including AIDS and the use of contraceptives such as condoms from 19.5 percent to 39.0 percent.

6.1.2 Levels of Condom Use

Furthermore, the study revealed that consistent use of condoms was low at 47 percent. In line with expectations regarding gender differences in condom use, males were more likely than females to have ever used condoms or have used them at last intercourse. As indicated in the results chapter, 49.8 percent of males and 45.3 percent of females who were sexually active reported condom use during the last intercourse. Suffice to note that according to the reports by the National AIDS Council (NAC) of 2014, it was established that females had a low utilization level of condoms than males and in accordance to the Zambia Demographic and Health Survey of 2014, females engage into having first sexual intercourse than males before

the age of 18 (CSO, 2014; NAC, 2014). Therefore, based on the above statistics, it shows that a high proportion of females are at risk of contracting the HIV virus at a younger age than males. These findings also agree with prior research (Bertrand and others 1991; Wilson and others 1991) which indicated that condom use tends to be higher among males in terms of both consistent use and ever having used condoms. Wilson and others (1991) further argued in favour of these findings that, “....., males usually have more access to condoms; and in the African context/culture, it is a taboo for female (girls) to carry condoms around otherwise they will be labelled as prostitutes, whereas boys easily carry them around in case they need to use them.” The results also reflect the findings of the Zambia 2013-14 Demographic and Health Survey, which reported condom use at 40 percent and 49 percent among young women and men aged 15-24 respectively, who had premarital sexual intercourse in the 12 months prior the 2014 ZDHS (CSO, 2014). Among never-married adolescents aged 15 to 19 years, the prevalence of condom utilization at the last premarital sexual intercourse was 36.5 percent among females and 42.5 percent among males (CSO, 2014). These results were consistent with the study done by Warren (1995) and others, which revealed that only 54.4 percent of sexually active youths reported using a condom at their last intercourse, with a percentage of 60.5 for males and 48.6 for females.

These findings suggest that adolescents are at risk of contracting sexually transmitted infections, including HIV. despite a relatively acceptable knowledge of modes of transmission and prevention methods, only a few of participants declared using condoms, which is an indication that a relatively good knowledge about HIV/AIDS, even though necessary, may not be a key factor in behavioural change in fighting HIV epidemic in the study population. These findings also indicate that programmes, which aim only at increasing awareness and knowledge, may not succeed. Therefore appropriate measure need to be taken to improve levels of condom use among sexually active adolescents.

6.1.3 Socio-demographic, Economic and Cultural Determinants of Condom Use

There is a scarcity of evidence on the influence of the socioeconomic context on adolescent sexual behaviour. However, previous research indicated that low socioeconomic status is often associated with higher levels of adolescent sexuality (Eaton and others 2003). On the other hand, given the 26 percent, unemployment rate and 64 percent involved in self-employment mostly cross-district and country business among sampled adolescents' household heads, low

socio-economic class may be an indication that both parents have significant times away from home. Thus, young people in the low socioeconomic group may have less adult supervision. This situation provides them with sufficient privacy to engage in sexual intercourse and other risk taking behaviour. Results from this study did indicate that the frequency of knowledge on HIV/AIDS and condom use increased with higher socioeconomic status. Youth from high socioeconomic status (formal employment) may be more likely to have educated parents and who, therefore, have a greater awareness of the prophylactic benefits of condom use and more liberal attitudes towards sexual behaviour.

The bivariate analyses results showed that young people from high socioeconomic status would be more likely to report condom use. This could be because they have a greater financial capacity to purchase condoms. However, socioeconomic status was not a significant predictor of condom use when controlling for other variables. There were noticeable differences in levels of condom utilization across different socio-demographic characteristics of respondents. For instance, a positive association was observed between age, gender, school status, level of educational attainment of respondents and having comprehensive knowledge on HIV/AIDS. Male adolescents, pupils and those with already attained secondary or above education were more likely to use condoms.

