Determinants of youth sexual behaviours and knowledge of Reproductive Tract Infections (RTIs) and Sexually Transmitted Infections (STIs) in Malawi: Evidenced from the Demographic Health Survey 2010

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ABSTRACT

The sexual behaviour of youths is believed to play a role in the spread of Sexually Transmitted Infections (STIs) and Reproductive Tract Infections (RTIs). This study examines the determinants of youth sexual behaviours and knowledge of reproductive tract infections (RTIs) and sexually transmitted infections (STIs) in Malawi. It explores rural/urban differentials in sexual behaviours using indicators such as early sexual initiation, multiple sexual partnerships, and non-use of condoms, in order to establish policy recommendations toward improving sexual behaviour among youths. The Malawi Demographic Health Survey 2010 data was used. Out of a sample of 2987 males and 9559 females aged 15-24 years, 5652 females and 1405 males (condom use), 675 females and 511 males (inconsistent condom use), 6470 females and 2026 males (multiple sexual partnerships (MSP)), and 15217 females and 1405 males (early sexual debut) were filtered in the study.

Chi-square and logistic regression techniques were performed to test for association between sexual behaviour indicators and socio-demographic variables. The prevalence of non-use of condom was higher among catholic females (OR=1.11), lower among Muslim males (OR=0.81) and higher among CCAP females (OR=1.19). Muslim females were (OR=1.42) more likely to initiate sexual activities early, while Muslim males were (OR= 0.57) less likely to initiate sexually activities early. Females in the central region (OR=1.51) and catholic males (OR=1.63) were more likely to have more sexual partners.

Encouraging these young people to be faithful to one uninfected partner, abstinence from sexual activities, use condoms consistently and delay sexual initiation will help curb the spread of STIs in Malawi.

Key words

Sexual behaviour, sexually transmitted infections (STIs), condom use, sexual partners, early sexual debut, youths, Reproductive tract infections (RTIs), Malawi.

DECLARATION

I hereby declare that **"*Determinants of youth sexual behaviour and knowledge of RTIs/STIs in Malawi; Evidenced from the Demographic and Health Survey 2010*"** is my own work, and that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledge by complete references.

Signed: Wilson Chialepeh Ningpuanyeh

September, 2015

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MAY GOD BLESS YOU ALL

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ABBREVIATIONS AND ACRONYMS

AGI	Alan Guttmacher Institute
AIDS	Acquired Immune Deficiency Virus
CCAP	Church of Central Africa Presbyterian
CDC	Centre for Disease Control
CI	Confidence Interval
EA	Enumeration Areas
HAV	Hepatitis A Virus
HBM	Health Belief Model
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
MDHS	Malawi Demographic Health Survey
MSM	Men who have sex with Men
MSP	Multiple Sexual Partnership
NFPAM	National Family Planning Association of Malawi
NSO	National Statistics Office
NYCOM	National Youth Council of Malawi
PHC	Population and Housing Census
RTI	Reproductive Tract Infections
STI	Sexually Transmitted Infections
TRA	Theory of Reasoned Action
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNAIDS	United Nation Agency for International Development
UNGASS	United Nation General Assembly Special Sessions
WHO	World Health Organization

The following articles were published during the course of this thesis;

- Sexual activity of the youth population in Malawi: the emerging health care scenario – ***Journal of Asian and African Studies***.
- Risk factors of inconsistent condom use among sexually active youths: Implications for Human Immunodeficiency virus and sexual risk behaviours in Malawi – ***Journal of Asian and African Studies.***
- Associated risk factors of sexually transmitted infections (STIs) and multiple sexual relationships among youths in Malawi. ***PLoS ONE***.
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CHAPTER 1

INTRODUCTION

1.1 Introduction

Recent years have witnessed considerable attention being paid to adolescent sexual behaviour in general, especially in sub-Saharan Africa, and how risky sexual behaviours contribute to poor sexual health outcomes. The Human immunodeficiency virus and the Acquired Immune Deficiency syndrome (HIV/AIDS) have become a major epidemic worldwide (UNAIDS 2010). Despite considerable efforts in reducing the spread of this epidemic, sub-Saharan Africa continues to record the greatest number of HIV infections and other sexually transmitted infections (STIs) and deaths worldwide, particularly amongst the youth who represent one of the fastest-growing risk groups for STIs (Kalichman, et al., 2007). This region accounts for only 10 per cent of the world's population, yet about two thirds of AIDS deaths have occurred in this region, with adolescents showing the fastest growing rate due to their risky sexual practices (Greenwood, et al., 2013). Young people aged 20-24 years, account for approximately 40% of all new HIV infections worldwide (UNAIDS, 2009), and 2.1 million adolescents aged 10-19 years are estimated to be living with STIs, especially HIV, in low and middle income countries (UNAIDS, 2013). The epidemic, according to the Joint United Nations Programme on AIDS (UNAIDS), has affected sub-Saharan Africa in particular, with more than 28.5 million people infected, and more than half of all new infections occurring in young people aged 15-24 years of age, with teenage girls being five to six times more likely to be infected than boys of the same age.

Reproductive tract infections (RTIs) are infections that affect the reproductive tract, which is part of the reproductive system. Reproductive tract infections are being highly recognized as a serious global health problem with more impact on females and males, their families, and communities. They have severe consequences, including infertility, ectopic pregnancy, chronic pelvic pain, miscarriage, and increased risk of HIV transmission. In most females, RTIs can be at the upper reproductive tract or in the lower reproductive tract. That is, in the fallopian tubes and uterus, and vagina, cervix and vulva respectively. In the males, these infections occur at the penis, testicles, urethra, or the sperm tube. Reproductive tract infections may be; endogenous, iatrogenic and sexually transmitted diseases. Endogenous infections are the most common RTIs in the world that result from an overgrowth of organisms present in the vagina. They are very widespread and cause females varying degrees of discomfort and pain. Common symptoms include vulvo-vaginitis (itching and pain in the external genital region and vagina), painful or uncomfortable sexual intercourse, and the presence of an abnormal discharge. The rate of infection of RTIs is not evenly distributed, as it ranges from a yearly incidence of 2.2% in East Asia and the Pacific to 25.7% in sub-Saharan Africa among the population aged 15-49 years (WHO 2001).

Malawi, like any other country in sub-Saharan Africa, has been severely affected by the HIV/AIDS epidemic and other reproductive tract infections (RTIs) and sexually transmitted infections, with 11% of 15-49 years adults being infected with STIs, especially HIV, and most of these infections (90%) are transmitted through heterosexual contact (UNAIDS, 2010).These infections affect them disproportionately with a higher prevalence among sexually active females than their male counterparts (UNGASS, 2010). Reproductive tract infections and other STIs, especially HIV, have been a major cause of death among young people in Malawi, and this has been a major contributing factor to the low life expectancy of 54.8years in the country (UNAIDS, 2013; Malik, 2013).The prevalence of these infections, especially HIV, varies by age, gender and other socio economic characteristics. However, the 2004 Survey (MDHS), indicates that the prevalence among the age group 15-49 was higher among women (13.3%) than men (10.2%), and higher in urban (17.1%) than in rural areas (10.8%). Among those aged 15-24 years, the prevalence of STIs, especially HIV, is estimated at 6.0% and is higher among females at 9.1% compared to males at 2.1% (MDHS 2004). The government has however demonstrated an impressive reaction towards this epidemic in order to increase access to treatment and to improve prevention initiatives. This can be evident from a decline in infection rates from 14% in 2003 to 10% in 2011, and new infections from 100,000 in 2003 to 46,000 in 2011 (UNAIDS 2013). The level of the epidemic and the shortage of human and financial resources have however retarded progress in fighting these infections. Young people's vulnerability for both physical and social reasons, such as inconsistent use of condoms, discordance in long-term couples (one partner HIV-negative and one positive) where protection is not being used, and others such as; low prevalence of male circumcision, suboptimal implementation of HIV prevention interventions within clinical arenas, and late initiation of HIV treatment, have equally hindered progress in combating these infections.

Researchers, government organizations and other policy makers have been battling against these infections in sub-Saharan Africa, yet it still remains one of the biggest challenges to the health and development of the youth in sub-Saharan Africa. Recent years have seen a growing recognition of the reproductive health needs faced by young adults, particularly those within the age group of 15-24 years since they suffer severe consequences of unplanned pregnancies, reproductive tract infections, sexually transmitted infections, and unsafe abortions due to risky sexual practices. Negligence through individual's behaviour, substance use, drugs, and alcohol consumption has led to infected victims suffering serious long – term consequences as a result of these infections (Asante, et al., 2014).They are less likely to protect themselves from infections or seek appropriate diagnosis and treatment. Today's youths are the largest group in the history of reproductive tract infections (RTIs) and sexually transmitted infections (STIs) especially HIV/AIDS with nearly half of the affected population being younger than 25 years of age (UNAIDS 2010). They have inherited a lethal legacy that is affecting them and their friends, brothers and sisters, parents and teachers. They are the most threatened globally and offer the greatest hope for turning the tides of RTIs/STIs (UNAIDS 2004a: 93). Thus, the behaviour they adapt today either sexually or otherwise, will determine the future of RTIs/STIs, depending on their knowledge of these infections, mode of transmission, and prevention strategies. Unfortunately, young people do not see themselves as being victims of RTIs/STIs since the majority do not use contraceptives to reduce the spread of these infections. However, various reasons has been attributed to the non-use of preventive measures to curb the spread of these infections such as accessibility, availability, lack of money, no knowledge of the correct contraceptives to use, danger to health, and trust among partners. With the barriers and misconceptions regarding receipt of health care services, young people are unable to seek timely and effective treatment for their infections. Social taboos have a tremendous impact as young women suffering from RTIs/STIs as a complication of an unsafe abortion may be ashamed to seek care. Youths who do not control the circumstances of their sexual activity, such as victims of sexual coercion and abuse, are at risk of recurrent sexually transmitted infections, even if they are able to seek treatment the first time. Thus, young people especially women, who become infertile as a result of an RTI, may be stigmatized or be abandoned in cultures where fertility is closely associated with women's perceived worth.

Reproductive tract infections (RTIs) and sexually transmitted infections (STIs) are the most important causes of maternal and perinatal morbidity and mortality among youths with serious complications such as ectopic pregnancy, pelvic inflammatory disease, preterm labour, miscarriage, stillbirth and congenital infections (WHO 2006). These infections are transmitted heterosexually despite the emphasis on biomedical interventions to prevent these infections or improve the health of infected persons. Most interventions has targeted behavioural changes as an essential means of preventing the spread of these infections, especially in poor countries (UNAIDS 2010). Irrespective of the health related impact of these infections, RTIs/STIs carry great social and economic consequences, especially among women. Unfortunately, most of these infections often go undiagnosed and untreated in developing countries predominantly due to lack of awareness and lack of available healthcare facilities, especially within the rural areas. Most young people are aware of these infections and how to prevent them, but such information is not effectively disseminated. Much has been documented with regard to the sexual activities of the youth but with little emphasis on rural/urban variations in sexual behaviours, particularly in Malawi. It is based on this variation that the present study explores the determinants of sexual behaviours of the youth and their knowledge of RTIs/STIs using socio-economic and demographic variables such as gender, wealth, education, multiple partnerships, early sexual debut, non-use and inconsistent use of condoms, region, marital status, place of residence and literacy. However, the study also explores awareness and knowledge of RTIs/STIs in order to observe variation by gender and by residence.

1.2 Problem statement

The sexual behaviour of the youth is perceived to play an important factor in the spread of sexually transmitted infections (STIs) and reproductive tract infections (RTIs). The spread of these infections among young people is growing faster, partly due to their vulnerability and low use of preventive services to curb their spread. The impact of these infections accounts for over two thirds of infected youths, with a high prevalence rate of 25% among adults in some countries (UNAIDS 2010). In order to remedy this situation, young males and females have been singled out as being more vulnerable to the transmission of these infections due to their risky sexual behaviours. These infections have been regarded as life-threatening diseases and their impact require an urgent introduction of preventive measures in order to reduce their spread. The impact has been deeply felt, particularly in sub-Saharan Africa, which has about two-thirds of the world's 40 million cases living with STIs, especially HIV/AIDS, with about 68% of new cases of HIV/AIDS and other sexually transmitted infections (UNAIDS 2012). The most recent policy on the means for limiting the spread of these infections emphasizes the protection of young people in sub-Saharan Africa from being infected by this pandemic (Michelle, 2007). Thus, the future of these infections lies greatly in the hands of young people, as the sexual behaviours they adapt now and those that they maintain during their entire sexual lives will greatly determine the state of reproductive tract infections (RTIs) and sexually transmitted infections (STIs) rate in the future. It has been evident that about eighty-eight per cent of 1.2 billion adolescents reside in the developing economy where access to most sexual and reproductive health services are inadequate and do not even exist in some parts (Guttmacher Institute, 2010). In South Africa, youths aged 15-24 years continue to be vulnerable to infections such as the HIV with a prevalence rate of 7.3%, with a drop in condom use from 85.2% to 67.5% for males and from 66.5% to 49.8% for females (Shisana, et al., 2014).Young people continue to learn from one another, and their behaviour towards sexual activities will depend on the information they receive, and the skills and services through which the current generation of adolescents will educate their children. They are therefore central to the discourse on (RTIs/STIs) worldwide. There is great concern about the continuous spread of these infections especially in sub-Saharan Africa, and it has been concluded that adolescent sexual activities are characterized by early onset of sexuality, multiple sexual partnership and low incidence of condom use. However, the impact has not been felt among youth alone, but within the entire community and country at large.

