

**FACTORS ASSOCIATED WITH CONTRACEPTIVE USE  
AMONG YOUTHS AGED 15 TO 24 YEARS IN ZAMBIA**

By

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A Dissertation submitted in partial fulfilment of the requirements for the Degree of Master of  
Public Health in Population Studies.

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## **DECLARATION**

I, Melody Nalwendo Simataa hereby declare that this dissertation is my original work and has not been presented for any other awards at the University of Zambia or any other University.

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## **CERTIFICATE OF APPROVAL**

The Board of Examiners have approved the dissertation of MELODY NALWENDO SIMATAA as partial fulfilment of the requirements for the award of the Degree of Master of Public Health in Population studies at the University of Zambia.

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## ABSTRACT

Understanding the factors that are associated with contraceptive use among female and male youths in Zambia is essential to decision making in public health related issues such as reduction in unintended pregnancies, unsafe abortions and disability such as fistula. There is low contraceptive use among youths in Zambia and men play an important role in fertility decisions. Thus, the need to investigate the factors associated with contraceptive use among Male and female youths aged 15-24 years in Zambia.

The study was cross sectional and used secondary data which was extracted from the 2013-2014 Zambia demographic health survey (ZDHS) database which was nationally representative. The study only considered 3599 males and 4498 females aged 15-24 years that were sexually active prior to the survey. Data was extracted and analysed using Stata version 13. Statistical analysis involved univariate analysis which is descriptive, bivariate analysis for associations and backwards multiple logistic regression to examine the determinants of contraceptive use among the youths in Zambia at 95% level of significance.

The determinants of contraceptive use were age, parity, marital status and media exposure that increased with contraceptive use for both females and males. Contraceptive use increased with an increase in age, parity for females with one or more children and males with 1-4 children and media exposure (OR=1.28 for females and OR-1.42 for males). Female youths with urban residence, higher education (OR=2.62) and those that talked to a health worker at the health facility (OR=1.57; p-value<0.001) were more likely to use contraceptives than their counterparts. Males associated with rich household wealth status were more likely to use contraceptives (OR=1.25). Study also found that 99% of youths had knowledge of contraceptives but contraceptive use was as low as 32% among females and 39% among males.

The results have implications for the youth programmes in Zambia. Therefore, media messages on contraceptive use focusing on youths aged 15-19 years should be intensified. Health professionals should be trained to be better equipped to deal with youths as they access services. Interventions focusing on the girl child's education should continue in order for the country to reduce early and unwanted pregnancies and their resultant negative consequences. Additionally, interventions in rural areas should be intensified and youths should be economically empowered as those with a rich household status were more likely to use contraceptives.

**Key words:** Contraceptive use, youths aged 15-24, Zambia demographic health survey, Zambia

## **DEDICATION**

*Dedicated to my father, Mr Arnold L. Simataa and my mother, Mrs Joyce K. Sitenge Simataa.*

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## ACRONYMS AND ABBREVIATIONS

CPR	Contraceptive Prevalence Rate
CSO	Central Statistics Office
EA	Enumeration Area
FP	Family planning
LARCs	Long acting reversible contraceptives
MOH	Ministry of Health
NGOs	Non-Governmental Organisations
TFR	Total Fertility Rate
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s emergency Fund
UNZA	University of Zambia
UNZABREC	University of Zambia Biomedical Research Ethics Committee
YFCs	Youth Friendly Corners
ZDHS	Zambia Demographic Health Survey

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background**

Inadequate use of contraceptives among youths has led to unintended pregnancies, unsafe abortions, disability such as fistula, infant mortality and high teenage pregnancies which are public health concerns (Singh, Darroch and Ashford, 2014). Globally, unintended pregnancies among sexually active teenagers are mostly due to contraceptive non-use (Manlove et al., 2004). In developed countries, 63% of married women aged 15-49 years practiced family planning and 57% used modern contraceptives. Thus, most women in developed countries use contraceptives while in developing countries fewer than one in five married women used modern contraceptive methods (Clifton and Kaneda, 2013).

In the sub-Saharan African region progress is being made steadily over time in the use of family planning. Notwithstanding the above, in some sub-Saharan African countries use of family planning has remained stable or even declined (Ibid, 2013). In countries such as Malawi and Bangladesh there was an increase in contraceptive use among young people from 7% to 29% in 2010 and 33% to 47% in 2011 respectively (Chandra-Mouli and Braet, 2014). Despite this increase in developing countries, the absolute numbers of youths who use contraceptives, are relatively low among the youths due to barriers that include erratic supply, costs, inhibiting laws and policies especially for the unmarried youths. The health workers also tend to refuse to provide unmarried women with contraceptives. There are also social pressures that may prevent use (Ibid, 2014). In sub-Saharan Africa, expanded access to family planning services can result in a projected reduction in unintended pregnancies by two-thirds, reduction in unsafe abortions by three quarters, decrease in maternal deaths by 69% and decrease in new born deaths by 57% (Singh and Darroch, 2012).

The health of young people is a public health concern as about 45% of Zambia's population is below the age of 15 years (Central statistics office (CSO), 2014). Zambia is one of the countries with a high adolescent fertility with an age specific fertility rate of 141 births per 1000 women compared to the sub-Saharan African regional average of 103 births per 1000 women aged 15-19 years (World Bank, 2014). Use of modern contraception in Zambia had improved from 15% in 1992 to 49% in 2014. However, the total fertility rate (TFR) had just dropped by over 1 birth per woman in the last two decades from 6.5 births per woman in 1992 to 5.3 births per woman in 2014 (CSO, 2014). The contraceptive prevalence rate (CPR) in Zambia is at 49% which is

lower compared to countries like Rwanda which was 52% at time of its last census (Gutmacher, 2010).

There is a wide range of contraceptives that are available and offered in Zambia which include permanent ones like female and male sterilisation. There are long acting reversible contraceptives (LARCs) methods like Intrauterine device (IUD) and implants; and the short acting reversible methods including the pill, injectables, male condom, female condom, Lactational amenorrhoea method (LAM), emergency contraception and Standard days method (SDM). The traditional ones include rhythm and withdrawal methods (CSO, 2014).

This research therefore aimed at determining the factors that are associated with the use of contraceptives among youths aged 15 to 24 years in Zambia.

## **1.2 Statement of the problem**

There is low contraceptive use among the youths in Zambia. There were 89.4% of young women aged 15-19 years and 65.4% aged 20-24 years that were not using any method of contraception. This means only 10.6% among those aged 15-19 years and 34.6% aged 20-24 years were using contraception (CSO, 2014). About 81.4% unmarried young women aged 15-19 years and 52% aged 20-24 years who were sexually active were not using any contraceptive method. Additionally, only 24% of females and 22% of males aged 20-24 years reported to have used a condom at first sexual encounter (Ibid, 2014). This points to the poor use of contraceptives by the youths despite being sexually active. Another study conducted in Zambia showed that non-use of condoms was at 59% at most recent sexual intercourse among urban youth (Pinchoff et al, 2017).

The consequences of low use of contraceptives by the youths include contraction of sexually transmitted infections (STIs) like HIV/AIDS, unwanted pregnancies and unsafe abortions (Ministry of Health (MoH), 2011). In 2009 the University Teaching Hospital facility based data showed that unsafe abortions accounted for 30% of all maternal deaths (MoH, 2009). Additionally, low use of contraceptives can lead to high levels of maternal and infant mortality because of early pregnancies and unsafe abortions. According to CSO (2014) Zambia has a maternal mortality ratio of 398 maternal deaths per 100,000 live births. The low use can also lead to disability such as fistula and injury to pelvic muscles or organs to young mothers who have not yet attained their adult stature (Ashford, 2002). Low use of contraceptives can also lead to an early start of child bearing which reduces women's educational and employment opportunities leading to poverty (CSO, 2009).

In trying to improve access to contraceptives and in turn reduce the above mentioned problems, the government of Zambia has put up some interventions such as the youth friendly corners (YFCs), which served as entry points to health services for youths. The YFCs provided services such as contraceptives as well as distribution of appropriate information, education and communication (IEC) materials among others. The government partnered with non-governmental organizations (NGOs) such as Planned Parenthood association of Zambia (PPAZ), Child fund, Center for infectious disease research in Zambia (CIDRZ), Marie Stopes, Scaling up Family planning (SUFPP) and Afya Mzuri among others to provide family planning to youths in Zambia. This is in addition to offering general health care services at health facilities (MoH, 2011).

There are also government policies such as the national reproductive health policy which promotes increased accessibility and availability of the affordable youth friendly health services to youths at all levels through avenues like YFCs (MoH, 2008). The population policy focuses on family planning aimed at reducing population growth for economic development (MoH, 2011).

Despite all these initiatives by the government, Bryant (2015) reports that the YFCs have proven not to be effective in increasing contraceptive use. He further notes that this could be attributed to staff being untrained to handle the youths and resources or funding being unavailable to support the participation of peer educators. In addition, in Zambia, there is lack of clear implementation or direction of the family planning policy that can deal with issues of accessibility and availability of services of contraceptives to youths who are an intersection between childhood and adulthood (UNICEF, 2012).

The major factors influencing low contraceptive use could be policies regarding the youths, cultural factors, behavioral factors such as fear of side effects, poor access to contraceptives due to shortages and geographical barriers. The other factors include the programs put in place to provide information to the youths and individual factors that can either be demographic such as age or parity and socio-economic factors are associated with contraceptive use (Glinski et al, 2014). In Zambia the national reproductive health policy is there but the policy is unclear as the government is undecided on how to deal with the age group so they lack access to contraceptives. The main factors are linked to modern contraceptive use as shown in the framework.



### 1.3 Conceptual framework

There is a link among the different factors that affect modern contraceptive use directly and indirectly. This study is adapting and modifying the Anderson and Newman's Health services utilization framework which examines conditions that hinder utilization of a service at individual level (Wolinsky, 1988).

The already existing characteristics such as age, marital status, residence and parity affect contraceptive use indirectly through education, employment status and wealth status. Youths in the older age groups are more likely to use contraceptives, this could be attributed to higher levels of education compared to younger age groups. Youths in older age groups are also expected to be in employment and have higher wealth status which would increase contraceptive use. The youths from households with higher wealth status are also expected to have high contraceptive usage as this could be attributed to them having more access to media and being able to afford the contraceptives.