Gender is another important facet in most studies that have been undertaken when looking at associations. The findings of the results showed a very strong association between gender of respondents and condom use. The male respondents indicated a higher condom use rate compared to the female respondents. This result corresponds with the findings of the UNAIDS (2016) study on 'Putting HIV prevention among adolescent girls and young women on the Fast-Track and engaging men and boys' and concluded that, "... adolescent girls are substantially affected by the HIV epidemic due to gender roles prevalent in society, to social norms that affect them, and to their limited access to education and resources, all of which prevent adolescent girls and young women from making essential decisions about their health and lives. Harmful laws and practices in relation to early marriage, early pregnancy and lack of access to confidential sexual and reproductive health services prevent adolescent girls and young women from obtaining essential HIV prevention information and services (UNAIDS, 2016).

On the other hand, pupils and adolescents who have passed through secondary education are more likely to use condoms. This could be because they have more knowledge on HIV/AIDS and condom use through Sexual and Reproductive Health (SRH) education offered in schools. In an effort to reduce unintended pregnancies among secondary school learners, the government has introduced a variety of school-based abstinence and sex education programmes. Ndubani and Höjer (2001) established that in Zambia sex education programmes increased the use of contraceptives and condoms from 19.5 percent to 39.0 percent. However, more research is required to better explain barriers to condom utilization. However, Anti-AIDS activists still believe government can do more by legalising the distribution of condoms in secondary school (Mulenga, 2014).

One interesting finding of this study is increased knowledge on HIV/AIDS among adolescents as a result of SRH taught in secondary schools (Ndubani and Höjer, 2001). In connection to this we also recommend that the Zambian government consider reintroduction of condom distribution in Schools. Secondary school pupils in predominantly rural districts like Senanga are opinion leaders and can be of help in promoting awareness on benefits of condom use among peers. This can increase knowledge on condoms and also lead to increased accessibility and utilization among adolescents for prevention of HIV infection transmission. Knowledge and accessibility are key to utilization of a health service (Parker, et al., 2000).

6.1.4 Adolescents' Knowledge and Beliefs on HIV/AIDS

Using the HBM to analyse the determinants of behavioural change in our study population, we can conclude that there is a high-perceived vulnerability and perceived severity, and yet this does not encourage condom use. An important proportion of participants do not believe in the efficacy of condoms and there are barriers to using them.

Our measure of perceived vulnerability might not be sensitive enough to capture differences in perceived risks. In fact, all females and most males felt they were at risk of acquiring the infection, yet only a small proportion were using condoms. Another explanation may be that perceived risk is not a driving force in behavioural change in this subset of the population. This is an illustration of the complexity of modelling human behaviour and can thus make a case for further cultural-specific HIV-behavioural research. When only considering the percentage of condom use by gender, females appear to be at a higher risk of acquiring HIV even as they appeared to know less about transmission routes and prevention methods. This might be due to

the well-established difficulty facing females in negotiating the terms of sexual intercourse as also revealed by Hounton et al (2015) on a study ‘Towards an Understanding of Barriers to Condom use in Rural Benin using the Health Belief Model’. In fact, gender inequality is associated with poverty, condom with distrust and sexual economic exchange is not perceived as prostitution (Parker et al., (1995). All these factors make female adolescents more vulnerable to HIV infection, therefore it is important to consider empowerment of females and consider gender equality and poverty reduction as key strategies of HIV/AIDS prevention programmes.

Results from this study are comparable to those found in a similar study in the USA (Mahoney, et al., 1995) and in a review of published studies using HBM (Glanz, et al. 2002) where perceived barriers were found to be the single most powerful predictors of the HBM. The findings are also consistent with results of other studies conducted in Kenya (Mattson, 1999) and in Benin (Houton et al., 2015) in which perceived barriers were found as being the strongest predictors of condom use. However, these results cannot be generalized across settings for example, in Zimbabwe social support was found to be the most consistent factor associated with sexual risk reduction (Wilson and Lavelle, 1992). Hence, it appears important to conduct operational behavioural researches in each local setting to identify factors that influence condom use.