The Malawi 2011 Statistics estimates indicate that, 910,000 people were living with STIs, and AIDS has been noted as a leading cause of deaths among young people in Malawi (UNAIDS 2012). The impact of these epidemics has cut across the entire country affecting males and females, children, orphans, sex workers, with youths being the most infected. The impact of these infections is a major factor that has contributed to a low life expectancy of 54.8 years (UNICEF, Malawi 2012 Statistics) in Malawi. The government and other international donors have made commendable efforts to increase access to the treatment of these infections, and to improve prevention. However, factors such as the level of the epidemic and shortage of human and available financial resources have hindered greater progress toward the reduction of the pandemic. Thus, the response towards RTIs/STIs is still low since data on high-risk groups are not available, and legislations avoid these infections, as such greater effort is needed in order to implement a combined prevention approach. The Human Immunodeficiency Virus (HIV) and other RTIs/STIs such as gonorrhoea, syphilis, herpes, Chlamydia and trichomoniasis, and unintended pregnancies are adverse consequences of risky sexual behaviour that has been observed among youths.

Individuals, at risk for RTIs/STIs or unintended pregnancy have in one way or the other engaged in activities that put them at risk for these infections. The death toll from these infections especially HIV/AIDS has been alarming as ten million youths aged 15-24years and almost three million children aged less than 15 years are living with these infections (De Cock, et al., 2002). The levels of infection vary among males and females, with females aged 15 – 24 years being as twice (4.3%)

as likely to be infected with these infections as males (2.1%) of the same age group (Zou, et al., 2014). This has been as a result of age discrepancy in relationships, female's inability to negotiate condom use (Exavery, et al., 2012) and the use of sexual violence or coercion (Brookmeyer, 2014).Young people in sub-Saharan Africa are sexually experienced by the age of 20, and global trends suggest that new RTIs/STIs among youths are on the rise, with more than half of all new RTIs/STIs occurring among youths aged 14-19 and 20-24 years. In Botswana, the rate of these infections, especially the HIV among females and males with other sexually transmitted infections, has increased from 18% in 1992 to 38.5% in 2000, and35.4% in 2001 to 36.2% in 2002 (Esther, 2005). Recent trends suggest a decline of 25% or more in HIV prevalence among young antenatal clinic attendees (Gouws, 2014). Namibia with an estimated 2.1 million people also suffers from these infections with an estimated 200,000 people infected with the pandemic and adult ages 15 years and older representing 90% of those infected (UNAIDS 2009). The average HIV prevalence in Namibia is estimated at 15.3% and 10.3% among 15-24 years old females and 3.4% among 15-24 years males (De Beer, et al., 2012). The rate of infections has increased unabated especially among females despite remarkable efforts being made to minimize the spread of these infections, thus claiming millions of lives worldwide, especially in sub-Saharan Africa. There is a need for continuous research into ways of minimizing the spread of these infections, and their negative socio-economic impact. Youths are therefore the largest group in the history of RTIs/STIs with almost half of the global population which are affected.

Besides HIV/AIDS in Malawi, there are other RTIs/STIs that are of high risk such as hepatitis A, schistosomiasis, syphilis and rabies, which are on the rise. Considering the mode of transmission of these infections, and the fact that antiretroviral therapy for the treatment of RTIs/STIs is severely limited, youths need to manage their sexual habits. However, the devastating socio-economic impact of these infections and its increasing spread has therefore stimulated a shift of research from a biomedical to a societal context of sexual behaviour (Elvis, 2009). The rate of these infections has been on the rise in sub-Saharan Africa due to its poor, underdeveloped nature compared with other parts of the world. The sexual behaviour of young people is therefore considered risky because they become sexually active early (Omoighe, et al., 2013), have more than one sexual partner (concurrently or serially) and practice unprotected sex, which may be incorrect use of condoms. Risky sexual activity has therefore put teens at risk of sexually transmitted infections (STI), unwanted pregnancy, and incidences of teenage pregnancy, reproductive tract infections (RTIs) and HIV infections. Those that practice unsafe sex, premarital sexual activities, early sexual experience, and prostitution often suffer the consequences of contracting sexually transmitted infections (STIs), reproductive tract infections (RTIs) and unwanted pregnancies. However, governments and international donors view continued rapid population growth, high birth rates and the escalating rate of HIV infection and unprotected sexual activity with great concern, since these contribute significantly to the region's statistics. At least 80 per cent of sub-Saharan Africa's youths are sexually experienced and the statistics on having had sexual intercourse by the age of 20 are; 73 % of Liberian females aged 15 to 19; 15% of Nigerian females; 49% of Ugandan females, and 32% of Botswana females (Advocates for Youths 2008). Youths involved in the risk of substance abuse, delinquent behaviour, depression-suicide, sexual abuse and sexual risk taking behaviour, encounter reproductive health problems such as unplanned pregnancy and STIs, including HIV (Islam, et al., 2015). In Botswana, the youth perceived health services as unfriendly despite their positive perception about sexual reproductive health services (Lesedi, et al., 2011).

Sexually transmitted infections (STIs) have been closely monitored in Malawi, not to assess the magnitude and spread of the virus, but rather for planning and designing appropriate and important relevant intervention strategies (Janine, et al., 2004). It has been evident that, 90% cases of sexually transmitted infections including HIV/AIDS are spread through heterosexual contact, and about 13% of AIDS cases and 25% of national HIV cases occur among youths aged 15-24 years (Abhijeet, et al., 2009). The view of public health experts on issues of unsafe sex and unsafe health care in sub-Saharan Africa shows that sexual transmission is the dominant mode of STI transmission with risk factors such as multiple sexual partnerships, early sexual debut, and inconsistent use of condoms. These and other practices are influenced by factors such as lack of accurate information on the mode of transmission, ignorance of one's own or one's sex partner's status (Przybyla, et al., 2014), culture, economic conditions (Amuri, et al., 2011), mobility and gender inequalities (Petersen, et al., 2011). Thus, young males and females are infected on a daily basis and a good number die because of these infections. There is a high rate of awareness of STIs, their mode of transmission, and impact on health among youths in Malawi, with nearly all adolescents aged 15-24 years having knowledge of at least one form of STIs (MDHS 2010). Despite the impressive levels of awareness and knowledge, only 24% of sexually experienced females and 38% of males aged 15-19 years had ever used a modern method of contraception, with only 15% of sexually active females and 31% of sexually active males having used a method of contraception (MDHS, 2010). In the year 2000, knowledge of condoms increased to an almost universal level of 96-99% for females and 95-100% for males within the two age groups (MDHS, 2000), and irrespective of the rise, only 69% of females and 83% of males aged 15-19 years knew where to obtain a condom. Knowledge on where to get a condom varies among youths with a higher rate among older boys than girls, those living in urban than rural areas, and those with greater exposure to media. Although most young people believe that condom is effective in the prevention of HIV/AIDS and other STIs, majority of them do not use condom, and those that manage to use it do not do it consistently because of fear and misconceptions regarding contraception. It has been evident that about 70% of young males and females who had ever used condoms reported that there were times that they had sex without a condom (NYCOM, 2000).

Although STI awareness has been low during the past years, the rate of knowledge among youths is very high but the majority do not use contraceptives. Other studies have shown that the level of knowledge has improved with 90% Malawians having knowledge of sexually transmitted infections (Munthali, *et al.,* 2014). It has been evident in the Dowa District that over 90% of youths are aware of at least one sexually transmitted infection, especially HIV/AIDS, but very few (slightly lower than 80%) knew of gonorrhoea and syphilis and a much lower percentage (40%) knew of bubos (NFPAM 2002). Most of these youths adopt risky sexual behaviour during their adolescence without having adequate or correct information on how to protect themselves from the adverse consequences. However, HIV/AIDS data indicate that 15-24 years have the highest rates of new infections with more girls likely to be infected than boys (UNAIDS 2010). Although the society of Malawi is against premarital sex, studies have shown that most young people initiate sex at an early age and before they get married, while others initiate sex as early as the age of 10 years, and the majority report having sexual intercourse by the age of 17 years (Misiri, 2014). Other studies have indicated that about 50% of youths in Malawi initiate sexual intercourse before the age of 15 years (Eveline, et al., 2006). The Malawi Demographic Health Survey 2000 data also indicate that there is relative early sexual initiation among youths in Malawi: with 61% males and 57% females aged 15-19 years, with the median age at first sexual encounter at 17.1 for males aged 20-24 years in the north, 18.4 in the centre and 16.9 in the south. However, it has been evident that 17-31% of girls aged 12-14 years reported that they had experienced their first menstruation and the median age at first menstruation ranged between 14.6 and 15.3 years across most countries in sub-Saharan countries (Kofi, et al., 2006). The reasons for early sexual debut have been attributed to alcohol consumption, drugs (Hutton, et al., 2013) and the desire for money and being thrown out of the house by a relative. Thus, early sexual initiation increases the risk for STIs among the youth with an increase in the length of sexual activity before they have to settle down in marriage or a stable relationship (Bakilana, 2005). This will lead to late marriages despite their early sexual debut. In an attempt to delay marriage, the length of time between the first sexual encounter and time of marriage will lead to a longer period for sexual activity, thus creating more opportunities for contracting sexually transmitted diseases. Early initiation of youths into sexual activity has been associated with longer periods of risk taking in later adolescence and early adulthood.

It has been evident that, the number of lifetime sexual partners for both males and females are directly related to their age at first intercourse. Thus, youths who engage in first sexual intercourse early are significantly more likely to have more lifetime sexual partners (Zuma, et al., 2014). This increases the chances of encountering sexual and reproductive health problems such as unintended pregnancies, sexually transmitted infections, early family formation, and emotional stress. They are at higher risk of acquiring STIs at adolescent age since they are more likely to have multiple sexual partners, do not use contraceptives, and select partners at higher risk. Moreover, considering the fact that younger females are more susceptible to infections than older females, each year millions of teenagers who have had sex at least once acquire RTIs/STIs, and HIV infection has been the leading cause of death among 15-24 years old in the sub-Saharan region (UNAIDS 2010). However, even though knowledge of HIV and other sexually transmitted infections, and its preventive measures has become universal, there is a high level of early sexual activity among young people, with the majority not using contraceptives. The conception that a condom can get stuck in a woman's womb, fear of its side effects, the inability to afford condoms, and the fact that it disrupts sexual pleasure, discourages most young people from using contraceptives, and this facilitate the spread of HIV and other sexually transmitted infections. The prevalence of these infections were not as high as it is today, but because of people's reluctance to discuss issues surrounding these infections, and the fact that many do not have symptoms, leads to people suffering from these infections.

The present behaviour of youths in relation to their sexual activities is a call for concern and all concerned parties should join together to remedy the situation. Youths need to complete their physical, emotional, and psychological journey to adulthood and need a balanced healthy social, physical, and mental environment to enable them to cope with vulnerable and delicate issues (Beena, 2011). Their economic status hinders the progress of this process, as they are being tempted repeatedly to experiment with sexual activities that result in divergent sexual behaviour and casual sexual relationships. They become exposed to the risk of unwanted pregnancies, RTIs/STIs, drug abuse, and sexual exploitation, and experience sexual activity at teenage age. Researchers have long been interested in explaining the transition to first intercourse among teenagers, not only because it is linked to unintended pregnancies, early family formation, and sexually transmitted infections, but rather because sexual intercourse is an important marker of adolescent development (Stöckl, et al., 2013).This has led to the development of large literature on teenage sexuality, pregnancy, and contraceptive use with a focus on the identification of socio-demographic and family characteristics related to teen sexual behaviours. What have not been well understood are the factors that influence youth's decisions to engage in sexual activities? Although there is widespread knowledge of RTIs/STIs, the question is asked why they do not use contraceptives. Is there sufficient awareness of existing reproductive tract infections, treatment practices, their knowledge and perceptions regarding RTIs/STIs and their related services? It is therefore necessary to elaborate on these factors because it will ultimately influence our understanding of how more distal factors can influence behaviour at the individual level.

1.3 Purpose of the study

The purpose of any research study is to present a clear and concise statement of the specific goal or aim of the study generated from the research problem. It indicates the type of research (quantitative or qualitative) to be conducted and includes the variables, population, and setting of the study. Any quantitative research is aimed at identifying and describing variables, examining relationships among them, and determining the effectiveness of interventions in managing research problems (Burns, et al., 2005). In this study the purpose was to explore the determinants of risky sexual behaviour among youths aged 15-24 years using socio-economic and demographic variables. The study however uses sexual behaviour indicators such as, non-use of condom, early age of sexual experience, multiple sexual partnerships to determine youth's risky sexual behaviours and explore the knowledge and awareness of RTIs/STIs. This study therefore analyses existing data from the Malawi Demographic and Health Survey (MDHS, 2010) to answer the research questions;

***What are the reasons for risky sexual behaviour among youths aged 15-24 years? And what knowledge do they have regarding Reproductive tract and sexually transmitted infections (RTIs/STIs)*?**

This research question will help us understand why youths are engaged in risky sexual behaviour, and their knowledge of RTIs/STIs. This research question is more relevant when one performs the study qualitatively and hypothesises when working quantitatively with specific questions such as;

- What knowledge do youths have with regard to RTIs/STIs?
- What knowledge do they have with regard to condom use?
- What are the barriers they encounter in accessing condoms?

- Are they aware that RTIs/STIs can be contracted during a sexual encounter where a condom is not being used?
- At what age do they engage in sexual activity?
- How many sexual partners did they have during their lifetime?
- What motivates them to use a condom? In addition, to what extent do they believe that using a condom will reduce the rate of contracting RTIs/STIs?
- To what extent do they believe that having more than one sexual partner increases the chance of contracting RTIs/STIs?

The research objectives were to explore;

- the age group 15 – 24 years, and youth's sexuality and sexual experience;
- examine the prevalence of non-use of condoms as a determinant of risky sexual behaviour.
- explore awareness to improve knowledge about preventive measures for RTIs/STIs.
- explore the determinants of early sexual experience, and multiple sexual partnerships among males and females.
- explore strategies that could help encourage youth not to engage in risky sexual behaviour.
- rural and urban variation was also explored in order to examine variation in behaviour among youths.

1.4 Research hypothesis

The sexual behaviour of youths varies with socio-economic and demographic characteristic.
Sexual behaviour indicators such as early sexual debut, inconsistent condom use, MSP are determinants of risky sexual behaviours among youths in Malawi.