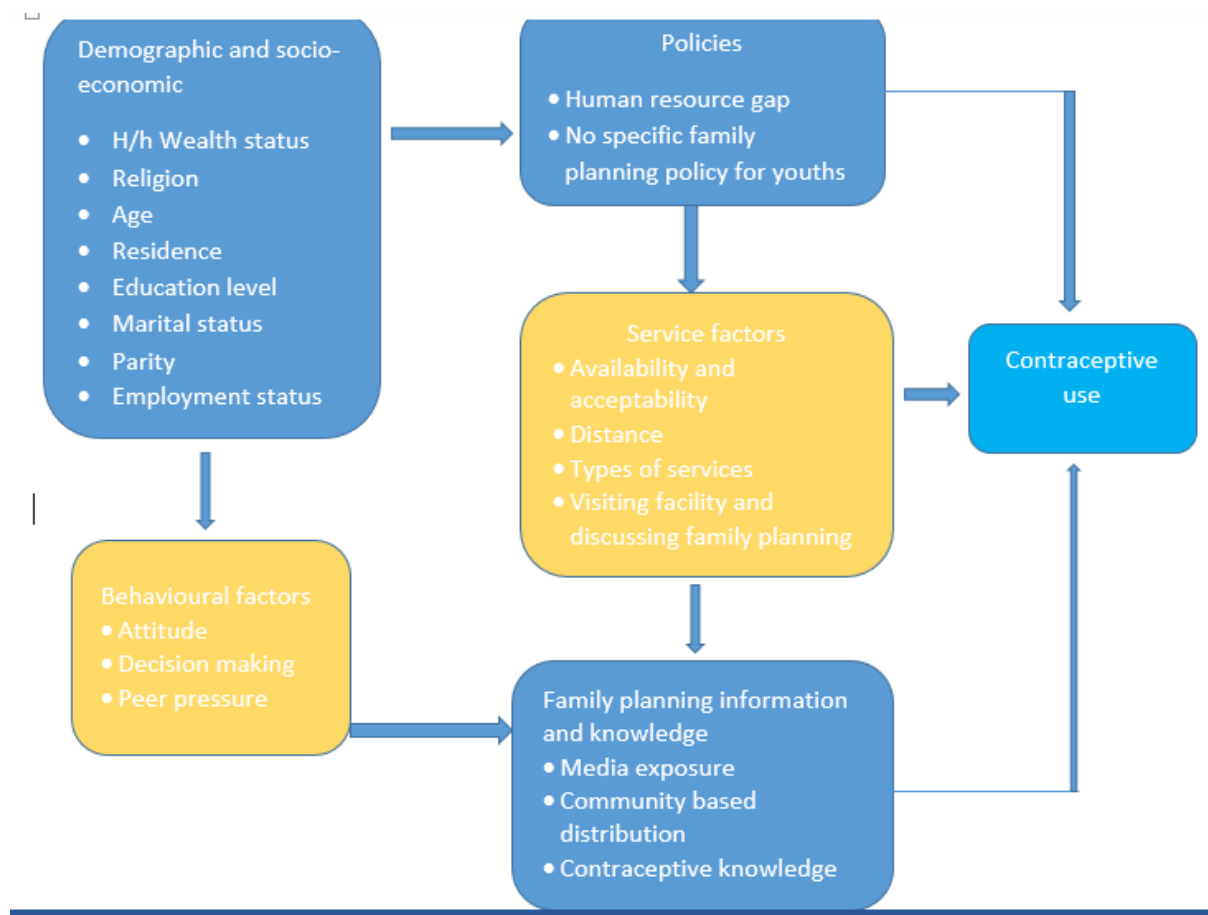


Figure 1: Contraceptive Framework showing the relationship of contraceptive use among youths

Urban or rural residence is determined by the level of education that one has obtained and by the wealth status, if one is associated with a rich household status they can opt to stay in an urban area where they can easily have access to contraceptives.

The decision making of contraceptive use is influenced by the already existing demographic and socio-economic characteristics. Knowledge alone is not enough, the contraceptives have to be available and accessible for them to be used. The availability of information through media exposure and community based distribution directly influence modern contraceptive use.

Some of the policies in place could lead to services not being made available to the youths and this in turn leads to low use of contraceptives. Policies should be put in place to ensure that the youths and even those in rural areas are able to have availability of the required services without stigma and to ensure that access is in accordance with the law.

#### **1.4 Justification**

The study will be able to provide information on how knowledge and availability of contraceptives to youths can be improved. This information when utilised by the existing and new programs such as the improvement of YFCs could help in reducing complications such as unsafe abortions that could result in maternal death and disability among women such as fistula. It can also reduce infant mortality and high teenage pregnancies that contribute to the burden of disease and disability among the young adults that is associated with the consequences of early pregnancies.

Understanding the factors influencing contraceptive use among the youths who are at risk of unwanted pregnancies and unsafe abortions is critical to the development of effective family planning programs in Zambia. Findings from this research may also be used to inform policy both at district and national levels.

#### **1.5 Research questions**

To what extent is contraceptive knowledge influencing contraceptive use among youths 15-24 years in Zambia?

What determines contraceptive use among youths 15 to 24 years in Zambia?

## **1.6 Objectives**

### **General objective**

To determine factors associated with contraceptive use among youths 15 to 24 years in Zambia.

### **Specific objectives**

1. To compare the utilisation of contraceptives between female and male youths aged 15 to 24 years in Zambia
2. To determine the demographic and socio-economic factors associated with contraceptive use among youths 15 to 24 years in Zambia.
3. To determine the availability of health information and knowledge associated with contraceptive use among youths 15 to 24 years in Zambia.

## **1.7 Definition of terms**

**Contraceptive use** defined as use of any method such as the pill, intrauterine device, injection, male or female condom, sterilisation, diaphragm, implants, lactational amenorrhea method, rhythm, withdrawal and standard days method that is used to avoid pregnancy or limit/delay number of children (Population reference bureau, 2013).

**Contraceptive prevalence rate** the percentage of married women age 15-49 years who are currently practicing or whose sexual partners are practicing any form of contraceptives regardless of method (WHO, 2016).

**Family planning** implies the ability of individuals and couples to anticipate and attain their desired number of children, spacing and timing of their births (MoH, 2008).

**Knowledge of contraceptive use** is the ability to recognise a family planning method when it is described (CSO, 2014).

**Youths** in this study are persons between ages 15 and 24 years (United Nations Education Social and Cultural Organisation (UNESCO), 2015).

## **CHAPTER TWO: LITERATURE REVIEW**

Several studies have been undertaken with the aim of establishing factors that are affecting contraceptive use among different groups including the adolescents, youths, women and men of all ages. These types of studies have been conducted worldwide, the African region and Zambia. A comprehensive literature search was conducted from different search engines such as Google scholar, PubMed and University of Zambia institutional repository among others. The literature was searched relating to family planning, contraceptive use, modern contraceptive use, unmet need and condom use among male and female youths. Themes such as demographic, socio-economic and availability of family planning services were found to have a relationship with contraceptive use.

### **2.1 Contraceptive use by females**

#### **Demographic factors**

Factors such as age of woman, marital status, age at first cohabitation, age difference between partners and parity influence contraceptive use. A study in Namibia found that there was higher condom use odds among young women of 15-19 years old than among 20-24 years old (odds ratio (OR)=0.763) (Irja, 2007). Contrary, a study in Ghana found that older adolescents (18 to 19) were 3.4 times more likely to use contraceptives than younger (15 to 17) adolescents (Nyarko, 2015). Women aged 20 to 24 years showed a larger increase in contraceptive use than women aged 15–19 years in Ethiopia (Worku, Tessema and Zeleke, 2015).

A study in Ghana found that female adolescents that were married or living together (cohabiting) were 4.75 times more likely to use contraceptives than their unmarried counterparts (Nyarko, 2015). However, a study in Namibia found that unmarried young women were more likely to use condoms than married women (Irja, 2007).

The age at first marriage can add vulnerability to the young woman, which can lead to poor fertility control and fertility related outcomes. Young age at marriage implies young age at sex exposing the youths to the risk of early pregnancy. A study in Uganda found that there was no significant relationship between age at marriage and contraceptive use (Assimwe et al., 2014).

The age difference between an individual youth and their partner could have an influence on the use of contraceptives. A study in Zimbabwe found the proportion of adolescent women with a large age difference with their husbands/partners who were current contraceptive users was higher with 42.4% as compared to 34.7% among adolescent women with a small or no age

difference. This implies those adolescent women with larger age difference are more likely to use contraceptives (Ngome and Odimegwu, 2014). Regarding parity, young women with at least one child are less likely to use condoms (OR=0.221) than those with zero parity (Irja, 2007). However, a study in Zimbabwe, adolescent women with one or more children ever born were 13.6 times more likely to use contraceptives than those with zero parity (Ngome and Odimegwu, 2014).

### **Socio-economic factors**

Studies have shown that there is a relationship between contraceptive use and education, employment status, residence, religion and household wealth status. For instance, a study by Nyarko (2015) found that increase in education was associated with high contraceptive use; adolescents with primary education were 7.39 times and those with secondary/higher education were 11.53 times more likely to use contraceptives compared to those with no formal education. In another study, educated adolescents with secondary or higher education were more likely to use contraception compared to their counterparts with no formal education (Assimwe et al., 2014).

Nyarko (2015) further found that female adolescents who were working were 2.99 times more likely to use contraceptives than female adolescents who were not working. Due to their working status they are able to afford contraceptives compared to their non-working counterparts, they are more likely to use any contraceptive than their non-working counterparts are.

The place of residence according to studies in sub-Saharan Africa can affect contraceptive use; young women in urban areas had more positive attitudes, as well as more forthcoming friends and parents than those in the rural areas towards using contraceptives in Namibia (Irja, 2007). However, a study in Zimbabwe found that residence did not have any influence on adolescent contraceptive use (Ngome and Odimegwu, 2014). Nyarko (2015) found that residence has no significant relationship with female adolescent contraceptive use ( $p=0.204$ ).

Worku, Tessema and Zeleke (2015) in Ethiopia found that the effect of religion had become more important over time. Followers of some religions, especially the Orthodox Christian religion and Protestant, compared to the Muslim religion showed a significant ( $p=0.01$ ) contribution to the observed percentage increase in modern contraceptive use. However, results from a study in Ghana found that religious affiliation of a woman had no significant

relationship with the woman's contraceptive use ( $p=0.0674$  for other Christians and  $p=0.064$  for Muslims) (Nyarko, 2015).

A study in Uganda showed that wealth status was not associated with contraceptive use. This could have been because of the fact that education level appeared to have influenced this relationship as more of the women with less than secondary level of education were in the poorest wealth quintile Assimwe et al. (2014). Similarly, a study in Ghana found that among adolescents there is no significant relationship between contraceptive use and the wealth status (Nyarko, 2015).

### **Availability of family planning information and services**

The government and NGOs that are involved in providing family planning services to the youths support these programs. These include access to family planning programs on radio, television and newspaper, community based distribution and the women visiting a health facility are counseled about family planning services including contraceptive use. Knowledge is also provided through the programs.

An increase in the level of media exposure increases the likelihood of current contraceptive use. Adolescent women with medium and high access to media were more likely to adopt modern contraceptives. Medium and high access to media increased the odds of using contraceptives (OR=1.8 and OR=2.1) respectively (Ngome and Odimegwu, 2014). Assimwe et al., 2014 also found that older women aged 25 to 34 years had higher odds (OR=1.97) of using contraceptives compared to younger ones with regards to listening to the radio. However, according to a study among Afghan women, media exposure was not associated with use of contraceptives (Rasooly, 2015).

Community based distribution increased use of modern contraceptives among women in rural areas (OR=1.83). Women in age group 15-24 were more likely to use any family planning method (White and Speizer, 2007). A study in Uganda found that being visited by a community based distributor had no significant association with contraceptive use (Assimwe et al, 2014). Female adolescents that had ever visited any health facility were 1.96 times more likely to use any contraceptive than their counterparts who did not visit any health facility as found in a study in Ghana (Nyarko, 2015).