6.2 Study Limitations

The study had some limitations in that certain things could not be carried out due to the following reasons:

- ✓ The self-reported researcher-administered questionnaire used could have led to under-reporting due to the sensitive nature of the topic especially to those under 16years of age more especially on the issues of condom use and multiple partners.
- ✓ The study used a cross-sectional design; thus, causality cannot be inferred. A study using a longitudinal design would be necessary to assess the significance and stability of predictors of condom use over time.
- ✓ The study was only conducted in Senanga urban community, and 369 respondents were interviewed, which made it difficult to generalize the findings to other parts of the country. The findings of this study, therefore, only apply to adolescents in Senanga Urban from which a representative sample was taken.

- ✓ For ethical reasons, persons less than 15 years old were excluded even though some may have already been sexually active.
- ✓ There was a potential selection bias by not having equal number of respondents by gender, which resulted in an over-sampling of males.

6.3 Conclusion

Although further investigation is still needed, the present study suggested that the HBM can be used to explore and explain the predictors of condom use behaviours among adolescents. Perceived benefits of condom use and perceived barriers to condom use are important and direct determinants of condom use among young people. Analyses revealed that condom use for HIV prevention among adolescents in Senanga district is associated with a wide array of factors. This implies that intervention programs targeting the youth should incorporate wide range of topics and should adopt multiple educational approaches in order to increase the likelihood of success in enabling young people to make responsible decisions about their sexual behaviour. Condom use, in this study population, depends on its perceived quality and perceived efficacy. Condom outreach programmes should be defined at community level and should address barriers to systematic condom use. The programmes must be defined in association with the community, using problem-solving techniques and selecting the most relevant targets, based on their importance and changeability (Coreil, et al., 2001). Data from this study could be useful for the design and planning of health intervention programmes, resource allocation and evaluation of condom outreach activities in Senanga district and Zambia at large.

Future interventions with adolescents, especially adolescents who are sexually active, should target behaviours, like condom use, that have been empirically demonstrated across a variety of adolescent subgroups and venues to be most amenable to change. Taking a focused approach that targets only those areas of behavioural change that are both reasonable and feasible for adolescents to accomplish may result in prevention efforts that not only reduce adolescents' sexual risk behaviours, but lay the foundation for more sustainable sexual risk-reduction over time. Ultimately, this approach may result in reductions in STI/HIV among adolescents (UNAIDS, 2016).

6.4 Recommendations

Based on the above findings and discussions, we therefore came up with the following recommendations:

- ✓ It is recommended that the Ministry of General Education (MoGE) in collaboration with the Ministry of Health (MoH) and the Ministry of Community Development (MCD) come up with policies that support increased condom accessibility alongside counselling around schools. This may involve reintroduction of condom distribution in schools.
- ✓ Future prevention interventions should be focused on increasing adolescents' awareness of the benefits from condom use, the reduction in the barriers to condoms use, and the improvement in self-efficacy among adolescents.

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APPENDICES

Appendix 1: Information Sheet

Introduction

My names are Mweene Bright. I work for the Ministry of General Education as a teacher at Matauka Secondary School in Senanga, Western Province. Currently I am a Master of Public Health student at the University of Zambia, School of Public Health, in my research year. I am hereby requesting for your participation in my research.

TOPIC: BARRIERS ASSOCIATED WITH CONDOM USE FOR PREVENTION OF HIV INFECTION TRANSMISSION AMONG ADOLESCENTS: A CASE OF SENANGA URBAN DISTRICT

Purpose of the Study

Greetings! I invite you to participate in a study of barriers associated with condom utilization among adolescents in Senanga district. The main objective of this study is to draw up factors that are associated with condom utilisation among adolescents. Recommendations will also be given to policy makers.

Participation

Potential participants for this study are adolescents in Senanga. You have been asked to participate because you fit these descriptions. Overall, I expect about 369 adolescents.

Procedure of Research

If you agree to participate in the study:

I will ask you to take part in answering simple structured questions (questionnaire). The questionnaire will have few questions about condom utilisation and you will take less than 15 minutes to complete.