1.5 Significance of the study

The research addresses an area of critical public health issues in sub-Saharan Africa. Using data from the Demographic Health Survey, this research aims at examining the determinants of risky sexual behaviour among youths (male and female) and their knowledge of RTIs/STIs. This research study therefore has the potential to inform the design of interventions aimed at reducing the key known drivers of RTIs/STIs among young people namely, early age of sexual debut, multiple and concurrent sexual partnerships and consistent use and non-use of condoms.

The result of the study will help provide basis for the implementation of responsible sexual behaviour among youths, especially within the academic milieu, and will help review the current situation in most clinics and hospitals in the study area. This will enable the development of a more reliable integrated programme in order to meet health needs of the youth. Training institutions and health care providers will use information from these findings to incorporate into their curriculum, thus ensuring health care providers are aware of STI issues related to young people. It would be an essential step in the development and implementation of programmes that are of benefit to organizations interested in promoting condom use and it access to young people. The findings will therefore be used together with findings from future surveys, in order to understand trends in behaviour over time. It may be useful to Government departments and other organizations promoting public health, especially those focusing on reducing STIs such as HIV, teen pregnancies, school dropouts, and risky sexual behaviours linked to alcohol and substance abuse. With the youthfulness of Malawi's population, where almost half of the population is under the age of 15 and 64% under the age of 24, it is therefore necessary that researchers put their focus on this critical issue to help reduce the spread of this epidemic.

1.6 Some Common RTIs/STIs

1.6.1 Introduction

Sexually transmitted infections (STIs), also known as veneral diseases, are common infections in most parts of the world, even the United States. It is a form of RTIs that affect the reproductive tract. Because of this, individuals need to think carefully before entering into a sexual relationship with either a man or woman. The continuous spread of these infections is an indication of our continuous careless participation in sexual activities, with lack of precaution among partners. The Center for Disease Control and Prevention has identified more than twenty types of STIs , with around 19 million infected persons in America each year. Syphilis has claimed the lives of all kinds of people from all walks of life, with HIV/AIDS being the most common life threatening RTIs/STIs. We can ask ourselves questions such as what are the most common RTIs/STIs and how are they caused? Are there ways that these diseases can be treated? Can it be treated or prevented? The only way to prevent these infections is to abstain from sex, but this option is not effective for young adolesecent males and females. Secondly, the other way is to settle down with one sex partner for the rest of our life. This is equally not working out in today's society. Thus, condom should rather be used if any of the above does not work out.

1.6.2 Chlamydia

This form of RTIs/STIs is the most common infection according to the Center for Disease Control and Prevention. A study carried out by the center in the United States shows that, a total of 1,244,180 cases of chlamydia was reported according to 2009 statistics (Center for Disease Control, 2012). This is the largest number of cases ever reported to the center with a 2.9 per cent increase from 2008. The increase could be as a result of an increase in screening, but could also be a serious cause for concern, since the bacterium 'chlamydia trachomatis' that causes chlamydia is transmitted through sexual contact. In Blantyre, an urban town in Malawi, the odds of chlamydia are very low with the number of chlamydia antigen cases reported to be 26 (5.2%) (Barbara, et al., 2008). However, chlamydia is not common among males, and its odds is very low. In the United States, about 2.2 per cent of Americans are believed to be infected by this virus, with majority of them not being aware of it. This infection is often symptom-free, and in females infected by the disease, they may have abnormal discharge or a burning sensation when peeing, lower back and abdominal pain, fever, bleeding or pain during sexual intercourse. They are more vulnerable than the male as it can cause pelvic inflammatory diseases and ectopic pregnancies – causes of infertility. In males, discharge, burning or itching around the penis may be noticed, and may cause inflammation of the testicles, prostate and urethra. This disease can however, be treated with antibiotics. Vitamin C added to the antibiotic doxycycline treatmalet, will help reduce discharge in females with chlamydia (Shiraz, 2009).

1.6.3 Gonorrhoea

It is another form of RTIs/STIs that is caused by the bacteria, Neisseria gonorrhoea. It is transmitted during vaginal or oral sex and infected males have symptoms, while females do not. In cases where females have symptoms, it is often mistaken for a bladder infection or other vaginal infection. For the males, a pus - like white discharge from the urethra is noticed –and a burning sensation during urination or painful swollen testicles. Females however, have milder symptoms such as bleeding and discharge between periods. This infection can be treated with antibiotics, and if not treated it can lead to epididymitis, a condition of the testicles that can cause pain and infertility. The rate of gonorrhoea in sub-saharan africa is low, especially among pregnant females with 0.02 in Gabon, 3.1 % in the Central Africa Republic, and 7.8% in South Africa (Barbara, et al., 2008). A study of patients with urethral or vaginal discharge indicates that, the rate for this disease is 5.7% in Benin, 8.1% in Tanzania (Barbara, et al., 2008), and 17.1% in Malawi. The rate among symtomatic patients in Africa ranges from 5.7% in Benin to 17.1% in Malawi. In the United States, the actual number of cases each year is believed to be closer to 820,000 despite 570,000 cases reported (CDC, 2011). Untreated children may suffer from blindness, and based on historical data, about 3% of newborns with the disease will develop complete blindness, and 20% will suffer from corneal damage to some extent.Therefore, since the symptoms of this disease may not be present, someone who is at risk needs to get tested in order to know whether they are infected or not, and this is often done through a urine test or taking a specimen from the infected area. Using a condom consistently from the very onset of sexual intercourse until the end will therefore help reduce the rate of transmission.

1.6.4 Syphilis

It is a form of STI that can be controlled by public health measures because of the availability of a highly sensitive diagnostic test and a highly effective and affordable treatment. If syphilis is left untreated, infected persons will experience fever and general malaise, loss of hair and mild hepatitis. In sub-Saharan Africa, the rate of syphilis among pregnant female varies from 2.5% in Burkina Faso, to 17.4% in Cameroon. In Malawi, (Victor, et al., 2006) found that maternal syphilis was associated with the risk of HIV among mothers with active syphilis. The rateof syphilis in Western Europe has decline drastically since the highest rate which was experienced during the Second World War, with incidence rates below five per 100,000 in most countries.In the United States, however, the trends began declining in 1992 after an increase that was noticed during a national syphilis epidemic in 1980s and early 1990s. The rate of congenital syphilis declined from 78.2 in 1992 to 20.6 per 100,000 live births in 1998 (WHO, 2001). In 2009, a total of 13,997 cases of syphilis were reported in the United State according to a surveillance of STIs performed by the Center for Disease Control and Prevention. Overall the rate declined by 89.7 per cent during the period of 1990 – 2000, but has increased since 2001 every year. Syphilis is thus caused by the bacteria Treponema pallidum, which penetrates chafed skin or mucous membranes.Complications include sores on the skin, which can transmit the infection when touched, fever, muscle pain, sore throat, flu-like symptoms, rash, headaches and swollen lymph nodes. However, it can be treated using antibiotics. If left untreated, an infected person may suffer from brain damage and damage to major organs or the cardiovascular system.

1.6.5 Trichomoniasis

Also known as “trich”, trichomoniasis is a very common sexually transmitted infection that is caused when an individual is infected with a protozoan parasite known as Trichomonas vaginalis. The symptoms of this infection vary and infected persons, both males and females cannot really tell if they are infected or not. Its rate is higher in sub-Saharan Africa; and it has been regarded as a cofactor for HIV transmission (Matthew, et al., 2004). Although trichomoniasis is a common STI, the data on it rates and incidence are limited. However, this infection is associated with adverse birth outcomes such as premature delivery and low birth weight. A study in Malawi shows a rate of 20.8 per cent with symptomatic males and 12.2 per cent being asymptomatic. In the Democratic Republic of Congo, trichomona vaginalis among HIV positive and negative females was twice as common in HIV sero-positive females. Among pregnant females in Africa, the rate ranges from 9.9% in Central Africa Republic to 41.4 % in South Africa (WHO, 2001). An estimated 3.7 million people have been reported infected in the United States, with just 30 per cent that develop a symptom. The parasite that causes this infection is transmitted during sexual intercourse with infected persons. However, about 70 per cent of persons infected by this disease do not have any symptoms or signs, but when it does occur, an infected individual can experience mild irritation to severe inflammation. Moreover, people who have symptoms get them within 5 to 28 days after they have been infected. An infected male may feel itching or irritation inside the penis, burning after urination or ejaculation, or might have some discharge from the penis. Females on the other hand, may notice itching, burning, redness or soreness of the genitals, discomfort with urination or may find a thin discharge with an unusual smell that can be clear, white, yellowish or greenish. A single dose of antibiotic, either metronidazole or tinidazole will treat this parasite. However, the rate of spread of this parasite could be achieved by using latex condom every time you have sex.

1.6.6 HIV/AIDS

This is another type of sexually transmitted infection which is common worldwide, with sub-Saharan Africa reporting the highest spread. However, the Human Immunodeficiency Virus (HIV) is the virus that causes the illness Acquired Immune Deficiency Syndrome (AIDS). In Malawi, the odds rate among adults is one of the highest in the world, with the epidemic spreading widely. However, females are disproportionately affected by the epidemic, with approximately 500,000 females, 15 years, and older living with the virus (Amelia, et al., 2003). The odds rate is higher in urban areas (20.4 per cent) than in semi-urban (17 per cent) and rural areas (13 per cent). The

Southern region of Malawi with its dense population has the highest odds rate of 21.7 per cent. The Northern and Central regions have odds rates of 14 per cent and 14.3 per cent respectively among pregnant females. However, the rate of this virus has dropped due to improved awareness of sexually transmitted infections, AIDS messages with improvement in abstinence and consistent use of condoms. Thus, a survey conducted by the National Aids Commission and the Department of Nutrition and HIV/AIDS in Malawi indicates a drop in the rate from 11.4% in 2008 to 10.6% (Inter press, 2014). However, the prevalence is still high in Southern Malawi (14.5%) against 7.6 and 6.6% for the Central and Northern regions respectively, with the rate for females being higher, especially those with secondary education and above (16.3%).

1.6.7 Hepatitis

It is a group of viral infections that affect the liver. "Hepatitis" means inflammation of the liver, and the most common types are Hepatitis A, Hepatitis B, and Hepatitis C. Hepatitis A is caused by infection with Hepatitis A Virus (HAV), and it has an incubation period of about 28 days. The infection however, produces a self-limited disease that does not result in chronic infection or liver diseases. Hepatitis B is caused by infection with the Hepatitis B virus (HBV), and it has an incubation period of five to twenty – two weeks. This is the period when you are exposed to the virus and the start of your symptoms. It is very common in sub-Saharan Africa, and can be acute or chronic depending on how long a person has it. Symptoms of HBV are similar to that of flu, and include; mild fever, tiredness, aching limbs and joint pains, loss of appetite, feeling sick and vomiting, reluctance to drink alcohol or smoke. It can be spread by; having unprotected sex; through open wounds; from contaminated tattooing equipment's that are not sterilized, or sharing razors or toothbrush that are contaminated with a small amount of infected blood. A study conducted in Lilongwe Central Hospital in Malawi, indicates that over 16% of pregnant females in rural Malawi were infected with Hepatitis C virus (HCV), with the odds rate higher among the males with low risk for sexual transmission (M J Maida et al., 2001). Hepatitis C is caused by infection with the Hepatitis C virus (HCV). It is a common cause of liver inflammation just like any other hepatitis, but most infected persons are not always aware that they are carrying the virus. It is however, transmitted from one person to the other through blood to blood products that are infected with the virus, by sharing needles with infected persons; using non-sterile instruments and needles for tattooing and body piercing, engaging in high risk sexual behavior, such as having multiple sexual partners or not using condoms during sex with an infected person. Despite the low risk of transmitting HCV, having a sexually transmitted infection will increase the risk of sexual transmission of HCV infection. A pregnant woman's risk of transmitting this virus to her baby is also low.

1.7 Definition of keywords in the study

1.7.1 Sexually transmitted infections (STIs)

It is an infection passed from one person to the other through intimate sexual contact. Sexually transmitted infections are also called veneral diseases, and can be transmitted if one has intimate sexual contact with someone who already has the infection. It is therefore difficult to tell if someone is infected by an STI since many STIs have no symptoms. It is spread during vaginal, anal or oral sex or during genital touching. Some STIs could be contracted without having intercourse.

1.7.2 Youth

The term 'youth' according to Macmillan Dictionary, is the time in life when one is young, but often means the time between childhood and adulthood. Dictionary.com defines it as the appearance, freshness, vigor, spirit of one who is young. However, defining a specific age range varies since youth is not defined chronologically as a stage that one can attribute it to a specific age ranges (Furlong, 2012). Youth therefore is an experience that may shape an individual's level of dependency, which can be marked in various ways based on different cultural perspectives. Based on the current study, the word youth refers to people aged 15-24 years who are sexually active.

1.7.3 Sexual behaviour

Humans experience and express their sexuality through sexual behaviour. It is therefore any kind of sexual activity that can be solitary, between two persons, or in a group that induces sexual arousal. Sexual behaviour can therefore be classified based on the number and gender of the participants. Behavior that involves just one individual is describe as solitary, while one that involve more than one person is known as socio-sexual.

1.7.4 Condom usage

A condom is a thin rubber tube with which a man covers his penis during sex in order to prevent a woman from getting pregnant or from contracting sexually transmitted infections during intercourse. It is put on an erect penis and physically blocks ejaculated semen from entering the body of a sexual partner. Condoms are also used for collection of semen for use in infertility treatment. This thesis refers to the male condom for the purpose of this study.

1.7.5 Acquired Immune Deficiency Syndrome (AIDS)

It is as a collection of diseases and symptoms that are contracted because HIV has weakened the immune system. An individual is said to have AIDS when their CD4 cell count is less than 200 per micro-litter of blood.