Knowledge can play an important role in the acceptance and use of different modern contraceptive methods. Adolescents have high knowledge of contraceptives and knowledge of

at least one contraceptive method was highest among males when compared to females (92.1% versus 86.6%, respectively (Boamah et al., 2014). A study in Nigeria on contraceptive knowledge and use found that high knowledge of contraceptives did not translate to high usage of contraceptives (Odusina et al., 2012).

## **2.2 Contraceptive use by males**

The studies by Nyarko (2015), Irja (2007), Assimwe et al. (2014) and others that have been reviewed focused on women and their association to contraceptive use. It is important to have more knowledge on men's views whether positive or negative as they potentially play a role in determining women's decisions to use contraceptives. A qualitative study that was carried out in seven countries in Eastern Europe and Central Asia among men and women found that the associations were similar for both men and women as in some of the studies reviewed above. Similar themes still emerged in relation to literature reviewed concerning men. The men who were poor, living in rural areas, followed Muslim religion, had no education and primary education and were unemployed had less knowledge and were less likely to use modern contraceptive methods. The younger men had more knowledge and were more likely to use contraceptives. The higher the media exposure, the higher the use of contraceptives. Young women had more knowledge of contraceptives than the young men. Information is not knowledge, often youths do not know how to use a method correctly or where they are available (Boussen, 2012).

Another study by Kabagenyi et al, (2014) using the 2011 Uganda Demographic and Health Survey found that discussion of family planning with health worker increased odds of using contraceptives (OR=1.85). Education; men who had secondary or higher education had increased odds (OR =2.13) of contraceptive use compared with those with no education. Wealth status; men who belonged to the richer and richest wealth quintile had a higher likelihood of using modern contraceptives (OR =2.52) and (OR =2.47) respectively compared with those in the poorest quintiles. Parity; men who had few children (1–4) had increased odds of using modern contraception or reporting partners' use of contraception (OR = 2.039) compared with those with no children. Region and fertility preference for more children were also significantly associated with contraceptive use among men.

Ochako et al, 2017, using the Kenya demographic health survey found that in Kenya there are some factors that determine use of modern contraceptives among men which include; marital status; currently married and formerly married men were more likely to report using a partner

method but less likely to use a male method than using traditional/no method. Religion; Muslim men and men with no religion were less likely to report use of partner method opposed to using traditional/no method than those of the Catholic faith. Household wealth status; men with upper household wealth quantile were more likely to report male and partner methods than traditional/no method compared to those from poor households. Media exposure; radio listenership of at least once a week increased the likelihood to use partner or male method (1.8 times), similarly, watching television at least once a week increased the likelihood to use partner or male method (1.7 times) compared to use of traditional/no method than those who never watched television at all. Interaction with health care provider; men who had a discussion with a health worker were (1.7 times,  $p < 0.001$ ) more likely to report usage of a partner method as opposed to traditional/no method. The study also found that a vast majority of men rely on partner contraceptive methods as opposed to male methods.

In summary the review of the literature has revealed that some of the variables have a positive association or no association or inverse association with contraceptive use. Some of these variables include age, parity, marital status, residence, religion, household wealth status, media exposure and community based distributions. Most of the studies reviewed did not focus on men and unmarried youths. Some of the variables which include marital status, parity and household wealth were not included in some of the above studies to establish the association between contraceptive use and male youths. Therefore, it was necessary to find out which of the variables have an association with contraceptive use among the male and female youths aged 15 to 24 years in Zambia.



## **CHAPTER THREE: METHODOLOGY**

### **3.1 Study designs**

#### **3.1.1 ZDHS study design**

The Zambia demographic health survey (ZDHS) was a cross-sectional study. The survey used a two-stage stratified cluster sample design. Enumeration Areas (EAs)/ (clusters) selected during the first stage in each of the 10 provinces and sub-stratification was achieved by classifying each province into urban and rural strata. An EA is a convenient geographical area with an average size of 130 households or 600 people. The 10 provinces constituted the main strata and 20 sub-strata were formed. The EAs were selected with probability proportional to size and were the primary sampling units in each province. At the second stage, a complete list of households served as the sampling frames in the selection of households in the selected EAs. An average of 25 households was selected in each EA and a representative sample of 18,052 households was eventually selected. A total of 14,773 men and 16,411 women were interviewed (CSO, 2014).

Three questionnaires were used in the 2013/14 ZDHS: the Household Questionnaire which recorded information on all the usual members and visitors of selected households. The Man's Questionnaire was administered to all men aged 15-59 and it collected much of the same information as the Woman's Questionnaire but it did not contain a detailed reproductive history or questions on maternal and child health or nutrition. The Woman's Questionnaire was used to collect information from all women age 15-49 years.

The 2013/14 ZDHS was the third survey to measure human immunodeficiency virus (HIV) prevalence in Zambia and the first to measure HIV incidence. It also collected information on fertility levels, fertility preferences, awareness and use of family planning methods, child feeding practices, nutritional status of women and children, awareness and attitudes regarding HIV and acquired immunodeficiency syndrome (AIDS), sexual behaviour and condom use, maternal and child health, adult and childhood mortality, and domestic violence (CSO, 2014).

#### **3.1.2 Contraceptive use design**

This study used secondary data and was nested in the 2013/14 ZDHS study design. The study design was a two-stage stratified cluster sample design, with Enumeration Areas (EAs) selected at first stage and households included in the sample at the second stage. This study was designed to determine factors associated with contraceptive use among youths aged 15-24

years in Zambia. The researcher extracted data on young men and women on contraceptive use in the years preceding the survey. The data was extracted from the women and men's questionnaires.

### 3.2 Study setting

The study used information from the ZDHS, which was a nationally representative probability sample survey of women and men of reproductive age. The ZDHS was conducted in all the 10 provinces of the country (Central statistics office (CSO), 2014). The Zambian population in 2014 was estimated at 14,638,505 of which 20% of the population were youths aged 15-24 years (CIA world fact book, 2015).



Figure 2: Map of Zambia (Source: created in QGIS)

The map of Zambia above shows the coverage of the Zambia Demographic and Health Survey 2013/2014. It implies that the survey was conducted throughout the country and was representative of the Zambian population.

### 3.3 Study population

The ZDHS collected data on 16,411 women aged 15-49 and 14,773 men aged 15-59. Only male and female youths aged 15 to 24 years in Zambia that were sampled and interviewed were included in the study sample.

### 3.3.1 Inclusion and exclusion criteria

This study included young men and women aged 15 to 24 years who had sexual activity prior to the survey. It had excluded men and women above 25 years.

### 3.4 Sample size

The sample of the target population was more than the calculated sample of 384 based on the prevalence of modern contraceptive use from literature in Namibia (Irja, 2007).

#### 3.4.1 Data extraction

A data extraction tool (*appendix 3*) was used to extract the variables of interest from the women and men ZDHS questionnaires. A data extraction tool is a tool that is used in the process of retrieving data of interest from a source for further processing. Therefore the sample target population was 6,726 women and 5,650 men aged 15-24 years from which the inclusion and exclusion criteria was used to select the required sample size.

### 3.5 Study variables

Some of the variables to suit the purpose of the study were categorized or re-coded and others were analyzed as they were.

Table 1: Variables and their operational measurements

<b>Variable description</b>	<b>Operational definitions</b>	<b>Indicator</b>	<b>Scale of measurement</b>
<b>Dependent variable:</b> Contraceptive use	Method of contraceptive being used.	Proportion of youths using contraceptives	Percent
<b>Independent variables:</b> Age	Age at last birthday	Number in years	numerical
Age at first marriage or cohabitation	Age when youth first got married or started living with partner as if married	Number in years at first marriage or cohabitation	numerical
Age difference between partners or spouses	The absolute difference between age of the youth and their partner	Age categorized into large(>5 years) or small difference(<5 years)	numerical

Marital status	The state of being single, married or divorced in a person's life time	Single, married, divorced and widowed	Nominal
Parity	Children ever born by a woman in her reproductive age up to time of survey	Number of live children ever born	numerical
Education	School attendance in complete years	No education, primary, secondary and higher	Ordinal
Residence	Area in which people reside	Urban and Rural	Nominal
Religion	Belief in and worship of superhuman controlling power	Catholic, Protestant and Other	Nominal
Employment status	Work performed by individual for which they received pay	Not employed and employed	Nominal
Household wealth status	Social status of the household	Poor, Medium and Rich	Ordinal
Availability of youth services (media exposure)	Easiness to find information about services	Source of information	Nominal
Availability of family planning information	Opportunity to reach, find or use a service	Interaction with provider at health facility, Community based distribution and youth friendly services	Nominal
Knowledge of contraceptives	Information and skill that one has acquired	Knowledge of modern or traditional methods of contraceptives	Nominal

### 3.6 Data analysis

The primary outcome was the prevalence of contraceptive use calculated as the proportion of youths aged 15-24 years using any contraceptive method.

The type of analysis involved univariate analysis, bivariate analysis and multiple logistic regression. Univariate analysis was used to describe the characteristics of the study participants and variable outputs. Bivariate analysis was used to test for association between independent variables and the dependent variable. The multiple logistic regression model with backward selection was used to identify the factors independently associated with the odds of modern contraceptives. The variables were removed at p-value greater than 0.05 using the likelihood ratio test. All analysis were adjusted taking into account survey characteristics (Stratification,

clustering and sampling weight). Data was analysed using STATA version 13.0 software (Startcop, college station, Texas, USA).

### **3.7 Data management**

The data was only handled by the researcher. It was stored on a password protected computer. The copies of the data were backed up on a flash drive in case the computer developed a problem. The data was stored until publication of the results after which it was deleted.

### **3.8 Ethical consideration**

Permission to use secondary data was sought from Central statistics office and ethical approval from UNZABREC (REF. NO. 014-06-16). The DHS protocol was observed by DHS program. This was a minimal risk study. Confidentiality of the data and anonymity was maintained as the data was de-identified. There was no way of identifying the participants as codes were used. The study reduced the burden of repeat data collection on participants. There was lack of informed consent from the individuals. It was not easy to fully inform participants of potential future use of data, as this full disclosure is one of the requirements of informed consent.

### **3.9 Dissemination plan**

The results will be disseminated to the relevant stakeholders, which include UNZA library, Postgraduate student conference, Ministry of Health, Central Statistics Office and in a scientific journal.

## CHAPTER FOUR: FINDINGS

The purpose of the study was to determine the factors associated with contraceptive use among youths aged 15-24 years in Zambia. In the first section frequencies and percentages were presented to describe every variable. Bivariate analysis and multivariate analysis was applied, specifically the use of Logistic regression to determine the relationships between the dependant variable (contraceptive use) and the independent variables. Logistic regression was used as the outcome (dependent) variable is dichotomous. Finally, a detailed discussion of the findings was done linking the literature to the findings of the study and recommendations were drawn.