Confidentiality

Your personal information like names will not be required on the answer sheets and any information requested for will be anonymous. Therefore there is nothing to fear for you to be known as to who answered what question. Your name will not be included in the tape and the typed documents. Therefore, I am kindly asking you to be as truthful as you can.

Risks and Discomforts

There are no physical risks associated with participating in answering questionnaires or FGDs. However, I recognize that it may have psychological effects for those with bad sexual experience. In addition, some information you may share in FGDs or enter in the questionnaires may be personal or may be sensitive to other stakeholders. However, I would like to assure you the information that we get from you will not be shared with anyone outside the research team.

Voluntary Participation

Your participation will be purely voluntary. You may at any time wish to stop the participation if you feel uncomfortable about discussing condom utilization issues, and seek further clarifications concerning the same. If you decide to withdraw, you will not be penalised for doing so.

Payment

There is no payment for participating in the study. However, refreshments and snacks may be provided during data collection.

Benefits

If you participate in the study, there are no direct benefits to you but you will contribute to the development of new knowledge, which we hope will inform policy and benefit the education curriculum review process.

CONTACTS FOR FURTHER CLARIFICATIONS

My physical address is
Senanga Mission Township, Senanga.
Office contact: Matauka Secondary School,
P.O BOX 620174,
Senanga.
Cell # +260 979 204 407

OR **THE CHAIRPERSON**
UNZA-BREC
P.O. BOX 50110
LUSAKA, ZAMBIA
Tel # 01-256067 54

Appendix 2: Consent Form

The purpose of this study has been explained to me and I fully understand what is involved including the risks and benefits. I have therefore volunteered to participate with my own free will.

Your signature (or thumbprint/mark) on this form means:

- You have been informed about the program’s purpose, procedures, possible benefits and risks.
- You have been given the chance to ask questions before you sign.
- You have voluntarily agreed to be in this program

Signed:..... Name:.....

WITNESSED BY:

Date:/...../.....

Witness:

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OR

The Chairperson

BIOMEDICAL RESEARCH ETHICS COMMITTEE
UNIVERSITY OF ZAMBIA
P.O. BOX 50110
LUSAKA, ZAMBIA.

Appendix 3: Letter of Consent to Parents or Guardians

Date...../...../.....

Dear Parents/Guardian

My name is Mweene Bright. I am sending this letter to explain why I would like your child to participate in my study. I am doing a research study about barriers associated with condom utilization in the prevention of HIV infection among adolescent in Senanga district. With your permission, I will ask your child to attend a short interview that would take about 15 minutes. Your child's participation in this study is voluntary. If not comfortable with the topic, your child may quit this study at any time by simply requesting to end the interview. There are no physical risks associated with participating in answering questionnaires. However, I recognize that it may have psychological effects for those with bad sexual experience. In addition, some information your child may share may be personal or may be sensitive to other stakeholders. However, I would like to assure you the information that we get from your child will not be shared with anyone outside the research team.

If you have any questions or if you would like to receive a final copy of this report please contact me at cell: 0979 204407 or The Chairperson, Research Ethics Committee. UNZA, at: 01-256067.

This letter will serve as a consent form for your child's. If you have any questions about your child's rights as a participant, you may contact the Chairperson on the above phone number given.

Sincerely yours,

Mweene Bright (researcher)

Statement of Consent

I read the above consent form. The nature, demands, risk, and benefits of the have been explained to me. I am aware that I have the opportunity to ask questions about this research. I understand that I may withdraw my consent and discontinue my child’s participation at any time without penalty. In signing this form, I am not waiving any legal claims, rights, or remedies.

Child’s Name

Signature of Legal Guardian

Date

I certify that I have explained to the above named individual the nature and purpose, the potential benefits and possible risks associated with participation in this research study. These elements of Informed Consent conform to guidelines of the research policy on the use of Human Subjects.