1.7.6 Human Immunodeficiency Virus (HIV)

Microorganisms that are transferred through infected body fluids like vaginal secretions, semen, and blood and breast milk are described as viruses. While in the blood, they replicate themselves and kill white blood cells, t-cells and the CD4 cells of the body's immune system thereby weakening the immune system. Once they increase in the body, the CD4 cells decrease, the immune system becomes weakened, and the person becomes more prone to contracting diseases.

1.7.7 Knowledge

Collins English Dictionary defines knowledge as facts, feelings or experience known by a person or group of individuals. It is the awareness and consciousness gained by learning specific information about a subject. It can thus be gained through experience, media and interaction with others such as friends, colleagues, health workers and parents. Knowledge can therefore be factual or a myth, based on the origin of the information. Knowledge can therefore be of different forms, conceptual, declarative, episodic, procedural, and descriptive knowledge (Byners, 2001).

1.8 Thesis structure

This thesis explores the determinants of youth sexual behaviours and knowledge of reproductive tract infections (RTIs) and sexually transmitted infections (STIs) in Malawi, using data from the 2010 Malawi Demographic and Health Survey. It is divided into seven chapters, which include an introduction, literature review, conceptual framework, description of the methodology, results, discussion and a concluding and recommendation chapter. The first chapter presents the contextual framework of the study with emphasis on the concept of sexual behaviours and the risk associated with such behaviours. This chapter also presents some common sexually transmitted infections, and definition of keywords. The second chapter presents the literature review of the study and it presents a comprehensive review of recent studies both national and international in the field of reproductive tract infections (RTIs) and sexually transmitted infections (STIs). Chapter three presents a detailed examination of the study context, the source of data, sampling strategies, and the processes of data collection. It also presents the statistical analysis used in the study, and it gives a broad outline of the statistical test used in the study, the definition of variables, and the limitations of the study. The fourth chapter presents the socio-economic and demographic findings. It also presents a descriptive analysis of respondents in the study, and the association between the dependent and independent variables using the bivariate analysis. Chapter five presents the multivariate analysis, where the variables were significant at $p<0.001$, $p<0.01$, and $p<0.05$. Chapter six presents the discussion from the study findings and the last chapter presents the recommendation and conclusion.

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents related findings to the research study with respect to the sexual behaviour of youth in Malawi, and knowledge of sexually transmitted infections (STIs). Research has shown that quantitative researchers cannot conduct their studies in an intellectual way without employing existing literature. Literature therefore encompasses all written sources found relevant to the research topic, and it is an organized written presentation of what scholars have published. It is not however, a list that describes or summarizes one published study after the other, but rather a critical analysis of the literature available on that research topic (Burns, et al., 2005). Researchers therefore relay information solely based on the results of their predecessors, thus conducting a research without considering previous methods and results would be impossible.

2.2 The youth and sexual behaviour

The time of life between childhood and adulthood is often used to describe youth. Defining a specific age range that constitutes youths vary, as an individual's actual maturity may not correspond to their chronological age. However, as they become mature, either their sexual behaviour is affected by their state of mind or they become interested in sexual activities. Sexual behavior is therefore influenced by an individual's psychological attitude, especially your inner thinking with regard to sexual, socio-economic, biological connotations, cultural environment, and religious beliefs. Based on this study, the term youth is used to define individuals within the age group of 15 – 24 years. This age bracket is regarded as the most influential stage in the development of an individual, and it is at this stage that individuals undergo changes in life; youths become involved in many activities like drugs, alcohol consumption, and change of sexual lifestyle and involved in risky activities including sex. The sexual behaviour of youths is therefore described as risky because of their continuous involvement in early sexual activities, substance abuse, and inconsistent use of contraceptives. There is a need for additional information regarding youth's sexual behaviour, especially when studying issues related to sexuality and sexual behaviour among a special group of people in general and among never-married youths in particular. Because of the numerous incidences of sexually transmitted infections (STIs), it has been argued that, the attitudes and beliefs of young people towards sexuality are becoming more liberal and that they lack the correct knowledge about sexuality, contraception and STIs (Audinarayana, 2010). As a consequence, the impact of reproductive tract infections (RTIs) and sexually transmitted infections (STIs) has caused a huge burden of ill health on a greater proportion of the population especially among the age group of 15-24 years, and it has been estimated that about 340 million new cases will occur (UNAIDS, 2010). Early diagnosis and treatment will therefore reduce its complications and life – threatening effects such as infertility, foetal wastage, and even low birth weight among youths. Individuals with these infections have more risk of acquiring HIV from an infected partner and a person infected with both HIV and another STI has a much higher risk of transmitting HIV to an uninfected partner. Thus, the risk of HIV transmission may be higher in the presence of an STI, and as such, it has remained a challenge among most youths in sub-Saharan Africa as their value is undermined by the high transmission rate of STIs and early pregnancies (Olusheyi, et al., 2010). There is an urgent need to control these infections since it has been recognized as independent risk factors for STI transmission.

In Malawi, certain cultural practices influence youth's sexual behaviour and attitudes toward sexuality. The socialization process which involves various forms of initiation has a serious impact on how youths understand sexual activities, and considering the fact that the society condemns premarital childbearing and values virginity, young people think that initiation ceremonies mark their transition to maturity. Initiation ceremonies therefore reinforce the dominance of males and the subordination of females in sexual relationships, thus weakening female's autonomy and latitude to negotiate for safer sex. It has however been evident that, with the influence of religion, schooling and exposure to media, the effect of traditional socialization systems on youth's sexual behaviour is gradually dying out. Although premarital sexual activity is disapproved of in most Malawian communities, studies have shown that most young males and females initiate sex at an early age. Early initiation of sexual activity before the age of 14 years is more likely to be associated with having a casual sex partner, and less likely to be associated with condom use at first sexual relation (Yode, et al., 2012). This association however, varies by gender and delaying the onset of sexuality among adolescents could help protect them from risky sexual practices. Thus, sexual and reproductive health programs that advocate abstinence are likely to have few positive effects on young people. Early sexual debut places youth at a much higher risk of contracting sexually transmitted infections, with females more vulnerable than males. It has been evident that, among youths aged 15 – 24 years,12 per cent of females and five per cent of males had sexual intercourse before the age of 15 (UNAIDS 2005; WHO 2006). A further study in rural Kwa-Zulu Natal in South Africa shows that 13.1 per cent of 15-24 year old boys had sex by the age of 15 (Harrison, et al., 2005), and among those aged 14-35 years old, almost 50 per cent are sexually active by the age of 16 (Liberty, et al., 2003). A household survey conducted among youths indicates that, 16.5 per cent reported having sex by age of 16. Among those aged 15-24 years; the majority have had three or more sexual partners in the last three decades with an early sexual debut (Harrison, et al., 2005). However, low level of schooling, pressure from peers to experiment with sex, and the fact that most sexually active youths are from poor economic backgrounds (Alister, et al., 2004), contribute to early sexual activities. Moreover, information from friends also contributes to young people initiating sexual activities at early ages. Those that earn money from sexual practices, especially in the urban centres, tend to persuade their friends to also engage in such practices. Thus, young ladies in the city become influenced by the attitudes of friends who often discuss the way they make money from sex. Housing and food deprivation, and the desire to access health care and fashionable goods such as the latest hair style or clothing styles and cellular phones has been evident in influencing adolescent male and female's decisions to engage in transactional sex (Kamndaya, et al., 2015). However, in some Malawian cities, housing insecurity, particularly homelessness, is associated with young men's involvement in different forms of risky sexual behaviours including transactional sex (Mandalazi, et al., 2013). Similarly, findings among out-of-school youths in Lagos, Nigeria found that, food deprivation was a significant predictor of the timing of onset of sex and involvement in multiple sexual partnerships among adolescents (Kunnuji, 2014). However, the sexual activities of poor girls who drop out-of-school could be explained by their desire to overcome food deprivation.

In Lilongwe, the capital city of Malawi, exchange of sex for money by sex workers has increasingly become one of the simplest means of making money and acquiring material possessions among young girls, with 61% of young sex workers depending solely on money from sex work for a living (Kalanda, 2010).Those that copy the attitudes of their friends become exposed to sexually transmitted infections. Some sex workers are subjected to unprotected sex because of the inability to access condoms and pressure from their clients who have opted to pay more money if they have sex without condoms. This facilitates the spread of sexually transmitted infections, increases the rate of unwanted pregnancy, thus leading to young motherhood or unsafe abortion. These young adolescents are aware of sexually transmitted infections, its transmission, signs, and symptoms, but they have no option since it is a popular trade and regarded as an easy way of making money and obtaining other material things. However, educated elites in Lilongwe have explained that the interaction of the bureaucrats and the activists with donors have helped in the formulation of policies and strategic plans through which elites are exposed to western interpretations (Luke, et al., 2002). The Malawi government in the course of developing a strategic plan for the fight of STIs especially HIV, emphasizes that, females should be aware of their vulnerability to infections with special emphasis on young people living with the disease, children and females. Females therefore need to be empowered to protect themselves against infections, and programs that target female, youths, and other marginalized groups of people need to be strengthened to reduce this pandemic. The likelihood of high-risk sexual behavior is higher among never married males, with sexually active youths exposed to a high risk of unwanted pregnancy or contracting sexually transmitted diseases (Michelle, 2008). Early sexual debut however leads to greater exposure to risky sexual behaviours such as unprotected sex, alcohol consumption, and smoking, and the rate at which teens get involved in sexual intercourse before the age of 16 years is a call for concern in order to avoid the risk of contracting sexually transmitted infections.

Studies have shown that 10 to 30% of sexually active youths have more than one sexual partner at a given time, with more males than females engaging in concurrent multiple partnerships (Liberty, et al., 2003). However, harsh realities of economic need may cause a woman to seek outside partners. Young girls and boys accept unreasonable sexual demands of males and boys because of poverty and a combination of this with outdated cultural practices forces young girls and boys out of school to get married to older males (Banda, et al., 2003). Meanwhile, the majority of female's sexual partners are greatly determined by their financial status (Linda, 2007) and females look for males who are rich or wealthy and other specified categories of occupations related to income, thus sexual behavior among the youths are at risk of sexually transmitted diseases. Across various cultural groups within sub-Saharan Africa, the gap that exists in the social and economic conditions between males and females is very wide, especially that defined within families. Females are often regarded as subordinate to males and are socialized to be obedient and tend to their families. Thus, the prevalent of violence against them and other young females is problems that is compounded by the status of female in the society, and have lead them with little or no negotiating power on matters related to their sexual health. The transmission of STIs among young girls is affected by gender imbalances since the males are in control of most relationships. Research has shown that, gender inequality is relevant in the transmission of STIs such as HIV since it reduces women's negotiating power for condom use in a relationship (Audrey, et al., 2004). Moreover, it is a social factor that places most females at a greater risk of STIs due to their inability to avoid risk taking behaviour due to cultural practices, social norms, and gender inequalities (Asante, et al., 2014).

In the United States, youths begin sexual intercourse at the age of 17 years, get married at 25.1, and have their first child at the age of 26 years (AGI, 2000). As a result, many young females become pregnant and bear children during their teenage years, with 9% of female youths aged 15 – 19 years becoming pregnant each year; 5 per cent give birth, 3 per cent have induced abortions, and 1 per cent has miscarriages or stillbirths (Henshaw, 2001). This thus results in about 900,000 teenage pregnancies every year, which is overwhelmingly unintended, thus reflecting substantial gaps in contraceptive use, with most of them becoming mothers by the time they get to their 20's. Youths aged 15 – 19 years who have ever had intercourse was 15%, which is slightly lower than the level among adolescent males (55%). Among adolescents aged 25-44 years, (Chandra, et al., 2013) found that about 98% of women and 97% men had vaginal intercourse, and 89% women and 91% men had oral sex with an opposite sex partner. Moreover, he found a correlation of sexual attraction and identity with sexual behaviour. Young people who are suffering from a particular infections are likely to transmit infections to others, particularly those with do not reside with their biological parents. In a recent study, (Tassiopoulos, et al., 2013), found that, 28% of young people in the United States who suffer from Perinatal HIV positive ($PHIV^+$) initiate sexual intercourse at the age of 14 years, with 62% having unprotected sexual intercourse. Those with relatives other than their biological parents were more likely to engage in unprotected sex than those living with a non-relative. However, it has been evident young people are excited to experiment sex in the United States. (Eaton, et al., 2012) found that 47.4% of young people in schools had ever had sex, with 15.3% having sexual intercourse with four or more partners during their sexual life, and 60.2% had used a condom during the last debut. Sexual behaviour trends have declined in terms of age at first intercourse with more youths initiating sexual activity at an early stage. The proportion that engages in premarital sexual intercourse has risen from 32% to 38% within a five-year period, and among youths aged 20 – 24 years, 63% had intercourse by the age of 20 years (Sanders, et al., 2012). In Malawi, poverty and income level greatly determine the youth's sexual activity, with those from low-income families more likely than those from higher income families to be sexually experienced (MDHS, 2010). It has been evident that, 61 per cent of youths from families below 150% of poverty level have had intercourse compared to just 49% of those from families whose income is 150 – 299% of poverty, and 47 per cent of those at or above 300% of poverty (Jennifer, et al., 2001). Therefore, individual's inability to afford her basic needs and exposure to the media, especially in the cities, will definitely force young people into sexual activities especially in cases where sex could be taken as a profession (Oyediran, et al., 2011).

2.3 Condom use

A condom is a barrier device commonly used during sexual intercourse to reduce the probability of pregnancy and the spread of sexually transmitted infections (STIs) such as HIV/AIDS. Although most young people perceived themselves to be at risk for RTIs/STIs, majority still do not use contraceptives in order to prevent the transmission of these infections. During the course of the first sexual encounter, among most people, especially the youth, about 50 per cent do not use condoms (Shafii, et al., 2004). In cases where condom is being introduced, it is often used for a short while or is completely stops as the relationship develops. This therefore creates a precedent in determining the sexual pattern of youths during their entire sexual life, thus creating an increased likelihood of contracting STIs, unwanted pregnancies, and health-related problems. However, during most sexual relationships, the condom is often introduced at the initial stage, and the rate is however lower, especially in relationships that involve young males and females with older partners (Audrey, et al., 2004).This facilitates the spread of sexually transmitted infections among youths, especially in situations whereby an infected woman gets involved in unprotected sex after meeting with an infected older partner.