The findings of the study were presented first by highlighting the demographic, socio-economic and availability of family planning information characteristics of the study population. Then the utilization of contraceptives among female and male youths was shown using a figure, the most frequent type used and the type used according to age, residence, parity and education was also shown. Thereafter, the relationship between media exposure and contraceptive use and the relationship between availability of family planning information and contraceptive use were presented. Additionally, the relationship between knowledge and contraceptive use was presented, followed by a presentation of the influence of demographic and socio-economic characteristics on contraceptive use. Finally, backwards multiple logistic regression analysis was performed and the factors associated with contraceptive use presented.

### 4.1 Description of the sample

Table 2: Description of the proposed sample and actual samples

	Females	Males
Proposed sample	6726	5650
Actual sample	4498	3599

In table 2 above, out of the sample target population of 6,726 females and 5,650 males aged 15-24 years, the sample in this study only included 4,498 females and 3,599 males after taking into account the inclusion criteria. This was arrived at after only including, in the sample, youths aged 15-24 years that had been sexually active as they are the ones that should have used contraceptives. Response rate was 100% for both the females and males. The tables present findings from weighted data.

## 4.2 Demographic and socio-economic characteristics of study population

Table 3: Demographic and Socio-economic characteristics of the study population

Characteristics	Females n (percentage) N=4498	Males n (percentage) N=3599
<i>Age (years)</i>		
15-19	1781 (40)	1592 (44)
20-24	2717 (60)	2007 (56)
<i>Age of first cohabitation</i>		
<15 years	545 (21)	16 (3)
16-24 years	2043 (79)	600 (97)
<i>Age difference</i>		
<5	897(40)	454(81)
>5	1365(60)	106(19)
<i>Parity</i>		
0	1427 (32)	2940 (82)
1-2	2622 (58)	599 (17)
3-4	434 (10)	56 (2)
5+	14 (0)**	4 (0)**
<i>Residence</i>		
Urban	1970 (44)	1615 (45)
Rural	2527 (56)	1985 (55)
<i>Education</i>		
No education	179 (4)	70 (2)
Primary	1821 (41)	1224 (34)
Secondary	2396 (53)	2159 (60)
Higher	98 (2)	144 (4)
<i>Household wealth status</i>		
Poor	1700 (38)	1140 (32)
Medium	904 (20)	787 (22)
Rich	1894 (42)	1673 (46)
<i>Religion</i>		
Catholic	798 (18)	712 (20)
Protestant	3659 (82)	2830 (79)
Others	32 (1)	38 (1)
<i>Marital status</i>		
Never been in union	1910 (42)	2983 (83)
Married	2297 (51)	560 (15)
Widowed	21 (0)**	0
Divorced	270 (6)	56 (2)
<i>Employment status</i>		
No	2850 (64)	1489 (41)
Yes	1616 (36)	2105 (59)

\*questions don't apply to men

\*\*those with 0 as a percentage have percentages that are less than 1% when rounded off

### *Age and sex distribution*

In reference to table 3, at least 60 percent of the females were aged 20-24 years and 56 percent of the males were aged 20-24 years. At the time of the survey they were 4,498 females representing 66.9 percent of the total females aged 15-24 years and 3,599 males representing 63.7 percent of total males aged 15-24 years that were sexually active as shown by the characteristics in table 3.

### *Parity*

Most of the females (58%) had parity of 1-2 children and 82 percent of the males had parity of zero (0) and this could be because majority (83%) of males had never been in a union though sexually active.

### *Age at first cohabitation and age difference between partners*

The first age of cohabitation for 79 percent of the females was between 16 and 24 years and for 97% of the males it was also between 16 and 24 years. The mean age at cohabitation for females was 17.23 years (Standard deviation=2.21) and 19.70 years for males (Standard deviation=2.02). About 60 percent of the females had partners who were older than them by more than five years and 81 percent of the males had an age difference of less than five years between them and their partners (were older than their partners by less than five years).

### *Residence*

About 56 percent of the females and 55 percent of the males were residing in rural areas.

### *Education*

At least 53 percent of the females and 60 percent of the males had attained secondary education.

### *Household wealth status*

About 42 percent of the females and 46 percent of the males had a rich household wealth status.

### *Religion*

Majority of the youths were protestant (81 percent females and 79 percent males).

### *Marital status*

Most of females were married (51 percent) and the majority of males had never been in a union (83 percent) though sexually active.

### *Employment status*

About 64 percent of the females had no employment and 59 percent of the males were in employment.



### 4.3 Knowledge and availability of family planning information of study population

Table 4 shows the background characteristics in relation to knowledge and availability of family planning that the population has.

Table 4: Knowledge and Availability of family planning information and services

Characteristics	Females n (percentage) N=4498	Males n (percentage) N=3599
<i>Knowledge of contraceptives</i>		
No method	35 (1)	6 (1)
Traditional	5 (0)**	0
Modern	4458 (99)	3593 (99)
<i>Media exposure</i>		
No	3007 (67)	2137 (59)
Yes	1491 (33)	1462 (41)
<i>Visited by FP worker</i>		
No	4011 (89)	*
Yes	477 (11)	
<i>At health facility talked of FP with health worker</i>		
No	1361 (53)	3333 (93)
Yes	1211 (47)	236 (7)

\*questions don't apply to men      \*\*those with 0 as a percentage have percentages that are less than 1% when rounded off

#### *Knowledge of contraceptives*

Knowledge of contraceptives is universal as 99 percent of both the females and males had knowledge of all contraceptives as shown in Table 4.

#### *Availability of family planning information and youth services*

Family planning information through media exposure was at 33 percent for females and 41 percent for males. Majority of the females (89%) had not been visited by a family planning worker. Only about 47 percent of the females when they visited a health facility were told about family planning while about 93 percent of the males were not told about family planning at health facility.

### 4.4 Utilisation of contraceptives by youths

Figure 3 is in line with objective one which compared utilisation of contraceptives among the females and males aged 15 to 24 years.

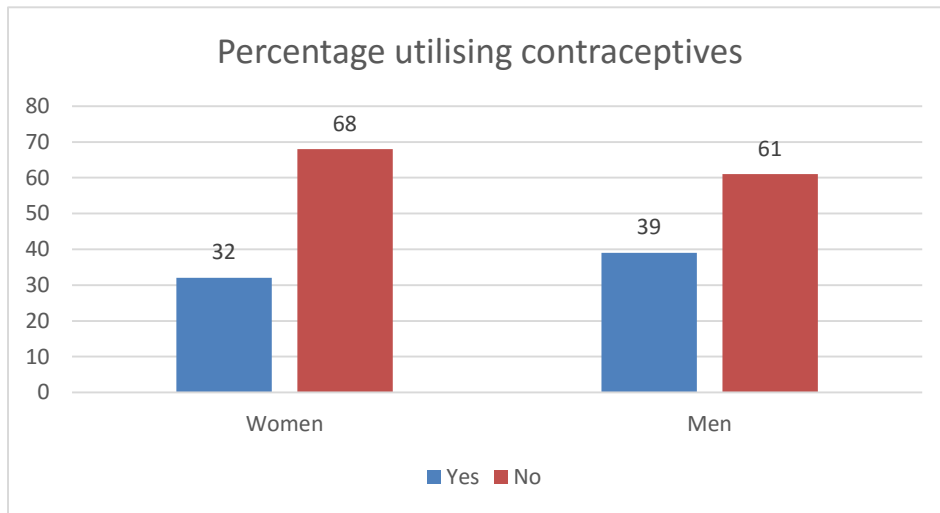


Figure 3: Utilisation of contraceptives by male and female youths aged 15 – 24 years

Figure 3 shows that most of the youths in Zambia 68 percent females aged 15-24 years did not use contraceptives and only 32 percent of them or their partner used contraceptives. For the males 61 percent aged 15-24 years did not use contraceptives and only 39 percent of the males used contraceptives. A slightly higher percentage of the males used contraceptives compared to the females in Zambia though the women have a wider range of contraceptives available compared to men (Table 10 in appendix B).

Figure 4 shows the percentage distribution of the contraceptives for males and females by type.

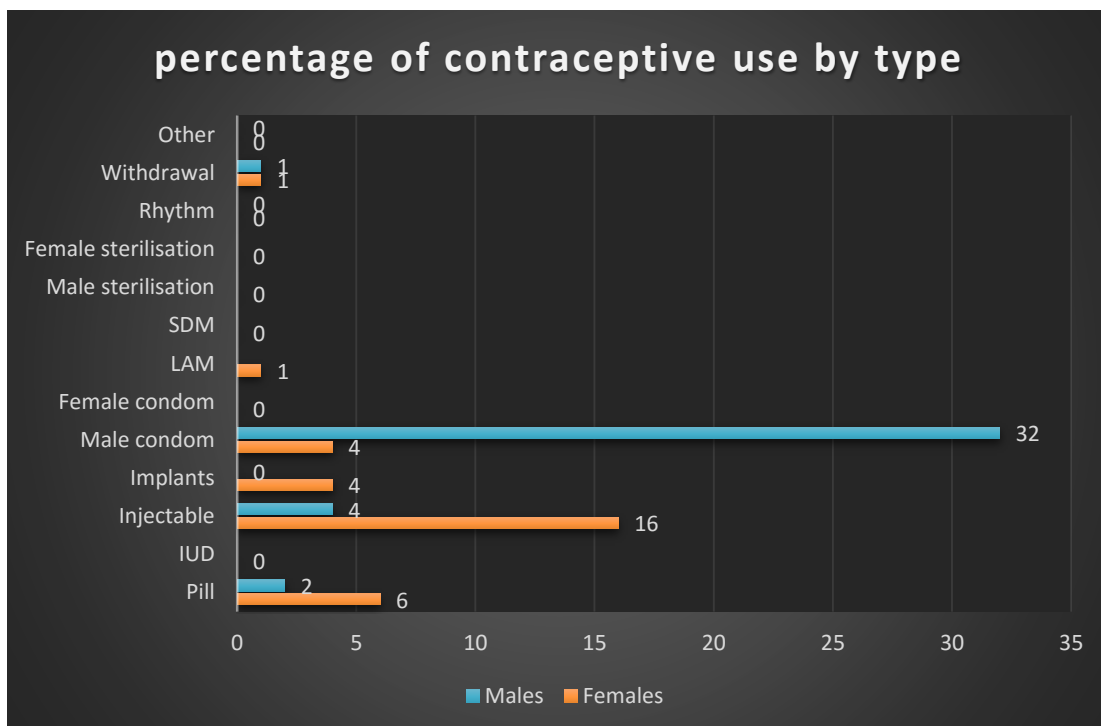


Figure 4: Contraceptive use by type of method

*Note: the figure represents methods by type for both the respondent and their partner.*

Figure 4 shows the most frequent types of contraceptives used by the females and male youths themselves or their partner. The figure above represents what the respondent or/and their partner used. The most frequently used type of method reported among the males themselves or their partner was the male condom at 32 percent and among the females it was the injectable at 16 percent. The use is out of 39 percent for the males and 32 percent for the females that were using contraceptives. It was easier for females to access injectables and conceal them from their partners without anyone knowing. For the males it was easier for them and their partners to access the male condoms as the male condoms are easily available even in the streets and pharmacies compared to the other methods that can only be accessed from the health facility. As for the other methods, the youths might not be very familiar with them. The study shows that use was affected by the type of method that one decided to use, those who used modern methods like the injectable and male condom were more likely to use contraceptives as this was statistically significant  $p < 0.001$  (Table 11 in appendix B).