Student (Researcher)

Date

Appendix 4: Assent Form for Adolescents under 18 years of Age

Project title: **Barriers Associated with Condom Use for Prevention of HIV Infection Transmissions among Adolescents: A Case of Senanga Urban District, Western Zambia.**

Investigator: **Mweene Bright**

I am doing a research study about barriers associated with condom utilization among adolescent in Senanga district. If you decide that you want to be part of this study, you will be asked to answer some easy questions about yourself and condom use. The interview with you will take about 30 minutes.

I have randomly chosen you to assist with answering a few questions. I would very much appreciate your participation in this this research. If you agree to participate, we will ask you questions from a printed questionnaire and we will note your answers on the questionnaire. The risks to you as a participant in this research are minimal. Some of the questions are personal and some people may find them difficult to answer. You do not need to answer any questions that you do not fill comfortable with.

When we are finished with this study, we will write a report about what was learned. This report will not include your name or that you were in the study. You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that is okay too. Your parents and head teacher know about the study too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

(Sign here)

(Date)

Appendix 5: Interview Schedule for Adolescents

THE UNIVERSITY OF ZAMBIA SCHOOL OF PUBLIC HEALTH

Title: BARRIERS ASSOCIATED WITH CONDOM USE FOR PREVENTION OF HIV INFECTION TRANSMISSION AMONG ADOLESCENTS: A CASE OF SENANGA URBAN DISTRICT OF WESTERN ZAMBIA

Dear respondent,

My name is Bright Mweene. I am a Master of Public Health (MPH- Population studies) student in the School of Public at the University of Zambia. I am conducting a survey on the barriers associated with condom utilization among adolescents: a case of Senanga district.

The main objectives for my study are:

1. To estimate adolescents' knowledge on HIV/AIDS and the prevalence of condom utilization among sexually active adolescents in Senanga district
2. To determine the socio-demographic, economic and cultural factors associated with condom utilization among adolescents in Senanga district
3. To assess how adolescents' knowledge and beliefs on HIV/AIDS influence condom use in Senanga district.

You have been randomly selected to assist in this study. Your participation is voluntary and all information you provide will be treated in a strictly confidential manner. Therefore, I assure you that your views shall not be used in any way that might damage or destroy your reputation. If you need any clarification or help please feel free to contact my supervisors Dr Banda J, Dr Bwembya P, and Dr. Likwa R.N, School of Public Health; University of Zambia, P.O Box 32379, Lusaka

Your cooperation will be highly appreciated

Yours sincerely

Bright Mweene

Questionnaire Number

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SECTION 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS (SD)		CODE
SD 1. What is your age at last birthday?	<ol style="list-style-type: none"> 1. 15 to 17 years 2. 18 to 20 years 	
SD 2. What is your sex?	<ol style="list-style-type: none"> 1. Male 2. Female 	
SD 3. Are you schooling?	<ol style="list-style-type: none"> 1. Yes 2. No 	
SD 4. What is the highest level of school you attended?	<ol style="list-style-type: none"> 1. None 2. Primary 3. Secondary 4. Tertiary 	
SD 5. Whom are you staying with?	<ol style="list-style-type: none"> 1. Parents 2. Guardians 3. Friends 	
SD 6. What is your marital status?	<ol style="list-style-type: none"> 1. Married 2. Single 3. Other: _____ (Specify) 	
SD 7. State your religion	<ol style="list-style-type: none"> 1. Catholic 2. Adventist 3. Apostolic 4. Pentecostal 5. Other Protestants 	
SD 8. How importance is religion to you?	<ol style="list-style-type: none"> 1. Highly important 2. Medium importance 3. Not important 	
SD 9. Family's source of income	<ol style="list-style-type: none"> 1. Employed 2. Self Employed 3. Unemployed 	
SECTION 2: GENERAL KNOWLEDGE ON HIV/AIDS (RISK CONDITION) (GKH)		
GKH 1. Have you ever heard about HIV/AIDS	<ol style="list-style-type: none"> 1. Yes 2. No 	