In Malawi, the acceptability of condom use within marriage and actually using it with a spouse whose HIV status is known, depends on the perceived HIV status of the respondent and the spouse (Fedor, et al., 2015). Knowledge of condom use as a form of reducing the spread of sexually transmitted infections is very widespread among youths. The 2000 Demographic health survey (DHS) indicates a universal increase in the result for both males and females within the same age groups, from 96-99% for females and 95-100% for males (MDHS, 2000). However, knowledge of where to get condoms is relatively higher among older boys and girls than younger ones, those with many more years of schooling, those in urban areas, and those with greater exposure to media. Condom use reduces the spread of HIV and other sexually transmitted infections among youths, and despite its acknowledgement to be effective in preventing the spread of STIs, the rate of its use in sub-Saharan Africa is still low and inconsistent with less than 15% use in Tanzania, Malawi, and Ethiopia among those aged 15-19 years (Wembua, 2000).The level of condom knowledge in Malawi is therefore not commensurate to its use. While surveys show that the level of condom use is quite low, a marked increase has been noticed during the past decades, especially among adolescent males. Adolescent males aged 15-24 years who reported using condoms for family planning increased from10 to 13% in 1992, and 21% in 2000 respectively, with a much lower rate reported among females (MDHS, 2000). Condom use is therefore much lower among married males and females compared with their sexually active single counterparts because of the assumption that condoms are meant for unstable sexual relationships and using them within marriage brings tensions and suspicions regarding unfaithfulness (Zulu, et al., 2003). A similar study carried out by (Exavery, et al., 2012) found a prevalence of condom use of 12.2% among married women and 54.9% among unmarried women in Tanzania.

A study in the cities of Lilongwe and Blantyre shows that among adolescent males that had used condoms, 83% did so with girlfriends, 21% with girlfriends and casual partners and 21% with casual partners only, and among young females, 83% used condoms with boyfriends, 3% used condom with boyfriends and casual partners and 6% with only casual partners (Alister, et al., 2004). The variation in condom use among boys and girls therefore indicates that many boys may be using condoms with irregular partners outside their own age range. Furthermore, in a study carried out by the National Youth Council of Malawi in 2000, 33% and 43% of boys and girls reported condom use during their first penetrative sexual intercourse. In another study carried out by (Maluwa, et al., 2001), about 30% of young people in Nkhata Bay reported they had used a condom during their first sexual intercourse. In a recent study of some selected secondary schools in Zomba, Malawi, (Marisen, 2014) found that most (65.5%) young people did not use condom during the last sexual debut due to misconceptions, scepticism, myths, rumours and negative symbolism across the community, and the stigma from some service providers in reproductive health centres. It has been evident that, couples with discordant reports of relationship satisfaction had marginally increased odds of condom use twice those of couples in which both partners were very satisfied (Wildsmith, et al., 2015). However, feeling that one’s sexual partner was not getting an equal deal in a relationship, such as the issue of the male partner’s drinking habit and the belief that one’s partner had had another partner, reduces the prevalence of condom use. Moreover, females with depression used a condom far less often than their male counterparts. Condom use is therefore less among people with depression (Islam, et al., 2015) and this is an indication that depression reduced the odds of condom use in latest sexual intercourse both in males and females. However, enrolment in higher education, having completed an education of more than 15 years and being a female respondent, with parents that had attained higher educated, was associated with condom use, with more males than females (Jørgensen, et al., 2015). Lower condom use and inconsistent use facilitate the spread of reproductive tract infections, HIV and other sexually transmitted infections.

Misconceptions that condoms inhibit the enjoyment of sex, causes sores on the penis, that condoms can come off inside a woman's womb, no awareness of condoms, condoms not available, rumours and fear of side effects, and it is a sin to waste semen and prevent pregnancy, are very common conceptions that hinder these young males and females from using it (Marisen, 2014). Moreover, (Ghimire, et al., 2011) found in Nepal that lack of self-efficacy among intimate partners and regular clients was a major risk factor for non-use of condom among female sex workers. Moreover, poor quality services such as negative attitudes of family planning providers toward young people and the unavailability of condoms, fear of disclosure or exposure, difficulties in expressing need especially to adults and the fact that they can't negotiate condom use in most relationships, hinders young people from using condoms. It has been evident that most service providers are not youth friendly (Maluwa, et al., 2002), and as such youths tend to develop fear when they are in need of contraceptives; some service providers feel very uncomfortable providing condoms to a young and unmarried person because it may contradict certain cultural beliefs and because some of them feel that offering contraceptives mean one is promoting sexual activity. Youths therefore develop fear or stigma when they seek contraception because those who seek contraception are regarded as promiscuous (Chonzi, 2000). Any fear and misconception is associated with lack of adequate information concerning reproduction and sexuality within the community. For instance, young people have the fear that oral contraceptives can cause cancer and other illnesses, and contraceptive use before having a child can cause impotence or infertility and condom use gives the impression of mistrust or unfaithfulness. However, to ensure that they are protected from sexually transmitted infections and unplanned pregnancies, they need to be informed about the proper and consistent use of condoms, though encouraging young people to use condoms will be considered that an individual is promoting sexual activities among them (Rupali, et al., 2012). It has been evident that, about 70% of young males and females who had ever used a condom will confirm that there have been times when they had sex without a condom (NYCOM, 2000).

Among certain religious group such as the Catholics and some Evangelists, condom use is strictly prohibited and it is ascertained that condom fuels promiscuity (Kaler, 2004). Most often, condom use is introduced at the very first sexual encounter, and this usually stops at a later stage during subsequent sexual contact when the relationship deepens with the assumptions that using a condom will mean distrust or lack of intimate love. It has been evident that, condom use reduces the spread of sexually transmitted infections. In a study of 12 – 19 years among primary and secondary school students in Mwanza, Tanzania, 30 per cent of the students agree that, condoms help reduce the rate of sexually transmitted infections among those that were informed of STIs and the use of condoms, and that, age and knowledge of partner's HIV status were the strongest predictors of consistent condom use (Conserve, et al., 2012). Similarly, (Kigombola, 2005) found among secondary school and college students aged 16-24 years that, 35% of those who had multiple sexual partners in the previous years did so without using a condom. In another study, (Rakotoniana, et al., 2014) found that 93.1% churches are willing to share their knowledge of HIV/AIDS with their congregations, 91.8% knew that HIV could be sexually transmitted, 27.7% knew condom could help prevent STIs. This will help encourage the use of preventive measures so as to reduce the spread of RTIs/STIs among young people.

Within the developed economy, a great variation in condom use has been evident to be a reason for high teenage pregnancy reported in some developed economies. In the United States, the overall current use of condoms by adolescents has been estimated to be 38% among all sexually active teenage females who are at risk of unintended pregnancy and STIs (Jacqueline, et al., 2001). A recent study in the United States, found the risk of HIV and unintended pregnancy much higher among sexually active adolescents aged 15-24 years. Jones et al., (2012) found that, 18% of adolescent females aged 15-19 years who were at risk of unintended pregnancy did not use condom, compared with 9.7% of those aged 25-44years. The prevalence of non-use of condom was higher among black women (17%) compared with white (9.5%), Asian (10%), and Hispanic women (10%). This facilitates the spread of HIV and other sexually transmitted infections among this group of people. In Brazil, education on sexuality and reproductive health are based on addressing issues related to sexually transmitted infection prevention and unintended pregnancy, with more emphasis on young adolescents. Studies on sexual initiation and condom use have shown that most young people do not use condoms when they begin an early sexual life and they tend to describe it as casual relationships, and this is similar with those who engage in sexual relationships with older partners (Narring, et al., 2000). It has been evident among the adult population that there is a significant difference in condom use with regard to the type of relationship with the partners- defined as either casual or fixed/steady (Jenkins, et al., 2002). In Brazil, the government has since the 1990s focused on the promotion of condom use and the reduction of the number of sexual partners among young people as its national policy for the reduction of sexually transmitted infections (Vera, et al., 2008). However, compared with other age groups, young people have shown that they are more regular users of condom in Brazil than any other age group (Calazans, et al., 2005). This increase in condom use among youth is an indication of a generation who began their sexual lives at the time of the introduction of STI prevention campaigns. Although it has been evident that age at first sexual intercourse and condom use at first intercourse greatly determines an individual's desire for condom use, the region of the country in which the person lives, the level of schooling, sex and skin colour also have an impact on condom use in Brazil.

It has been evident that non-use of condoms or the inconsistent use of condoms makes life difficult and risky for the youths, as they become victims of several negative sexual and reproductive health outcomes such as RTIs/STIs, unplanned teenage pregnancies, and unsafe abortions. Inconsistent condom use is infrequent among adolescents, and this varies with age as respondents in the younger age group are more likely than those older to report having used a condom the first time they had sex, having used a condom the last time they had sex with their first partner and having always used a condom with their first partner (Audrey, et al., 2009). Consistent use of condoms during all sexual encounters has been identified as a major step in reducing the spread of sexually transmitted infections. Knowing that condom use has been realized as one of the three most emphasized measures of preventing STIs since its emergence, alongside abstinence, and being faithful (one partner), condom use has been associated with declining STIs numbers in some countries such as Zambia (Fylkesnes, et al., 2001) though some authors have made statements that are contrary to that. Low condom use on the other hand, has been associated with an increase chance of contracting STIs (Audrey, et al., 2004). Although studies in sub-Saharan Africa reported some stability in the number of new STIs cases, there are still high figures' occurring, every year, and sub-Saharan regions continue to suffer especially the youths (UNAIDS, 2009). Statistics regarding the use of condom in sub-Saharan Africa differs within studies and between different population groups. For instance, a national survey of sexually transmitted infections including HIV rates indicate that 57% of males and 48% of females had used a condom during the last sexual debut, and a further study indicates that condom use at last sexual encounter was around 50-60% for males and about 40-50% for females (Audrey, et al., 2005).Young males and females are encouraged to use condoms consistently and effectively through numerous campaigns in order to reduce the spread of sexually transmitted infections, yet the greater proportion of youths still do not use contraception. This has been attributed to increased alcohol consumption, drugs and substance abuse and it has been evident that individuals who are under the influence of these substances do not make use of contraceptives (Hutton, et al., 2013), thus facilitating the spread of RTIs/STIs. Initiating health-risk behaviour such as risky sexual activity, and substance abuse at an early age leads to risky sexual behaviour in the future, thus facilitating the spread of sexually transmitted infections while reducing educational attainment and economic productivity. Early initiation into risky health activities is associated with longer periods of risk taking in early adulthood, and may be a marker for risk taking in adulthood.

2.4 Multiple and Concurrent sexual partnerships

The vast majority of adolescents with newly infected HIV and other sexually transmitted infections in sub-Saharan Africa acquire the virus during unprotected heterosexual intercourse (including paid sex) or as new born and breastfed babies (through mother to-child transmission). Having unprotected sex with multiple partners and having other sexually transmitted infections, especially genital ulcers caused by herpes simplex virus type 2, are the greatest risk factors for HIV infection among adolescents. Individual's risk of contracting HIV/AIDS/STIs therefore depends on his or her own sexual behaviour (Dimbuene, et al., 2014). Overlapping sexual networks speed up the rate of HIV transmission among sexually active youths and boost the scale of the HIV epidemic, especially among those in sub-Saharan Africa (Boyer, et al., 2010). Nevertheless, empirical evidence supporting the importance of concurrency among adolescents remains weak (Torpey, et al., 2010). Recent studies have found a very strong relationship between people having had more than one sexual partner and living with HIV but found no association between concurrence in men and HIV incidence in women or between concurrency and HIV prevalence among men (Killam, et al., 2010). Meanwhile, increasing evidence shows that, as mainly heterosexual epidemics evolve, increasing proportions of people who are newly infected with HIV are HIV-discordant cohabiting couples, in which only one person is living with HIV, and the transmission of HIV within long-term relationships is increasing (WHO 2007).

The number of sexual partners is an important indicator of sexual risk behaviour, especially when discussing issues related to sexuality and sexual behaviour among youths. In cases where partnerships overlap in time either where two or more partners continue over the same time, such a relationship is described as concurrent. A sexual relationship is considered concurrent if a person reports having two or more sexual partners in the past months (Adaora, et al., 2007). An adolescent who had multiple sexual partners often initiates first coitus at a younger age, and a greater number of lifetime partners than those who had only one partner. Similarly, those with multiple partners use condom less frequently, more likely to have ever performed oral sex, more likely to have received oral sex, and more likely to have been pregnant or caused a pregnancy compared with those who had one partner (G. Anita, et al., 2014). Individuals with multiple sexual partners are more likely to be HIV positive, and the risk of HIV infection is significantly higher among those aged 25-49 years old, with multiple sexual partners compared with those who had one sexual partner (Dorina, et al., 2014). Males are more likely than females to have multiple sexual partners (MSP) because MSP is associated with higher social status within the community, may be a source of power, and may even contribute to men's self-worth and defines manhood. Having multiple sexual partners increases the risk of contracting sexually transmitted infections. Concurrent sexual partnerships carry a much greater risk of transmission of STIs than the same number of sequential, non-overlapping multiple sexual partners. This is because having concurrent sexual partners in a dense sexual network increases the risk of STIs especially HIV, by allowing the virus to spread rapidly (Morris, et al., 2007). In relationships among non-overlapping sequential partners, the delay between ending one relationship and starting another one reduces the probability of STI transmission (Christopher, et al., 2004). Moreover, individuals with concurrent sexual partners increases the risk of transmitting RTIs/HIV/STIs among partners, while an individual's own risk of infection is the same whether the partners are serial or concurrent. Therefore, one's concurrent behavior may be correlated with one's own risk of HIV infection to the extent that his/her concurrency behavior is a proxy for partners belonging to a higher-risk sexual network (Mah, 2008). The risk of STIs is influenced by exposure to sexual contacts and unprotected sex with these partners. The greater the number of individual sexual partners an STI- negative person is exposed to, the greater the chance of encountering a person who is infected (Maria, et al., 2005). The risk of transmitting STIs will be increased if a person is involved in unprotected sex with a recently infected person. Adolescents with more than one sexual partner are less likely to use a condom at the last sexual intercourse when compared to those without multiple partners (Amon, et al., 2011). However, becoming infected with an incurable STIs or having an untreated STIs will increase the overall susceptibility to HIV infections. The risk of STI acquisition is influenced by the overall odds and thus high risk sexual behaviours have a low risk STIs acquisition in countries where there are low overall odds.