Table 5: Type of contraceptive by age, residence, parity and education

Type of contraceptives														
characteristics	Pill	IUD	injec table	Impla nts	Male condom	Female condom	LA M	SDM	Steriliz ation	Rhyth m	Withd rawal	Other	No use	Total number
<b>Age Females 15-19</b>	62(3)	1(0)	186(10)	38(2)	68(4)	1(0)	14(1)	0	0	0	12(1)	1(0)	1398	1781
<b>20-24</b>	196(7)	9(0)	540(20)	121(4)	100(4)	2(0)	19(1)	0	1(0)	4(0)	41(1)	7(0)	1677	2717
<b>Age males 15-19</b>	16(1)	*	13(1)	2(0)	463(29)	1(0)	*	*	*	1(0)	2(0)	0	1093	1592
<b>20-24</b>	63(3)	*	126(6)	13(1)	677(34)	5(0)	*	*	*	8(0)	19(1)	1(0)	1096	2007
<b>Residence: urban (Females)</b>	135(7)	7(0)	318(16)	105(5)	82(3)	2(0)	12(1)	0	1(0)	0	10(0)	3(0)	1287	1970
<b>Rural</b>	123(5)	4(0)	408(16)	54(2)	86(4)	1(0)	21(1)	0	0	4(0)	43(2)	5(0)	1778	2527
<b>Residence: urban (Males)</b>	40(2)	*	51(3)	13(1)	565(35)	5(0)	*	*	*	7(0)	6(0)	1(0)	927	1615
<b>Rural</b>	39(2)	*	88(4)	2(0)	574(29)	1(0)	*	*	*	3(0)	15(1)	0	1261	1985
<b>Parity females: 0</b>	9(1)	0	15(1)	3(0)	70(5)	3(0)	0	0	0	0	2(0)	1(0)	1323	1427
<b>1-2</b>	213(8)	8(0)	596(23)	124(5)	90(3)	0	27(1)	0	1(0)	4(0)	40(2)	7(0)	1511	2622
<b>3-4</b>	36(8)	2(1)	111(26)	31(7)	7(2)	0	5(1)	0	0	0	9(2)	0	234	434
<b>5+</b>	0	0	4(31)	0	0	0	1(7)	0	0	0	1(9)	0	7	14
<b>Parity males: 0</b>	35(1)	*	23(1)	2(0)	986(34)	3(0)	*	*	*	9(0)	10(0)	0	1872	2940
<b>1-2</b>	42(7)	*	94(16)	13(2)	142(24)	3(1)	*	*	*	0	6(1)	1(0)	296	599
<b>3-4</b>	2(3)	*	21(38)	0	11(20)	0	*	*	*	0	5(9)	0	17	56
<b>5+</b>	0	0	0	0	0	0	*	*	*	0	0	0	4	4
<b>Education: no edu. (females)</b>	11(6)	0	21(12)	3(2)	4(2)	0	1(1)	0	0	0	3(2)	0	136	179
<b>Primary</b>	100(6)	2(0)	315(17)	48(3)	66(4)	1(0)	11(1)	0	0	1(0)	40(2)	3(0)	1234	1821
<b>Secondary</b>	145(6)	8(0)	386(16)	107(4)	83(3)	1(0)	21(1)	0	1(0)	3(0)	9(0)	4(0)	1628	2396
<b>Higher</b>	2(2)	0	4(4)	0	15(15)	1(2)	0	0	0	0	0	1(0)	73	98
<b>Education: no edu. (males)</b>	0	*	4(6)	0	15(22)	0	*	*	*	0	2(2)	0	48	70
<b>Primary</b>	28(2)	*	33(3)	1(0)	338(28)	0	*	*	*	1(0)	3(0)	0	820	1224
<b>Secondary</b>	42(2)	*	101(5)	13(1)	731(34)	6(0)	*	*	*	8(0)	13(1)	1(0)	1242	2159
<b>Higher</b>	8(6)	*	1(1)	0	56(39)	0	*	*	*	0	3(2)	0	76	144

(in brackets percentages of the types of contraceptives)

\* shows type of contraceptive was not used by that particular group

Note: This "type of contraceptive" table is referring to the respondent and their partner

The respondents were asked whether they or their partners had used any types of contraceptive method. This shows the relationship between the types of contraceptives and some background characteristics such as age, residence, parity and education. This enabled us identify some subgroups of the population and know which types they frequently use.

Findings show that injectables are the frequently used method among the females of both age groups as 20 percent aged 20-24 years use them. Implants are not frequently used in rural areas and withdrawal method is frequently used in rural than urban areas. Furthermore, female condoms are not as widely used as the male condoms regardless of the level of education or parity.

Males and their partners in urban areas are slightly frequently using male condoms at 35 percent than in rural areas (29%) this could be because the male condoms are more accessible in urban than in rural areas. The traditional methods are used less compared to the modern ones.

#### 4.5 Availability of family planning information and contraceptive use among youths

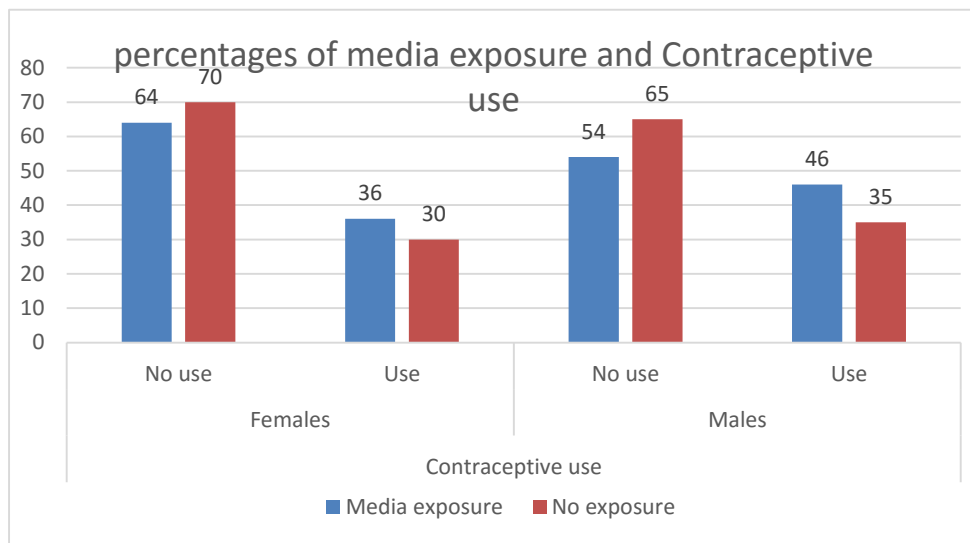


Figure 5: Relationship between media exposure and contraceptive use

Figure 5 shows the availability of family planning information through exposure to media involving family planning in relation to contraceptive use. There were 3,007 (67%) of the females that did not have exposure to media and there were 2,137 (59%) of the males that did not have exposure to media. Out of the 3,007 females that did not have exposure to media, 30 percent used contraceptives. Out of 1,491 females that had exposure to media only 36 percent of them used contraceptives. For the 2,137 males that did not have exposure to media only 35 percent used contraceptives. Out of the 1,462 males that had exposure to media only 46 percent of them used contraceptives. Exposure to media (newspapers, radio or television on family

planning issues) influences use of contraceptives. The relationship between contraceptive use and media exposure was statistically significant  $p < 0.001$  for both females and males. The study shows that contraceptive use was affected by media exposure (Table 12 in appendix B).

The figure below shows the percentages of contraceptive use and interaction with a health provider at health facility.

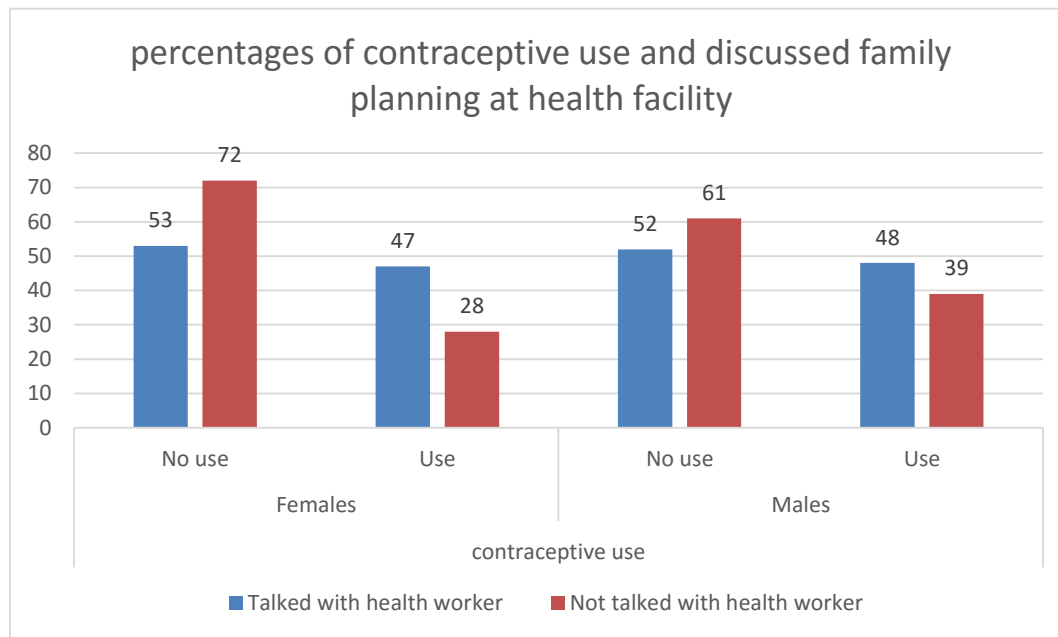


Figure 6: Relationship between discussion of family planning with a health worker at health facility and contraceptive use

Figure 6 shows how discussing family planning with a health worker when visiting a health facility influences contraceptive use (interaction with a health worker at a health facility). There were about 1,361 (53%) of the females that did not discuss family planning at health facility and there were 3,333 (93%) of the males that did not discuss family planning at health facility. Out of the 1,361 females that did not discuss family planning at health facility 72 percent were not using contraceptives. Of those that did discuss family planning at health facility 47 percent were using the contraceptives. With regard to the males, out of the 3,333 that did not discuss family planning at facility only 39 percent of them were using the contraceptives. Out of the 236 that did discuss family planning at the facility about 48 percent used the contraceptives. The relationship was statistically significant  $p\text{-value} < 0.05$ . See table 13 in appendix B.