GKH 2. In your knowledge how severe is HIV/AIDS	<ol style="list-style-type: none"> 1. Deadly 2. Don't know 3. Imaginary 4. Other 	
GKH 3. How could someone get infected by HIV?	<ol style="list-style-type: none"> 1. At least 2 2. one or no correct answer(s) 	
GKH 4. Who do you think are at risk of getting HIV?	<ol style="list-style-type: none"> 1. Everyone 2. specific groups 3. Don't know 	
GKH 5. In your knowledge, what are the prevention methods of getting HIV?	<ol style="list-style-type: none"> 1. Abstinence 2. Fidelity 3. Condom 4. Other 5. Don't know 	
GKH 6. How could you recognize a HIV-infected person?	<ol style="list-style-type: none"> 1. Could not 2. Cachexia 3. Other symptoms 4. Don't know 	
SECTION 3: BELIEFS ON HIV/AIDS (BH)		
BH 1. Do you believe HIV really exists?	<ol style="list-style-type: none"> 1. Yes 2. No 3. Don't know 	
BH 2. Do you think you are at risk of getting HIV?	<ol style="list-style-type: none"> 1. Yes 2. No 3. Don't know 	
BH 3. If no to BH2 why?	<ol style="list-style-type: none"> 1. Fidelity 2. Condom use 3. Other 4. Don't know 	
BH 4. Where do you believe HIV originates from?	<ol style="list-style-type: none"> 1. God 2. Bewitchment 3. Other 4. Don't know 	
BH 5. Do you think one can completely cure from HIV/AIDS?	<ol style="list-style-type: none"> 1. Yes 2. No 3. Don't know 	

BH 6. If yes to BH5, how?	<ol style="list-style-type: none"> 1. Medicine 2. Herbs 3. Prayers 4. Other 5. Don't know 	
BH 7. How would you rate the protective effect provided by condoms?	<ol style="list-style-type: none"> 1. Complete 2. Incomplete 3. Useless 4. Don't know 	
BH 8. Does your religion believe HIV exists?	<ol style="list-style-type: none"> 1. Yes 2. No 3. Don't know 	
BH 9. What is the position of your religion towards condom use?	<ol style="list-style-type: none"> 1. Favourable 2. Unfavourable 3. Indifferent 4. Don't know 	
SECTION 4: BEHAVIOURS AND ATTITUDES (BA)		
BA 1. Would you mind taking a HIV screening test if you were asked?	<ol style="list-style-type: none"> 1. Yes 2. No 3. Don't know 	
BA 2. Have ever had sexual intercourse?	<ol style="list-style-type: none"> 1. Yes 2. No 	
BA 3. Do you use condoms?	<ol style="list-style-type: none"> 1. Yes 2. No 3. No answer 	
BA 4. If No is your answer to BA2, Would you mind using a condom if you indulge in sex?	<ol style="list-style-type: none"> 1. Yes 2. No 3. Don't know 	
BA 5. If No or No answer to BA3, why?	<ol style="list-style-type: none"> 1. Breaks 2. Not 100% safe 3. Only God saves 4. Others <p style="text-align: center;">_____</p>	
BA 6. Numbers of sexual partners during the last 12 months	<ol style="list-style-type: none"> 1. One 2. Two 3. Three 4. four or more 	

BA 7. Did you use condom during the last occasional intercourse?	<ol style="list-style-type: none"> 1. Yes 2. No 3. N/A 	
BA 8. Do you encounter any problem using condoms?	<ol style="list-style-type: none"> 1. Yes 2. No 3. N/A 	
BA 9. If yes to BBP6, what type of problems?	<ol style="list-style-type: none"> 1. Less lubricated 2. Less pleasure 3. Break easily 4. Other 	
BA 10. 1. Age at sexual debut 2. Age of sexual partner at sexual debut	<ol style="list-style-type: none"> 1. _____ 2. _____ 	
BA 11. How often do you drink beer?	<ol style="list-style-type: none"> 1. Rarely to never 2. Often to sometimes 	
BA 12. How often do you smoke cigarettes?	<ol style="list-style-type: none"> 1. Rarely to never 2. Often to sometimes 	

Adapted from the World Health Organization / Global AIDS Program's questionnaire

End of Interview
Thank You Very Much for Your Time