Studies carried out in Lilongwe, the capital city of Malawi indicate that, most partnerships were long and monogamous; with concurrent partnership being infrequent with long periods of overlap. Consecutive partnerships have short intervening gaps that could facilitate the spread of sexually transmitted infections. Partnerships where participants are regarded as spouses/cohabiting are often longer than partnerships with non-cohabiting girlfriends or boyfriend, transactional partners and casual acquaintances (Kimberly, et al., 2011). However, consecutive partnerships are associated with male sex partners who are married and not cohabiting. Most participants in health related studies report having only one partner throughout the survey period among most young Malawians. Thus, the number of recent partners is not the only determinant of youth's risky sexual behavior and STI acquisition, as STIs acquisition does not however depend on one's own behavior, but also on one's partner attitudes. Thus, identifying young people who initiate risky sexual behaviour based on self-reported number of sexual partners has been a widely used approach when studying the determinants of risky sexual behaviour and RTIs/STIs/AIDS. However, limitations such as the cross-sectional nature of data and short time period considered for the study often yield misleading information especially the case of HIV/AIDS (Dimbuene, et al., 2014). According to the 2000 MDHS, 16% of young males and only 2% females aged 15-19 years reported having had two or more sexual partners in the last 12 months preceding the survey (MDHS, 2000). Having more than one sexual partner was more common among those with less education, those who live in urban areas, and who are exposed to media at least once a week, than those who are more educated, live in rural areas and are regularly exposed to the media (Alister, et al., 2004). Young males tend to have more sexual partners than females irrespective of their marital status.

Young males and females enter into multiple sexual partnerships in order to have more latitude in choosing who to marry as they become mature. Irrespective of their intention, girls are more cautious than boys when it comes to having multiple sexual partners simultaneously, as it would lower their chances of getting married (Manlove, et al., 2014). Comparatively with other sub-Saharan Africa countries, the average period of a concurrent partnership among the youths varies greatly. In Tanzania, the mean partnership length is estimated to have varied from three months for non-marital partners (Nnko, et al., 2004) to 239 months for Ugandan spouses (Morris, et al., 2007).The level of polygamy within a concurrent partnership is limited and in line withthe relatively low level of polygamy reported in the population-based survey of Malawi (MDHS, 2004). Despite the limited number of concurrent partnerships, the occurrence of numerous consecutive relationships in rapid succession therefore suggests considerable transmission potential. Thus, those that have been in a marriage or who have travelled or been involved in transactional sex recently are more involved in concurrent partnerships. In a recent study of cohabiting couples in four sub-Saharan Africa countries, being faithful to the spousal partner(s) is associated with the lower likelihood of being HIV-infected (Mishra, et al., 2009b). This was because having sex with a non-spousal partner while cohabiting with another partner is akin to having concurrent sex; this therefore indicates that concurrency may increase the risk of STI infection (Lagarde, et al., 2001). On the other hand, in a high STI odds context, even relatively low risk sexual behaviours may result in a person encountering an STI infected partner. Moreover, where concurrency involve three partners, there is a high level of risk in such relationships especially if an infected individual has sexual intercourse during the acute transmission phase of STI, and there is a coincidence with the first few weeks of infection (Christopher, et al., 2004).

However, the impact of a concurrent partnership in increasing the spread of STIs may largely depend on overall odds of that epidemic and levels of condom use. Other contextual factors such as marriage patterns, odds of male circumcision, and other STIs odds demonstrate the role of concurrent sexual partnership in amplifying the spread of STIs within dense sexual networks (Doherty, et al., 2006). Some empirical research has also identified the association between concurrent sexual partnerships and an increased risk of sexually transmitted infections including syphilis and gonorrhoea (Gorbach, et al., 2005). Studies have shown that perceived susceptibility to STIs greatly increase especially in situations where people have concurrent sexual partnerships and when they continue over an extended period. Such partnerships are therefore the main contributory factor in producing high rates of HIV epidemics, as high levels of concurrency result in a highly concentrated and interlinked sexual network (Mah, et al., 2010). Age disparity between adolescent girls and their first sex partners is related to their own age at first sex. When a young girl has sex for the first time, there is a greater average age difference between her and her partner (Cherry, et al., 2009). Moreover, the greater the age difference between an adolescent girl and her first sex partner, the more partners she is likely to have during her teen years. Thus, when there is a greater difference between an adolescent girl and her first sex partner, the less likely she is to use contraception, and more likely she is to give birth when she is a teenager (Killarney, et al., 2013). The main cause of all these is greed, overwhelming desire, availability of sexual partners, quality of sex and possibility of economic benefits. To reduce the rate of infection, teens need to manage their sexual habits correctly by avoiding multiple sexual partners.

In the United States, concurrent partnerships were 5.7% according to reported cases, and the prevalence is much higher among younger age group 22-24 years than older respondents. Adimora, et al., (2011) found among monogamous partners in the United States that, concurrency was associated with age group, marital status, and being black. Majority of these young people gets pregnant and bear children during their teenage years, with 9% of 15-19 years becoming pregnant each year; 5% giving birth, 3% having induced abortion, and 1% having miscarriages or stillbirths (Henshaw, 2001). Sexually active females at younger ages are most likely to have two or more sexual partners than their older counterparts (Jennifer, et al., 2001). Educational attainment in the United States has been found to be associated with number of sexual partners, with more educated young people having fewer sexual partners than those with less education. Thus, concerns about teenage childbearing have shown that females who begin childbearing in their early age are less likely to achieve high levels of education and are more likely to have more sexual partners than their counterparts (Mwangi, et al., 2014). A further study found that, early childbearing is not only associated with multiple sexual partnerships, but poor socioeconomic status is also a contributing factor (Henshaw, et al., 2000). Similarly, about 13% men and 19% women have children with more than one sexual partner, and the prevalence was higher among those from disadvantaged background (Guzzo, 2014). However, people with multiple partner fertility were more likely to become parents at younger ages, largely with unintended first births, and often do so outside of marriage. In Great Britain, significant changes in demographic structure, social attitudes and public awareness of HIV/AIDS and sexually transmitted infections have been observed. However, for the interest of this study, the major changes have been an increase in the number of heterosexual partners and more concurrent partnerships. The number of sexual partners that young males and females have had during their lifetime varied enormously with more males than females having more than one sex partners over their lifetime (Wellings, 2001). Within the period 1990 and 2000, the average number of lifetime sexual partners increased from 8.6% to 12.7% for males and 3.7% to 6.5% for females in Great Britain (Johnson, et al., 2001). The proportion of males and females who have had more than one sexual partner at the same time has increased tremendously. Studies have shown that over 14 per cent of males and 9 per cent of females in the year 2000 had been in relationships with more than one partner compared to 11.4% and 5.4% in 1990. The proportion is however, higher among younger age groups, with 20% of 15-24 years old males and 15% of females in the same age group having concurrent partnerships (Wellings, 2001).This facilitates the spread of sexually transmitted infections among youths within the age group.

In China, though sexually transmitted infections are still concentrated among injection drug users, former plasma donors, sex workers and males having sex with males (Zhu, et al., 2005), there are indications that the epidemic is spreading from these high risk groups to the general population (Sheng, et al., 2008). However, it has been evident that almost half of all the new cases of HIV infection occurred through unprotected heterosexual encounters and multiple sexual partnerships. (Yan, et al., 2009) found from his study of female students in China that 18.1% had ever had sexual intercourse, with just 5.3% reported having multiple sexual partners (MSP) which constitute 29.3% women who have sexual intercourse. In a recent study, (Yingying, et al., 2011) found an increase in the prevalence of MSP from 8.1% in 2000 to 29.6%. Women with less education, who work in blue collar jobs and with lower social status, and reside in rural areas, were more likely to have MSP. Those with more education, holding management levels occupations, and reside in the cities were less likely to have MSP, but they have a higher baselines prevalence of MSP. This therefore suggests that change in MSP behaviour may occur initially among women with higher socio-economic status. Thus, safe sexual behaviour involved having a single sex partner and making use of contraceptives in every sexual encounter, as it helps reduce the risk of contracting STIs. As evident by (Huang, et al., 2014), the majority (63.18%) of young students in China are engaged in a single sexual partnership, while 29.3% reported having multiple sexual partners. This comparatively with other developed countries such as the United States is very low, probably due to their conservative attitudes as compared to multiple sex partner behaviour as only 11.47% are approved of or accept this behaviour. Therefore, the occurrence of multiple sexual relationships among young males and females in Malawi, other sub-Saharan African countries, developed countries and the BRICS economies in the absence of consistent use of contraceptives such as the condom, will exacerbate young people's vulnerability to HIV/AIDS and other sexually transmitted infections.

2.5 Early sexual debut and STI prevalence

Early sexual debut may increase the risk of HIV infections and other sexually transmitted infections, and in countries where the prevalence is high, such activities contribute to a substantial risk of exposure to sexually transmitted infections especially, HIV. The sexual behaviour that an individual is exposed to for the first time such as non-use of condoms, may set a precedent for future behaviours that increases the risk of HIV and other sexually transmitted infections (UNAIDS, 2010). Early sexual activity is therefore associated with an increased risk of sexually transmitted infections and unwanted pregnancies especially among youths. Despite the fact that the prevalence of early sexual debut is often considered to be higher among adolescents in sub-Saharan Africa, age at first sex is consistent worldwide; among young women in Africa, sexual debut occurs between ages 17-20 (Audrey, et al., 2009). The median age at first sex among young men and women in Malawi ranges from 18for males to 17 years for females (Misiri, 2014). In Nigeria, early sexual debut is a major health concern, especially among girls (Cortez, et al., 2015). While the median age at sexual debut for most women is about 18years, among adolescent girls, it is lower at 15 years and slightly higher at 16 years among boys aged 15-19 years (MDHS 2010). Males who are orphans experience their first sexual intercourse earlier than those who are non-orphans. Similarly, females and males who do not have sufficient food to survive experience their first sex earlier than those who live in food secure households (Mkandawire, et al., 2013). Females who are aware that condoms can help prevent the spread of HIV/AIDS experienced their sexual debut early, while young men who reject the issues surrounding the transmission of HIV and other STIs will experience their sexual debut later than those who did not. Family structure is an important determinant of an adolescent's sexual behaviour especially the girls. It has been evident that, adolescent girls are more likely to initiate debut early if neither parent resides in the household, either due to death or otherwise, and the absence of the living biological father from the home is associated with a higher risk of sexual debut, regardless of the presence of the biological mother in the home (Pilgrim, et al., 2014). Early sexual debut has been evident to be a determinant of multiple sexual partnerships among young people in sub-Saharan region. In South Africa, males are significantly more likely than females to initiate sexual activity early, with multiple sexual partnerships more common among them than those who had late sexual debut (Zuma, et al., 2014). In China, females who initiate sex earlier were more likely to have first sex with men who are not their boyfriends and less likely to take contraception, to use a condom at first encounter, and to use contraception consistently. Moreover, they are more likely to have multiple lifetime and concurrent sexual partners, to report pregnancy, and to be diagnosed with sexually transmitted diseases. Having more sexual partners and concurrent sexual partners were therefore more common among early than late initiators (Li, et al., 2014). Further evidence from China found that, adolescents whose parents had a junior or senior high school education had a lower risk of experiencing early sexual debut when compared with those whose parents had elementary schooling or less (Guo, et al., 2012). Early sexual initiation is associated with a high risk of HIV and other sexually transmitted infections. This risk has often been attributed to lack of adequate and correct knowledge about the transmission of STIs, including HIV/AIDS, its preventive measures, and the inability to successfully negotiate for safer sex during adolescent's first sexual debut. Moreover, a lower socio-economic position associated with lower educational attainment leads to increased risk of sexual behaviours such as earlier sexual debut and older sexual partners. Thus young women with insufficient food were at higher risk of HIV infections (Pascoe, et al., 2015). Although young people feel that they have the same amount of sexual experience like their peers, until they actually get involved in sexual intercourse, then they will realize that they are less experienced. While others feel they do not have as much sexual experience as their friends, their perception about sex indicates that they have more experience on average, than what they think is typical for their group of friends. Many sexually active teens do not very often consider themselves to be at risk of contracting STIs or getting pregnant despite the continuous efforts and education to inform them of the health risks and effects of sexual activity. Thus, the majority of them believe that their personal risk of contracting STIs and RTIs is very limited, while some believe their chances are very low.

The sexual and reproductive health and rights of young people in sub-Saharan Africa remain a public health challenge, and people under the age of 25 years represent nearly half of the world's population. They fail to understand they have an important role to play in the world's reproductive health, thus the lives of youths aged 15 and 24 years seem to be overshadowed by reproductive health issues, unintended pregnancy, HIV and other sexually transmitted infections (STIs). Thus, many new cases of STIs are continuously reported among young people each year with a higher rate of unintended pregnancy among females. Despite the numerous campaigns promoting the knowledge and consequences of poor sexual behaviour among youths, young people have proof that their attitudes towards sexuality are poor. Knowledge of condom use is high among young, but the purpose of use varies among males and females. It has been evident that most females use condoms for the purpose of contraceptives rather than for prevention, while loving someone was regarded as a pre-requisite for sexual relations for girls and not for boys (Josina, 2001). Moreover, class-related issues are an important factor contributing to the poor sexual behavior of youths, and they lack knowledge of STIs transmission. Because adolescents are involved in a relationship with more than one sexual partner, and or the non-use or sporadic use of condoms, the sexual behaviour they practise is risky and they facilitate the spread of sexually transmitted infections. The adolescent age group is a critical stage in the re-enforcement and consolidation of gender roles and perception of a person's identity in relation to others (Moore, 2005). Empirical understanding of the odds of sexual concurrency and its role in the spread of HIV in developing countries remains limited, partly because of limited availability of data on sexual partnerships and lack of consensus on the measurement of concurrency (Vinod, et al., 2009).