#### 4.6 Knowledge of contraceptives and utilization

Table 6: Relationship between knowledge and use of contraceptives

	Contraceptive use					
	Females			Males		
Knowledge	No use	Use	Total	No use	Use	Total
No method	35 (100)	0	35 (100)	6 (100)	0	6 (100)
Traditional	3 (57)	2(43)	5 (100)	0	0	0 (100)
Modern	3037 (68)	1421 (32)	4458 (100)	2182 (61)	1411 (39)	3593 (100)
Total	3075 (68)	1423 (32)	4498 (100)	2188 (61)	1411 (39)	3599 (100)

Females p-value=0.0004 and  $\chi^2=17.15$  Males p-value=0.0379 and  $\chi^2=4.23$

*\*In the brackets showing percentages of knowledge and contraceptive use*

The male and female youths have knowledge about contraceptives as both groups have 99 percent levels of knowledge shown in Table 4. Majority of the youths aged 15-24 years had knowledge of modern contraceptives and only a few females had knowledge of the traditional methods as well. Out of the 3,593 (99%) of males that had contraceptive knowledge, only 39 percent of them had knowledge about modern contraceptives and used them while 61 percent of them had knowledge about modern contraceptives but did not use them. About 68 percent of the females that knew a modern method did not use any contraceptives and only 32 percent of those that knew a modern method used contraceptives. The relationship is statistically significant at p-value=0.0004 for females and p-value=0.0379 for males implying knowledge affects use. However, knowledge does not result into use, as knowledge is high but use is low.

#### 4.7 The influence of demographic, socio-economic, knowledge and availability of family planning information on contraceptive use

This section uses simple logistic regression in order to examine the influence of each of the predictors on contraceptive use. In this model, contraceptive use was regressed with each independent variable at a time in order to examine the influence of the specific independent variable on the outcome.

Table 7: Relationship between contraceptive use and demographic, socio-economic characteristics

	Females			Males		
	OR	95% CI	p-value	OR	95% CI	p-value
<i>Age:</i>			<0.001			<0.001
15-19	1			1		
20-24	2.26	(1.89-2.70)	<0.001	1.82	(1.56-2.13)	<0.001
<i>Residence:</i>			0.012			0.003
Urban	1			1		
Rural	0.81	(0.69-0.96)	0.013	0.77	(0.65-0.92)	0.003
<i>Education:</i>			0.127			0.001
No education	1			1		
Primary	1.53	(1.01-2.32)	0.043	1.10	(0.53-2.31)	0.792
Secondary	1.52	(0.99-2.30)	0.050	1.66	(0.81-3.40)	0.169
Higher	1.07	(0.56-2.03)	0.842	2.03	(0.89-4.61)	0.090
<i>H/h wealth status:</i>			0.537			0.001
Poor	1			1		
Medium	1.13	(0.91-1.41)	0.276	1.09	(0.86-1.37)	0.480
Rich	1.07	(0.89-1.29)	0.476	1.39	(1.15-1.68)	0.001
<i>Religion:</i>			0.160			0.712
Catholic	1			1		
Protestant	1.03	(0.84-1.26)	0.785	0.93	(0.76-1.14)	0.474
Other	0.26	(0.63-1.08)	0.064	0.83	(0.32-2.12)	0.694
<i>Marital status:</i>			0.001			0.037
Never been in union	1			1		
Married	3.94	(3.31-4.70)	0.001	1.27	(1.03-1.56)	0.022
Widowed	0.99	(0.29-3.32)	0.984		*	
Divorced	2.10	(1.44-3.06)	0.001	1.48	(0.79-2.78)	0.216
<i>Media exposure:</i>			0.0006			0.001
No	1			1		
Yes	1.32	(1.13-1.54)	0.001	1.57	(1.33-1.86)	0.001
<i>Age at first cohabitation</i>			0.585			0.516
<15	1			1		
16-24	1.07	(0.84-1.35)	0.586	0.66	(0.19-2.32)	0.516
<i>Age difference</i>			0.623			0.687
<5 years	1			1		
>5 years	0.50	(0.14-1.72)	0.270	0.98	(0.31-3.14)	0.974
<i>Parity</i>			0.001			0.001
0	1			1		
1-2	9.37	(7.03-12.49)	0.001	1.79	(1.46-2.19)	0.001
3-4	10.95	(7.65-15.67)	0.001	4.04	(2.00-8.15)	0.001
5+	12.79	(4.12-39.67)	0.001	0.18	(0.02-1.61)	0.125
<i>Employment status:</i>			0.036			0.024
No	1			1		
Yes	1.18	(1.01-1.37)	0.037	1.20	(1.02-1.41)	0.025

\*questions don't apply to men. 1 refers to the reference category OR=odds ratio. There are general p-values for each variable as a whole and specific on each element under each variable.



Table 7 shows that 1 was the odds of the reference group or category. Therefore, for instance the odds of using contraceptives was odds ratio times greater ( $OR > 1$ ) or times less ( $OR < 1$ ) for the females and males not in the reference group compared to those in the reference group.

All youths aged 20-24 years were 2.26 times for females and 1.82 times for males more likely to use contraceptives compared to those aged 15-19. These were significant ( $p\text{-value} < 0.001$ ) implying that age had an influence on contraceptive use. The youths in rural residence were less likely to use contraceptives compared to those in the urban areas ( $OR = 0.81$ ) for females and ( $OR = 0.77$ ) for males and both were significant also implying that residence influences contraceptive use.

Youths in all the levels of education were more likely to use contraceptives compared to those with no education except those in secondary and higher education for females that was not statistically significant. The females with primary education ( $OR = 1.53$ ) were more likely to use contraceptives compared to those with no education. The education characteristic for females was not statistically significant ( $p\text{-value} = 0.127$ ). The education characteristic for males was significant ( $p\text{-value} = 0.001$ ) implying that it can have an influence on contraceptive use.

Household wealth status of the female youths that were associated with middle and rich status were 1.13 and 1.07 times more likely to use contraceptives than the poor and this was not statistically significant ( $p\text{-value} = 0.537$ ). The males were 1.09 and 1.39 times more likely to use contraceptives for middle and rich household status respectively and this was significant ( $p\text{-value} = 0.001$ ) showing that it could have an influence on the utilization of contraceptives.

Only protestant female youths ( $OR = 1.03$ ) were more likely to use contraceptives than the Catholics. The characteristic religion was not statistically significant for males ( $p\text{-value} = 0.712$ ) and therefore might not have an influence on contraceptive use. All the married females were ( $OR = 3.94$ ) more likely to use contraceptives. The divorced females were 2 times more likely to use contraceptives than those never been in a union. Marital status for females was statistically significant ( $p\text{-value} = 0.001$ ). The married males were 1.27 times more likely to use contraceptives than those who had never been in a union and marital status for males was also statistically significant ( $p\text{-value} = 0.037$ ).

Youths who had media exposure (family planning information from newspapers, radio or television) were more likely to use contraceptives than those without any exposure ( $OR = 1.32$ ) and this characteristic was statistically significant for youths ( $p\text{-value} < 0.001$ ). Youths with an age difference of greater than five years between them and their male partners shows that they

are less likely to use contraceptives than those with age difference of less than five years though age difference is not statistically significant (p-value=0.270 for females and p-value=0.974 for males) in influencing contraceptive use.

Contraceptive use increased with an increase in parity. Parity is statistically significant implying it influences contraceptive use (p-value=0.001 for both males and females). All youths with parity one and more were more likely to use contraceptives than those with zero parity except the males with five or more children. The females with one to two children were 9 times and the males were almost 2 times (OR=1.79) more likely to use contraceptives and females with parity 5 and above were about 13 times more likely to use contraceptives. The employed youths were more likely to use contraceptives than the unemployed ones. This characteristic was statistically significant at 95% CI (p-value=0.036 females and p-value=0.024 for males).

Table 8: Relationship between contraceptive use and knowledge, availability of family planning information

	Females			Males		
	OR	95% CI	p-value	OR	95% C	p-value
<i>Knowledge of contraceptives</i>			<i>0.616</i>			
No method	1			1		
Traditional	1.5	(0.26-9.69)	0.617	1		
Modern	1			1		
<i>Visited by FP worker</i>			<i>0.009</i>			
No	1			*		
Yes	1.40	(1.09-1.80)	0.009			
<i>At health facility talked of FP with health worker</i>			<i>0.001</i>			<i>0.014</i>
No	1			1		
Yes	2.25	(1.86-2.72)	0.001	1.43	(1.07-1.90)	0.014

\*questions don't apply to men. 1 refers to the reference category OR=odds ratio

All those females that were visited by a family planning worker were 1.40 times more likely to use contraceptives than those that were not visited by a family planning worker and this is significant at 95% CI (p-value=0.009). Those that interacted with a health provider at health facility (told about family planning) were more likely to use contraceptives than those that did not go and were not told. This is statistically significant at 95% CI (p-value=0.001 for females and p-value=0.014 for males). Female youths that were told about family planning at the health facility were 2.25 times more likely to use contraceptives than those that were not told at the health facility.

#### 4.8 Multivariate logistic regression analysis

This section examined the influence of all the independent variables on Contraceptive use by using the stepwise (backward) method to determine the final model. The analysis further made use of the odds ratios, though in this case with an attempt to identify any possible underlying factors that explain the contribution of the other independent variables to contraceptive use.

Table 9: Determinants of contraceptive use among youths aged 15-24 years in Zambia

	Females			Males		
	OR	95% C.I	P-value	OR	95% CI	P-value
<i>Age (v013)</i>						
15-19	1			1		
20-24	1.27	(1.02-1.58)	0.033	1.58	(1.33-1.88)	<0.001
<i>Parity (v201)</i>						
0	1			1		
1-2	7.37	(4.84-11.20)	<0.001	2.25	(1.65-3.08)	<0.001
3-4	7.58	(4.69-12.26)	<0.001	5.62	(2.60-12.11)	<0.001
5+	17.61	(4.39-70.61)	<0.001	0.27	(0.03-2.29)	0.230
<i>Marital status (v501)</i>						
Never been in union 1				1		
Married	2.20	(1.72-2.83)	<0.001	0.55	(0.41-0.75)	<0.001
Widowed	0.82	(0.18-3.73)	0.793	*		
Divorced	0.93	(0.57-1.49)	0.756	0.63	(0.32-1.25)	0.190
<i>Residence (v025)</i>						
Urban	1				**	
Rural	0.64	(0.49-0.83)	<0.001			
<i>Education (v106)</i>						
No education	1					
Primary	1.79	(1.13-2.83)	0.013			
Secondary	2.27	(1.43-3.61)	<0.001		**	
Higher	2.62	(1.03-6.66)	0.043			
<i>Media exposure (v384 A,B,C)</i>						
No	1			1		
Yes	1.28	(1.02-1.59)	0.030	1.42	(1.20-1.68)	<0.001
<i>At health facility talked of family planning with health worker (v395)</i>						
No	1					
Yes	1.57	(1.27-1.95)	<0.001		**	
<i>Household wealth status (mv190)</i>						
Poor				1		
Middle	**			1.13	(0.88-1.44)	0.322
Rich				1.25	(1.03-1.51)	0.024

\* does not apply to particular group. \*\*variable not significant in final multiple logistic regression model

Initially, all background variables regardless of their statistical significance were fitted. However, the final model whose results are presented above only comprised of the variables that were statistically significant or were direct determinants of contraceptive use. The backward stepwise method involves entering all variables of interest into the model and removing the variable that has the highest p-value and this is done until all remaining variables in the model are significant.

The goodness-of-fit test for binary response models using survey data was used to determine the best model using the 'estat gof' command which is only available after svy: logistic commands. This test is part of the Hosmer-Lemeshow test to determine whether fitted model accurately describes the observed outcome experience in the data. Null hypothesis is that the model is a good fit implying that probabilities  $>0.05$  using 95% level of confidence were taken to be a good fit. If the F statistic is less than 0.05 reject model as it is not a good fit and if greater than 0.05 model is a good fit. All background variables regardless of significance level in bivariate analysis were entered in model 1 and the variables contributing the least being removed one at a time. Final model goodness of fit at 5% level of significance was F statistic=0.3355 for females and F-statistic=0.5067 for males.

Model 2 fitted all variables that were significant at bivariate analysis only, using the same backward stepwise elimination method of removing variables with smallest contribution one at a time until and only remaining with significant ones, the final model arrived at shows that the F-statistic=0.3355 for females and F-statistic=0.5067 for males. Both models fitted arrived at the same outcome with all variables being significant and showing it is a good fit for the data.

The results from the multivariate analysis showed that age, parity, having a married marital status, residence, education, media exposure and whether at health facility there was talk of family planning with a health worker were highly influencing contraceptive use among the female youths aged 15-24 years. This is because all these variables were statistically significant at 95% CI.

Regarding the male youths aged 15-24 years, the multivariate results show that age, married marital status, media exposure, having one to four children (parity) and associated with a rich household wealth status were the factors influencing contraceptive use.

## **CHAPTER FIVE: DISCUSSION AND STUDY LIMITATIONS**

### **5.1 Discussion**

The study aimed at establishing the factors that are associated with contraceptive use among youths aged 15-24 years in Zambia. Majority of the youths though sexually active were not utilising contraceptives according to the ZDHS. The 2013/14 ZDHS showed that 49 percent of women aged 15–49 years were using any method of contraceptives. However, this study found that utilisation of contraceptives for the sexually active youths was lower than the overall national percentage referred above. The utilisation of contraceptives was 32 percent for the females and 39 percent for the males respectively. Utilisation of contraceptives for the males was slightly higher than for the females aged 15-24 years.

The term ‘sexually active’ in this study was defined as those youths that had sexual activity regardless of the period before the survey. Sexual intercourse marks the beginning of exposure to risk of pregnancy as the possibility of pregnancy is related to the frequency of sexual intercourse. Information on intercourse is important for refining measurement of exposure to pregnancy. All women and men were asked how long ago their last sexual contact occurred.

#### **Association between Sex and Utilisation of Contraceptives**

Contraceptive use among the males was higher at 39 percent than for females at 32 percent for youths aged 15-24 years. This is despite the females having a wider range of contraceptives that are available that they can choose from compared to the males. This is also despite the majority of the males not being talked to about family planning when visiting a health facility as the study has shown 93 percent of the males were not talked to. This could be because the males are not as shy as the females when it comes to accessing modern contraceptives from any place including pharmacies or because their form of modern contraceptives (male condoms) are easily and readily available. It could also be because 41 percent of males had more access to family planning messages due to media exposure (radio, newspaper and television) compared to the females, this could mean they got more information and were able to make better family planning choices. Similarly, a study in Kenya on men reported that 36 percent and 25 percent of respondents reported using a partner and male method respectively (Ochako, 2017).

## **Relationship between Demographic Factors and Contraceptive use**

The demographic factors included age, marital status, parity, age difference between partners and age at first cohabitation or marriage.

Age was found to be significantly influencing contraceptive use for both female and male youths. Those aged 20-24 years were more likely to use contraceptives than those aged 15-19 years. In a related study in Ethiopia it was found that women aged 20-24 years showed a larger increase in contraceptive use than those aged 15-19 years (Worku, Tessema and Zeleka, 2015). This could have been because most of those aged 20-24 years were more enlightened and could easily access contraceptives of different types available and most likely appreciated the importance of using them. Additionally, it can be attributed to some other reasons such as being workers or more educated. This could also be because those aged 15-19 years have problems accessing family planning services. However, another study found females aged 20-24 years were 0.763 times less likely to use contraceptives (Nyarko, 2015). In this study men aged 20-24 years were more likely to use contraceptives than those aged 15-19 years. This is different from a study by Boussen, (2012) whose findings showed that younger men were more likely to use contraceptives. In this study it could be that younger men were unable to easily access the contraceptives as compared to those aged 20-24 years and the older ones would understand the importance more.

Marital status is a characteristic that showed that married and divorced female youths were more likely to use contraceptives than those never married. This is similar to findings in a study in Ghana though it reports the odds to be twice as high compared to this study, showing that female adolescents that were married/living together were 4.75 times more likely to use contraceptives than their unmarried counterparts (Nyarko, 2015). This could be because the females were able to afford contraceptives due to partner support or married women having high coital frequency than the unmarried. Thus, having a married marital status influences use of contraceptives. Men who had never been in a union were more likely to use contraceptives than those who were married (OR=0.55). Findings are similar to a study that reports that currently married and formerly married men were less likely to use a male method than using traditional/no method (Kabagenyi et al, 2014).

Parity influences contraceptive use for both female and male youths. For the females, contraceptive use increases with an increase in parity. Females with one or more parity were more likely to use contraceptives than those with zero parity. This study has found that women

with more than five children were 17.61 times more likely to use contraceptives. The findings are similar to a study in Zimbabwe that found that the adolescent women with one or more parity were 13.6 times more likely to use contraceptives than those with zero parity (Ngome and Odimegwu, 2014). Men that had 3-4 children were 5.62 times more likely to use contraceptives than those with no children in this study. This could be because the women want to limit the number of children that they are having or want to stop having children if they reached the desired number and the men seem to be in support of this. Similarly, a study in Uganda reports that men with fewer than five children had increased odds of using modern contraceptives or reporting partners' use of contraception (OR = 2.039) compared to those with no children (Kabagenyi et al, 2014) .

Age difference between a female youth and their partner showed that those with more than five years age difference between them and their partners were less likely to use contraceptives compared to those with less than five years age difference though this was not statistically significant ( $p\text{-value} > 0.05$ ) for both males and females. However, a study in Zimbabwe found that the smaller the age difference between an adolescent and their partner the less likely they are to use contraceptives (Ngome and Odimegwu, 2014).

It is viewed that early age at marriage can add vulnerability to young women which can lead to poor fertility control and fertility related outcomes. Furthermore, these young girls are not able to insist on their partners using protection as a result they are vulnerable to HIV and other sexually transmitted infections in addition to pregnancy (UNFPA, 2012). Age at first cohabitation from this study showed that it was not statistically significant and the males whose age at cohabitation was 16-24 years were less likely to use contraceptives though this was not statistically significant. Only 21 percent of females were married at ages less than 15 and there was really no difference in the likelihood of using contraceptives, it was not statistically significant. This is similar to findings in Uganda which showed no significant relationship between age at marriage and contraceptive use (Assimwe et al, 2014).

### **Relationship between Socio-Economic Characteristics and Contraceptive use**

The variables investigated under this included residence, education, household wealth status, employment status and religion.

It is expected that youths in urban areas should use more contraceptives than those in rural residence. The findings from this study showed that all youths from rural areas are less likely

to use contraceptives. This could be because the youths in urban areas were more likely to have access to information from social media and other sources which youths in rural areas would not have access to. In rural areas it is possible not all methods will be readily available at the health post when they are needed or there is no time to concentrate on one client to explain all the methods as they are understaffed in most health posts and more clients are waiting or during community based distributions not all methods are made available to the clients. Irja (2007) found that Namibian young women in urban areas had more positive attitudes towards using contraceptives than those in rural areas. Boussen (2012), found that the men in rural areas are less likely to use contraceptives. Though men's residence is not a determinant in this study.

Regarding education among female youths, the findings show that female youths with primary and secondary education were more likely to use contraceptives. The males with primary education and above were also more likely to use contraceptives but they were all not statistically significant. Nyarko (2015) found a low contraceptive use among those women with no education and those with secondary and higher education were 11.53 times more likely to use contraceptives than those with no formal education in Ghana. The use of contraceptives could be high because the educated women know the benefits and others end up spending more time in school as they keep upgrading their studies as a result they postpone having children to later years.

The likelihood of contraceptive use among youths increased with an increase in household wealth status among males. The household wealth status for females are all not significant and only the household wealth status of the rich males is statistically significant. This implies that the rich males are more likely to use contraceptives and this could be because they are able to understand importance as they are more likely to be educated. Similarly, another study reports that men who belonged to the richer and richest wealth quintile had a higher likelihood of using modern contraceptives (OR =2.52) and (OR =2.47) respectively compared with those in the poorest quintiles (Kabagenyi et al, 2014). However, Boussen (2012), found that poor males were less likely to use contraceptives. Regarding the females a similar result was found in a study in Ghana as no significant relationship was reported (Nyarko, 2015).

The youths that are in employment are more likely to use contraceptives than those that are not in employment. This is similar to the findings by Nyarko (2015), where adolescents working were 2.99 times more likely to use contraceptives than the non-working and this could be because the women want to keep their jobs hence no children. Boussen (2012), further found



that males who are unemployed are less likely to use contraceptives. This could be because those working might want to concentrate more on their careers as a result they are more likely to use contraceptives and understand the importance.

The Protestants females are slightly more likely to use contraceptives than the Catholics though this is not statistically significant. The protestant males are all less likely to use contraceptives compared to the Catholics though this is also not statistically significant. Similarly, a study in Ghana found that religious affiliation of a woman had no significant relationship with a woman's contraceptive use (Nyarko, 2015).

### **Relationship between Availability of Family Planning Information and Contraceptive use**

Availability of family planning information looked at the source of information which was represented by exposure that the youths had to media. Youths that had media exposure (television, newspapers or radio) were more likely to use contraceptives than those with no exposure. Only 33 percent female and 41 percent male youths had exposure to media. Of those with the exposure only 36 percent females and 46 percent males used contraceptives. This is because the youths who had the media exposure were able to easily access the information concerning the contraceptives from all sources of media which include television, radio and newspapers. This is similar to findings from a study in Zimbabwe which showed that an increase in the level of media exposure increased the likelihood of current contraceptive use. Those with medium and high access (OR=1.8; 1.2 respectively) were more likely to use modern contraceptives (Ngome and Odimegwu, 2014). This study has found that media exposure to family planning information influences contraceptive use. Thus, if media exposure is positive and youths are better able to access it from wherever they are giving them more information, they can be better placed to make good family planning choices. Additionally, a study in Kenya reports male radio listenership of at least once a week increased the likelihood to use partner or male method (1.8 times). Household wealth status for the males shows that those with a rich household wealth status were 1.25 times more likely to use contraceptives. Similarly, another study reports that men who belonged to the richer and richest wealth quintile had a higher likelihood of using modern contraceptives (OR =2.52) and (OR =2.47) respectively compared with those in the poorest quintiles (Kabagenyi et al, 2014).

The females that were visited by a family planning worker at home were more likely to use contraceptives than those that were not visited at home. This community based distribution could be working because most of the women feel comfortable to talk about family planning

at home. They are able to ask questions freely and others might feel motivated after being visited by a family planning worker. In this study it was not a determinant of contraceptive use. A similar study that was conducted in Zambia in 2007 found that community based distribution of contraceptives where a community health worker visited a household to discuss family planning increased access to family planning (OR=1.83) (White and Speizer, 2007).