The risk of contracting HIV increases in the presence of sexually transmitted infections, and young men and women are vulnerable to infections especially when they engage in sexual activities without using contraceptives such as condoms. Within sub-Saharan African countries, young people aged 15-24 years have the highest prevalence rate of sexually transmitted infections, with the rates much higher among young girls than boys (UNAIDS, 2004). In Malawi, 20% of young females aged 15-23 years were five times more likely to be infected by HIV virus, thus indicating female vulnerability to infections (Chinda cite in Alister, 2004).Young girls are more vulnerable to infections than boys, not because of their engagement in sexual activities with older men who tend to have more sexual partners and more sexual experience, but because of physiological attitudes. The prevalence of these infections shows great variation within location of residence with most infections occurring in urban rather than rural areas. The prevalence of STIs varies among males and females by residence. It has been evident that, the prevalence of STIs especially HIV among adolescents in the rural areas of Malawi are 12% compared with 23% in the urban areas (National HIV/AIDS Policy 2003). Previous years have seen the prevalence of STIs among young people as a sign of masculinity, but today infected persons are labelled as promiscuous and described as STIs high risk groups. Most of these young people who are infected by the virus become reluctant to report if they have ever contracted any STIs. Based on findings from the 2000MDHS, it was found that 8% of women and 13% of men within the age group of 15-19 years have had some type of STI during the 12 months period prior to the survey (MDHS 2000). Although some attention has been paid on child prostitution in Malawi, the commercial sex industry is overwhelmingly made up of young people. Certain cultural practices may expose young males and females to sexually transmitted infections. In Malawi, older men are engaged in initiating young girls into sexual activities and wife inheritance (common among the Tumbuka ethnic groups), and the use of a male relative to cleanse a widow by having sex with her (a common practice among the Sena in Nsanje) (Munthali, 2002). These practices need to be discouraged so as to control the transmission of sexually transmitted infections among young people.

2.6 Reasons for unsafe sexual habits among youths

Statistics have shown that young people put themselves at risk of infection with diseases through the practice of unprotected sex. This section therefore explains why youths practice such sexual behavior, and it would involve ideas from interpersonal relationships, the physical environment through knowledge and beliefs to self-esteem and a broader social context. About 90% of youths in sub-Saharan Africa are aware that sexually transmitted diseases such as HIV/AIDS are a fatal disease, but to understand the nature, its mechanism of transmission and methods of prevention is where knowledge is lacking. There is a serious gap in the knowledge of sexually transmitted infections when it comes to understanding how STIs are related and explaining to someone how it is transmitted and prevented (Liberty, et al., 2003). Communication with sexual partners regarding the risk of contracting STIs and condom use has been found to be strongly correlated with the willingness to use condoms (Reddy, et al., 2000), but talking about condoms is not always easy, as it often tends to break the intimacy and romance of the morale. Some partners perceive condom use to be associated with promiscuity, STIs and AIDS, thus suggesting condoms use will therefore imply either that one has a sexually transmitted disease, or that there is no trust among the partners (Kelly& Parker, 2000).

In a trusted relationship where contraception and sexual choice is discussed, condoms are abandoned in favour of less intrusive and more effective contraceptives (Liberty, et al., 2003). In some cases, the reason for leaving the condom behind symbolizes some new level of commitment within the relationship. Moreover, there is the assumption that long-term relationships necessarily involve less risk, even if the partner's status is known. Condoms are therefore reserved for casual encounters or secret lovers rather than one's steady partner (MacPhail, 2001). It is therefore difficult to re-introduce condoms into a steady relationship once they have been abandoned, since this will raise questions. Misconceptions among youths regarding the use of contraceptives such as the hormonal and intrauterine contraceptive devices lead to its non-usage by youths. They further believe that a condom can disappear into a woman and cause them serious injury, this therefore encourages them to practice an unsafe sexual activity. Peers are viewed as a good and bad influence on the youths, and most young boys are often encouraged by friends and in some cases by the community, to indulge in early sexual activity. It has been evident that some boys call their friends gay or stupid if they do not engage in sex as early as possible, while others initiate sex early for fear of being called virgins. Thus, competition among them plays a role in order to fit in with others (Setswe, et al., 2014). They are allowed to experiment with certain sexual issues and as a result, they tend to practice sex at an early age. Young girls on the other hand, feel the need to be with friends who are engaging in sexual relations since they fear being rejected and being called 'children'. Young boys are less likely to use condoms for fear of being ridiculed by peers as being cowards or being looked upon as sexually inexperienced (Lam, et al., 2013).

Studies have shown that pressure from the peers contributes a lot to youth self-esteem issues regarding condom use, and some peers are seen as a good influence for those that belong to groups of youths that want to wait, and are not ready to rush into early sex (Setswe, et al., 2014). In cases where youths delay their sexual debut, there is less likelihood of contracting STIs or having unwanted pregnancies. However, boys are more likely to have had their first sexual debut with girls of the same age, whereas for the girl the partner is likely to be between one and four years older (Audrey, et al., 2009). For some boys, it is most likely that the female partner could be a virgin, and for the girls, there is the likelihood of partners having had prior sexual experiences (Foster, et al., 2012). This facilitates the spread of HIV and other sexually transmitted infections. Sexual negotiation of any kind be it condom use, faithfulness, or about the nature and frequency of sexual intercourse, is lacking in many sexual relationships among youths in sub-Saharan Africa. Power dynamics in relationships due to age differences put girls at a disadvantage in negotiating the terms of a relationship such as condom use and being coerced into sex to show their love (Wirtz, et al., 2015). They often feel obliged to give into what the boy's request. Some girls who come from urban areas are often coerced into sexual activity during their first sexual encounter and some end up with unwanted pregnancies, thus increasing the risk of sexually transmitted infections (Maharaj, et al., 2007).

Qualitative research has shown that young people's heterosexual relationships in certain communities often involve sexual coercion, and violence towards the female partners. Boyfriends, who believe that a romantic relationship must necessarily involve full penetrative sex when and how the man wants it, feel justified in using assault or threats of violence to coerce their girlfriends into having sex. In such a relationship therefore, the male partner largely controls sexual activity, and this prevents the girls from insisting on condom use (MacPhail, 2001). Although some studies shows women's confidentiality in negotiating condom use, the prevalence was common among those that use condoms during their last sexual debut (Exavery, et al., 2012). Moreover, females suffered violence, especially in a society where males are in control of relationships (Vundule, et al., 2001) as a result they do not communicate with their partners regarding issues such as condom use or being faithful to one another for fear of violence. Sexual debut has shown different effects on different group of youths. Orphans for instance, have been associated with an early sexual debut when compared with non-orphaned youths (Mkandawire, et al., 2013). According to some orphans, sex has been regarded as a form of survival and a form of escaping from the poverty trap, thus sex becomes economically viable. At this stage, (vulnerable) they do not have any negotiating powers for safer sex, thus resulting in risky sexual behaviour. Lack of family connections, parental guidance, and monitoring associated with an early sexual debut all contribute toward youth's engagement in risky sexual debut. It has been evident that orphans are more likely to be abused when compared with non-orphans (Tonya, et al., 2006). The absence of parents or protective guardians in some societies causes some community members to take advantage of such orphans through unwanted sexual advances. These youths tend to give in for fear of being victimized, and because they are in a vulnerable position, issues related to safe sex become a problem, as they are not able to negotiate condom use.

Parents influence their children far more than their peers, educators, counsellors, and other professionals as they advise continually and firmly during the lifespan of their children (Sharma, et al., 2011). It has been documented that there is a very strong relationship between family characteristics and youth deviant behavior. Children of disrupted families are at higher risk of initiating the use of controlled substances and engaging in sexual intercourse. A child's family attachment is more important than family structure, despite the fact that family structure does not have an effect on family attachment. The child's parent relationship plays a protective role against sexually transmitted infections. A community which has a good relationship with the mother is a shielding factor against sexual intercourse and multiple sexual partners. It has been evident that 'among the various dimensions of family support, positive family communication and connectedness is important to adolescent sexual self-care or avoidance of risk (Camlin, et al., 2008). However, poor communication between sub-Saharan African adolescents and their parents about sexual matters, and parent's refusal to talk with their daughter about sex have contributed a lot to their poor sexual behavior. Thus, they only give vague injunctions rather than information, and in some cases, they even punish them when they raise subjects concerning sex (Kelly, 2000). In a family where communication about sex is lacking, both supervision and lack of supervision from parents may contribute to unsafe sexual behavior. In cases where parents forbid contraception in an effort to control their children's sexual activity, the fear of discovery and parental anger may reduce the rate of condom use. Condoms are often dispensed with when young people hurriedly take the opportunity to have sex while their parents are out (MacPhail, 2001), this is those crucial moments that a child can easily contract STIs.

Religious beliefs also delay coital debut for white, Asian, and Hispanic middle and late adolescents, but it has no effect on black adolescents. Other researchers concluded that black religious institutions are an important influence on a black adolescent girl's sexual behavior. However, religious parents teach norms, values and responsibilities to their children from a religious view so that their children abstain from early debut (Rostosky, et al., 2003). However, parent's sexual behavior and modelling of peers are closely associated with adolescent sexual attitudes and behaviours. Empirical research suggests a strong relationship between the number of friends who had initiated sexual activity and teenage sexual behavior. People that report stronger peer involvement in sex and more positive sex outcome expectancies are more likely to initiate sex at a younger age (Mahapatra, et al., 2013). Sexual behaviour has been linked with other risky behaviours such as alcohol and drug abuse especially in the environment where youth live or the people they interact with such as friends or the community in general (Doku, 2012). Studies carried out on the effects and associations of risky sexual behavior indicate that, alcohol and drugs are indirectly associated with low condom use. Alcohol serving venues have been found to be a site where people meet sex partners and as such they engage in high risky sexual activities (Morojele, et al., 2006). There is therefore evidence that alcohol may be used as a currency for exchange of sex for material goods in alcohol serving venues. Commercial sex work in sub-Saharan Africa has received considerable attention for its contribution to the HIV pandemic and formal sex work represents only a small proportion of transactional sexual relationships (Hutton, et al., 2013). It has been evident that, nearly a quarter of young females in South Africa have had sex in exchange for material goods or money (Dunkle, et al., 2004) and a further study of bar-goers in Cape Town found that 12 per cent of males and females had exchanged sex for goods or money (Kalichman, et al., 2007). It is therefore complicated to understand the issue of transactional sex since exchange in a relationship may be normalized within a cultural context (Leclerc-Madlala, 2003). Relationships may range from single night engagements to semi-permanent affairs, including transfer of resources that may be money, rent, school fees, alcohol or drugs (Wojcicki, 2002). Females engage in transactional sex to meet their basic needs, but recent evidence suggests that poverty is only a partial driver of transactional sex, since females engage in transactional sexual relationships not just out of necessity, but for social status, to obtain non- essential commodities (Nattrass, et al., 2012). Among youths aged 18-30 years in Peru, the use of condoms decreases by half if one has a history of drug abuse, and for males, the probability of interacting with a casual sex worker doubled or tripled the probability of STIs (Juan, et al., 2009).The use of drugs and abuse of alcohol further increases the likelihood of engaging in risky sexual behaviours. The initiation of early sexual activities by youths because of drugs contributes to their early age of sexual debut thus facilitating the spread of sexually transmitted diseases (Liu, et al., 2006).

2.7 Youth's Self-efficacy, Self-esteem and Sexual Behaviours

Despite the risky sexual behaviour among youths in sub-Saharan Africa, the majority are knowledgeable about sexually transmitted infections and the role of condom use during any sexual relationships. The only challenge is whether this knowledge translates into behaviour. Despite the pressure from peers, relationships, lack of parental guidance, youths with a sense of direction and life goals will always do what they want, and they thus have a high self-efficacy for condom use even in relationships where the other partner doesn't give room for negotiations. Such youths are therefore more empowered in knowing their true self and their self-worth, thus they are in a position to negotiate relationship issues, and this reduces the likelihood of engaging in risky sexual behavior. These issues of self-esteem have been viewed as one of the biggest threats to most risky sexual behaviour among the youth, as the majority are still trying to be themselves and sometimes struggle with these issues which at times lead to risky sexual behavior for which they later on seek approval.

It has been evident that sexual self-efficacy has the potential to play an important role in the assessment of effective treatments for sexual problems (Rowland, et al., 2015). Self-esteem therefore leads to risky sexual behaviour especially low condom use; and adolescents are engaged in these practices in order to seek approval and affirmation from sexual partners. Another study found that, condom use self-efficacy and condom negotiation intentions were associated among women who have consumed alcohol more than sober women (Davis, et al., 2014). Among some South African adolescents, having a future, optimism and high self-esteem were associated with the intention to use condoms (Bryan, et al., 2006). Moreover, ever having sexual intercourse, early age of first sex, number of recent and lifetime sexual partners, non-condom use/non-contraceptive use, alcohol use before intercourse and being forced to have sex were found to be associated with reduced emotional self-efficacy for specific race/gender groups (Valois, et al., 2013).