Interaction with a health provider at a health facility, youths visited a health facility and were told or discussed family planning with a health worker, were more likely to use contraceptives than those who were not told. This is because they received more information from a health worker and could have also learnt how to properly use them. Similarly, a study in Ghana reports that female adolescents who visited health facilities were 1.96 times more likely to use contraceptives than those who did not (Nyarko, 2015). This influences contraceptive use among female youths in Zambia.

### **Relationship between Knowledge and Contraceptive use**

The knowledge levels of contraceptives for females and males was high at 99 percent. However the high knowledge did not translate into use of contraceptives. This is similar to findings from a study in Nigeria that reports on knowledge of at least one contraceptive method, it was reported knowledge was highest among males when compared to females (92.1 percent versus 86.6 percent) respectively. High knowledge did not translate to high usage of contraceptives (Odusina et al, 2012). Out of the 99 percent who had knowledge of contraception, the study revealed that only 39 percent of the males who had the knowledge about the contraceptives used them and only 32 percent of the females used the contraceptives though they were sexually active. However, a study in Ghana found that male adolescents had more knowledge than the females (Boamah et al, 2014). This current study found that the females and males had the same high level of contraceptive knowledge. According to CSO (2014), this is attributed to the successful dissemination of family planning messages through mass media. However, this study shows only 33 percent of the females and 41 percent of the males were exposed to media (television, newspapers or radio). The knowledge is high but use was low and this could be because youths did not know how to correctly use the methods or where the methods are available though they know about them (Boussen, 2012). This could also be because there are not many places where the youths can have access to correct information in a place they feel safe and without discrimination.

## **Factors Influencing Contraceptive use among Youths aged 15-24 years in Zambia**

The study findings showed that age, parity, married marital status, residence, education, media exposure and talking to a health worker about family planning at health facility are the major factors that influenced contraceptive use among the female youths aged 15-24 years. This is similar to findings from a study that was conducted in Zambia in 2007 using the 2007 Zambia demographic health survey which showed that married marital status, parity, residence, age and household visit by a community health worker increased the use of modern contraceptives. Though in this study household visit by a community health worker was not a factor (White and Speizer, 2007).

This study also found that age, rich household wealth status, media exposure, parity and a married marital status are the major factors influencing contraceptive use among the male youths aged 15-24 years in Zambia. These findings are similar to other studies on men using the demographic health survey which reported that men with a richer household wealth status, age, marital status, media exposure and parity influenced contraceptive use (Kabagenyi et al, 2014; Boussen 2012; Ochako et al, 2017)

### **5.2 Study limitations**

The study used secondary data, which was confined to the available information and which asked closed ended questions therefore making it skewed towards quantitative analysis of results and there was no information on the attitudes and perceptions of the respondents. The secondary data could also not operationalise some aspects of the conceptual framework and some of the questions could not be found in the ZDHS like those involving policies and issues with stigma. The Zambia Demographic and Health Survey did not provide many question on contraceptives in detail.

## **CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS**

### **6.1 Conclusion**

The study has examined selected factors associated with contraceptive use among youths aged 15-24 years in Zambia using the data from the 2013/14 Zambia demographic health survey. The study has identified factors influencing contraceptive use among male and female youths. Some of the factors influencing use among females and males which are key to focus on are education, parity, media exposure to family planning messages, rich household wealth status and interaction with a health worker at health facility about family planning. Program focus can be placed on these above through more empowerment to end poverty, more exposure to family planning messages, sensitisation on the importance and benefits of having fewer children that a family can take care of, creating a conducive environment for the youths to approach health facilities and seek the services they need without fear or discrimination.

The study has shown that the results have implications for the youth programs in Zambia, it is therefore important to intensify media messages that focus on the youths regarding family planning as very few youths have access to family planning information. However, media messages, as the study has shown influence contraceptive use. It is also important to scale up programs on contraceptives for the younger male and female youths aged 15-19 years as they are also sexually active. Knowledge of contraceptives is high however this does not translate into use. The rural areas have low use and this could be because they do not have enough access to family planning information, they do not have enough family planning information or facts and they are still myths surrounding the use of family planning. Therefore, it is important to continue with interventions that focus on reducing early and unwanted pregnancies and their consequences.

### **6.2 Recommendations**

- i. Education access should be improved to at least primary education as the study has shown that use of contraceptives increased with an increase in education among females. When educated they will be better able to understand the importance of using the contraceptives. It is therefore important to strengthen girl child education especially in rural areas to ensure contraceptive information is adequate, importance and use of contraceptives are understood, to avoid early and unwanted pregnancies.
- ii. The government should consider more education programs, on family planning through media exposure, targeting the youths. This should especially be carried out in rural areas

as this study has shown they are more youths living in rural areas. Programs in local languages by other community members encouraging this group of youths to use contraceptives and on the importance of using them. The stakeholders should also focus on supply and demand issues by engaging the youths in finding solutions to the issues they encounter. It is important to provide the youths with the right information in order for them to make informed reproductive health decisions.

- iii. It is also important to empower the male youths economically as the study has shown that males with a rich household wealth status are more likely to use contraceptives and this also influences contraceptive use. More family planning messages should be tailored for the males with low socio-economic status as men play an important role in fertility decisions in most of our societies.
- iv. The youths aged 15-19 years should not be left out in the programs that deal with family planning though they are young they need to be incorporated in the programs and discussion and need to know where they can access health information without stigma.
- v. The health workers from health facilities need to be trained on professionalism and how to handle the younger age group seeking health information and services from their health facilities. The youth friendly corners that offer services need to be revived and properly funded by government or involve non-governmental organisations as partners as the youths are better able to deliver information to other youths through the structures that are already available. It is also important for health workers to discuss family planning with individuals that visit the health facility as health workers are expected to discuss reproductive needs, contraceptive choices and counsel them to adopt a method of family planning.
- vi. Further studies should be carried out to research on other aspects such as the qualitative ones pertaining to policies, cultural issues and how such factors influence contraceptive use among youths.

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## APPENDICES

### A. BUDGET

ITEM	QUANTITY	UNIT COST	TOTAL (in Kwacha)
Printer	1	2,000	2,000
Stata software	1	1,500	1,500
Internet services	10GB	360	360
Reams of paper	3	60	180
Transport	1	700	700
Proposal and Report binding	5	250	1,250
The UNZABREC fees	1	500	500
Flash drive	1	100	100
Grand Total			6,590

## B. ANALYTICAL TABLES

Table 10 depicts the utilisation of contraceptives as presented in figure 3.

Table 10: Utilisation of contraceptives by females and males aged 15-24 years

	Contraceptive use		Total
	No use	Use	
Females	3075 (68)	1423 (32)	4498 (100)
Males	2189 (61)	1411 (39)	3600 (100)

Table 11: Contraceptive use by type of method

Type of contraceptives	Females	Males
Pill	258(6)	79(2)
IUD	10(0)	*
Injectable	726(16)	139(4)
Implant	159(4)	15(0)
Male condom	167(4)	1140(32)
Female condom	3(0)	6(0)
Lactational amenorrhea method	33(1)	*
Standard days method	0	*
Male sterilization	1(0)	*
Female sterilization	0	*
Rhythm	4(0)	10(0)
Withdrawal	52(1)	21(1)
Other(modern or traditional)	9(0)	1(0)
No use	3075(68)	2189(61)
Total	4498 (100)	3599 (100)

\*not used by that group and their partners.  $p < 0.001$  females and males  $p < 0.001$

Table 12: Relationship between media exposure and contraceptive use

	Contraceptive use					
	Females			Males		
	No use	Use	Total	No use	use	Total
Media exposure	959 (64)	532 (36)	1491 (100)	795 (54)	667 (46)	1462 (100)
No media exposure	2116 (70)	891 (30)	3007 (100)	1394 (65)	744 (35)	2138 (100)

Females  $X^2=17.35$  and p value=0.0005 Males  $X^2=43.61$  and p value=0.001

Table 13: Relationship between contraceptive use and discussing family planning with a health worker at health facility

	Contraceptive use					
	Females			Males		
	No use	Use	Total	No use	Use	Total
Talked with health worker	644 (53)	567 (47)	1211 (100)	124 (52)	112 (48)	236 (100)
Not talked with health worker	798 (72)	383 (28)	1181 (100)	2041 (61)	1293 (39)	3334 (100)

Females  $X^2=101.26$  and p value<0.001 Males  $X^2=7.20$  and p value=0.013

## C. DATA EXTRACTION TOOL

### STUDY TITLE:

### FACTORS ASSOCIATED WITH CONTRACEPTIVE USE AMONG YOUTHS AGED 15 TO 24 YEARS IN ZAMBIA

The following variables and questions will be extracted from the women and men's questionnaires to answer the research questions on the factors associated with contraceptive use among youths 15-24 years in Zambia.

Sn	Variables	Questions from the ZDHS questionnaire	Response	Number of respondents
1	<b>Respondent's Background</b>			
	Age	How old were you at your last birthday?	Age in years	
	Sex	As categorised in dataset	1.Male 2.Female	
	Marital status	What is your current marital status?	1.Never in a union 2.Married 3.Widowed 4.Divorced	
	Age at cohabitation	How old were you when you started living with your first partner/spouse?	Age in years	
	Age of spouse (to come up with age difference)	How old was your spouse or partner at their last birthday?	Age in years	
	Parity	Total number of children ever born	Number of children	

2	<b>Socio-economic</b>			
	Education	Have you ever attended school?	1.Yes 2.No	
		What is the highest level of school you attended?	1.Primary 2.Secondary 3.Higher	
	Region	Name of province	_____	
	Residence	Name place	1.Rural 2.Urban	
	Household wealth status	Wealth status as described by ZDHS dataset	1.Poor 2.Middle 3.Rich	
	Employment status	Have you done any work in the last 12 months?	1.Yes 2.No	
		If yes, what is your occupation, what kind of work do you mainly do?	_____ _____	
	Religion	What is your religion?	1.Catholic 2.Protestant 3.Muslim 4.Other (specify) _____	
3	<b>Knowledge and use of contraceptives</b>			

	Knowledge level of contraceptives	Which contraceptive method do you know of?	1.Knows no method 2.Only folkloric 3.Only traditional 4.Modern method	
	Contraceptive use	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	1.Yes 2.No	
		Which of the methods are you currently using?	1.No method 2.Folkloric method 3.Traditional method 4.Modern method	
4	<b>Availability of services</b>			
	Media exposure	In the last few months have you heard, seen or read about family planning on the radio, television or newspaper?	1.Yes 2.No	
	Discussed family planning with health worker	In the last few months, have you discussed the practice of family planning with a health worker or health professional?	1.Yes 2.No	

	Community based distribution	In the last 12 months, were you visited by a fieldworker who talked to you about family planning?	1.Yes 2.No	
		In last 12 months have you visited a health facility for care?	1.Yes 2.No	
		If yes, did any staff member speak to you about family planning methods?	1.Yes 2.No	
		Do you know of a place where you can obtain a method of family planning? If yes, where is that place?	1.Yes 2.No (name place)_____	