In Malawi, HIV-related knowledge, self-efficacy and lack of stigma were found to be associated with HIV testing. Moreover, in program exposure knowledge, self-efficacy was also found to be associated (Berendes, et al., 2011). Responsible youths need to build their self- esteem, as this will reduce the likelihood of engaging in risky sexual behavior. Most parents, teachers, and communities have always proven to be role models for the youths, and as for the girls, having a close-knit family influences the pathway for their behavior. Meanwhile, boys are often influenced by what their peers think (Brook, et al., 2006). In situations where youth lack family members who take care of them, this is often associated with an early sexual debut for most girls since they lack that family connection. The situation becomes worse especially when the girl child stays away from the family. The argument regarding youth's inability to offer trust to one another indicates that there is low self-efficacy for condom use because of mistrust when the partner suggests the use of a condom.

2.8 Tradition, Societal beliefs and Youth's Sexual Behaviour

Sexual debut and the idea of safe sex methods have also been influenced by the beliefs and culture of the community. Qualitative research has found a widespread low status amongst most females within sexual relationships, and despite the fact that majority of them suffer this oppression; studies have shown that traditional African cultures are frequently patriarchal and oppressive towards females. It has been evident that improving economic independence and sexual satisfaction within partnerships will have some leverage for the reduction of concurrency (Mah, et al., 2013). Sexual coercion and violence within relationships has been linked to socio-economic status, and researchers of sexually transmitted infections have noted that pervasive, cultural values entrench gender discrimination, thus increasing the risk of infection. Sexual debut is therefore delayed among females who come from religious backgrounds where engaging in sex before marriage is a taboo. Irrespective of this, some of the girls preserve their virginity but rather engage in other sexual acts like anal sex, which still places most of them at risk of contracting sexually transmitted diseases. Certain cultural practices regard females as subordinate inmost sexual relationships and issues relating to males sexuality; biologically determined 'needs' and sexual 'rights' are often the main theme under discussion. In discussing monogamy, males always claim that they need variety, and that it is in the man's nature to want many partners, and staying with one partner therefore goes against the essence of being a man (Liberty, et al., 2003). Some females within the sub-Saharan regions believe that a man cannot go to the street to find other female (MacPhail, 2001).Young males and females likewise justify impulsive, unprotected sex through the discourse of biology and desire. Some claim that they need sex in order to stay healthy, and they equally hold the pervasive belief that sexual desire is a natural force that one should not attempt to control.

The beliefs and culture of most communities is seen as an influential factor of sexual debut within sub-Saharan African countries, as well as methods of safe sex. In some societies, religion plays a role in delaying sexual relations and for those youths, especially females, who came from religious backgrounds where having sex before marriage is shunned, their sexual debut is delayed. With the introduction of condoms, society had the misconception that they were meant for high risk groups such as commercial sex workers, like those on the street of Lilongwe, the capital city of Malawi. Moreover, there is a further misconception that those who use condoms are thought to be promiscuous. Most females are more trusted in stable relationships or marital relationships and are more likely to stay with one sexual partner. However, where males have more than one sexual partner, this exposes them and their partners to increased risk of STIs. In such relationships, condom usage is often very low (Maharaj, et al., 2004).

2.9 Knowledge and Awareness of STIs/RTIs

Sexually transmitted infections are a major public health issue that has been neglected in most countries, both in the developed and developing world. Most studies of sexually transmitted infections put more emphasis on HIV/AIDS with little concern about other STIs such as syphilis, gonorrhoea, hepatitis, and Chlamydia. However, the major challenges encountered when studying STIs are that they occur without symptoms and can easily be passed on to an uninfected person during unprotected sexual intercourse. The awareness that sexually transmitted infections are very common in most parts of sub-Saharan Africa is increasing every day, as evidenced from the rise in the number of publications on sexually transmitted infections in scientific journals and many reports on the disease. The frequency is however, higher in most rural rather than urban areas in sub-Saharan Africa (Mbah, 2003).

In Malawi, the government has put more focus on information, education and communication campaigns as a means to create awareness of STIs and its impact among young people. Based on these campaigns, it was assumed that individuals with knowledge of any sexually transmitted infections will protect themselves, but other studies have pointed out that, although people are aware of STIs, its mode of transmission and prevention, the majority still go for risky sexual behaviour such as not using contraceptives, initiating sexual activities earlier, and having multiple sexual partners. Studies have shown that, in the northern region of Malawi, people who were suspected of having sexually transmitted infections sometimes have unprotected sexual intercourse with the aim of spreading the infection. Although studies regarding the level of knowledge and awareness of STI at the onset were low, a number of other studies have shown that there is a high level of knowledge and awareness of sexually transmitted infections in Malawi of up to 90% (Maluwa-Banda, 2001). A recent study in Dowa District revealed that over 90% of youth knew about HIV/AIDS, but a slightly lower number (80%) knew about other STIs such as gonorrhoea and syphilis (NFPAM, 2002). However, most young males and females obtain information about sexually transmitted infections from hospitals, radios and from some school teachers. Other sources include newspapers and magazines, posters, video and film, health talks, friends and relatives. However, there is overwhelming recognition of sex as the primary mechanism for sexually transmitted infections among young males and females in Malawi. The 2000 survey indicates that 15-19 years old males and females reported that abstinence and condom use was a major key to preventing the spread of sexually transmitted infections. This is an indication that, young males and females are aware of the fact that sexually transmitted infections can be transmitted through sexual intercourse. Studies about STIs have examined some correlates of STI among the youth, and some factors associated with individual levels of STIs contractions such as early initiation of sexual activity, alcohol and drug use before sex, having multiple sexual partners and condom availability and use. It has been evident that, females who have sexual relations under the influence of alcohol are two times more likely to have a diagnosis of a sexually transmitted infection compared to those who have never had an STI (Puja, et al., 2011).The prevention and control of STIs among youths in some countries is regarded as a very low priority.

Moreover, knowledge about prevention methods is much higher among males than females. According to the 2004 global report on AIDS, the United Nations Programme on HIV/AIDS indicates that 41% of males aged 15-24 years were able to identify prevention methods, while 34% of females were able to identify some prevention methods (UNAIDS, 2004). In a study conducted in Mzimba in 1990, 87% of teenagers attending school were aware that HIV could be transmitted through sexual intercourse, 86% by blood transfusion, 88% by sharing piercing instruments, 89% reported that having multiple sexual partners could easily contract the disease, and 72% were aware that it could be transmitted from mother to child (Msapato, et al., 2000). Similarly, a study conducted in 1997 indicated that, 67% of young teenagers in Blantyre, 68% in Lilongwe and 58% in Mzuzu reported that avoiding sexual intercourse was a preferred method to prevent sexually transmitted infections such as HIV/AIDS (Kachingwe, et al., 2001).This is an indication that, young teenagers in Malawi are aware of preventive measures against sexually transmitted infections especially HIV/AIDS. A number of studies have raised some misconceptions and attitudes about sexually transmitted infections, especially HIV/AIDS in Malawi. Msapato, et al., (2000) found that about 63% of teenagers in Mzimba thought that dying of sexually transmitted infections such as AIDS was a punishment, thus suggesting that AIDS was associated with promiscuity. Furthermore, a number of other important misconceptions about sexually transmitted infections such as HIV/AIDS are the fact that a healthy person can carry and transmit the virus to others. Young males and females also hold misconceptions that may negatively affect their preventive behaviour and perceptions about people living with the virus. Studies in Salima District have found that 25% of youths believed that HIV could be transmitted through casual contact such as drinking from the same glass, holding hands and kissing or living with someone who has AIDS (Cook, et al., 2000). The 2000MDHS shows that 7% of adolescent males aged 15-19 years who had ever heard about HIV had been tested, while 86% wanted to be tested, 12% did not want to be tested and 2% did not know if they wanted to be tested or not, and among females, the situation almost similar with 7%, 81% and 12% respectively. Lack of awareness of the problem of STI and their complications, competition for resources to control other important health problems, and the reluctance of public health policy makers to deal with diseases associated with sexual behaviour are regarded as the major reasons behind the neglect of STIs in most societies. Presently, the transmission and prevention of infections is receiving increased attention because of the global epidemic of STIs, and the identification of other STIs as risk factors (Wafa, 2008). It is therefore necessary to understand that young females are more vulnerable than males to infections with STIs and its complications such as infertility, cancer and inflammatory diseases. Furthermore, females are more susceptible to most STIs than males, partly because of the greater mucosal surface exposed to a greater quantity of pathogens during sexual intercourse (Brown, 2000). Most sexually transmitted infections affect the outcome of pregnancy and some are even passed to unborn and new born babies (UNAIDS, 2005). An estimated 1640000 pregnant females in sub-Saharan Africa have undiagnosed syphilis every year and almost all of them remain undetected (Gloyd, et al., 2001). In this light therefore, any introduction of effective screening and treatment program for this illness in the region will help prevent close to half a million fatal deaths a year.

From a global perspective, it has been evident that up to 4000 new-born babies go blind every year because of maternal gonorrhoea; and an unknown number are affected by neonatal herpes or Chlamydia conjunctivitis (Schmid, 2004). Sexually transmitted infections have been regarded largely as infection that is common among youths mainly because their sexual relations are often unplanned, and sometimes a result of pressure or force, and often happen before they realize they need to protect themselves. Irrespective of the absence of data on STD acquisition by age, data from US shows that young adults aged 15-24 years acquired 48% of all such infections (Weinstock, et al., 2004) though not all youths at this age are sexually active. Youths therefore have the most to lose from acquiring sexually transmitted infections since they suffer the consequences the longest, and might not reach their full reproductive potential (Anna, et al., 2006). In the developing world, the commitment to enhance health care services (Buva, et al., 2001) and its preventive measures for both females and males could achieve success. Infections that arise because of unsafe abortions or because of complications of pregnancy and childbirth frequently lead to chronic disability and death in some places (Rutstein, et al., 2004). Thus, there are cruel social consequences for females with infections such as vesico vaginal fistula after obstructed labour-divorce, exclusion from religious activities, family separation, worsening poverty, and much more suffering as well. Reproductive tract infections therefore make life a misery for many females. On a general note, there is a high level of awareness of sexually transmitted infections among youths in Malawi, but with more knowledge of HIV/AIDS than other sexually transmitted infections. As evident by a study conducted in Blantyre, Lilongwe and Mzuzu youths considered HIV/AIDS as major health problems, with 43% of boys and 38% of girls recognizing AIDS as their primary health concern. There is a need for more emphasis on other STIs among youths in Malawi (Alister, et al., 2004).

2.10 Theoretical Framework

2.10.1 Introduction

Health theories have been created using cognitive attitudinal and effective motivational constructs. These theories however, focus on psychosocial factors such as knowledge, attitudes, beliefs, personal traits and intentions that influence an individual's behaviour. It has been realized that these factors could influence an individual's behaviour and are crucial in the promotion of health practices (Groenewold, et al., 2006). From the large number of RTIs/STIs related articles that have emerged over the past decades, a large section of these articles has supprisingly focused on social cognitive models, which entails a broad category within social psychology that differs from other specific learnings. These models were used in order to understand the phenomenon in the social sciences. It emphasizes behaviour as a function of subjective value of an outcome and the probability or expectation that a particular action will achieve that outcome.

However, the term cognitive is the internal mental process of human beings, with its domains of memory, perception and thinking. Thus, perception is an organised process in which the individual selects cues from the environment and draws inferences from these in order to make sense of his experiences (Quinn, 2000). Much has been said about the cognitive models of effectiveness and valuability in predicting sexually transmitted infections (STIs), preventive behaviours and providing theoretical guidance on psychological changes. However, the Health Belief Model (HBM), the theory of reasoned action, the theory of planned behaviour and the social learning/cognitive theory are the most commonly used theories when studying issues related to RTIs/STIs (Airhihenbuwa, et al., 2000). With regard to the current study, we shall employ only the Health Belief Model (HBM) and the Theory of Reasoned Action (TRA).

2.10.2 The Health Belief Model (HBM)

It is a psychological health behaviour change model that was developed to explain and predict health – related behaviour. A model describes a symbolic depiction of reality and provides a schematic representation of some relationships among phenomena by using symbols and diagrams to represent an idea. This theory was developed in the 1950s by social psychologists, and has remained one of the most well-known and widely used theories in health behaviour research (Christopher, 2010). The model therefore suggests that, individual's beliefs about health problems, perceived benefits of action and barriers to action, self-efficacy, explains its engagement in health–promoting behaviour. This model however, shows how an individual's motivation to act is analysed based on the function of whether or not one expects to attain a health – related goal. The model therefore provides a theoretical basis from which health-related behaviours might be predicted and altered, and is one of the first models of health-promoting behaviour. It has therefore remained one of the most widely recognized conceptual frameworks of health related behaviour from a social psychology perspective using theories of value – expectancy and decision-making (Mikhail, 2001).

Conceptual frameworks map concepts and statements to ascertain their interrelatedness. Thus, the HBM is a conceptual model and not a formal theory, and has the premise that individuals will take action in preventing, controlling, or treating a health problem if they find the problem to be severe in its nature and its consequences; and if they perceived that, the action toward that problem will benefit them and yield desirable outcomes. The model therefore explains that, the likelihood that an individual will engage in particular undesirable health behaviour is related to one's belief about the severity of the potential illness (Valerie, et al., 2000). This model is a humanistic theory whose beliefs are based on the model's Meta – theoretical assumptions of epistemology, ontology, and axiology. Although this model is a humanistic theory, it was used as a theoretical framework for the current study because it stands out among the social-psychological models of health-related behaviour, and it is a value expectancy model aimed at explaining individual's health actions under uncertain conditions. Based on the current study, this model was used to investigate the STIs/RTIs – related knowledge, attitudes and beliefs and the sexual behaviour of youths in the regions of Malawi.

2.10.2.1 Assumptions of the HBM

The health belief model is based on the assumption that a person will take a health related action (use condom) if that person feels that a negative health condition can be avoided. It is however necessary that individuals realize that they have the potential to avoid a condition and this will only be effective if one has true knowledge of the problem. The model further assumes that, a person will take preventive action (that is, using condoms will be effective at preventing STIs) if he has a positive expectation that by taking a recommended action, the negative health condition will be avoided. That individual therefore needs to see the benefits derived from practicing the behaviour. If a person fails to see a benefit, it would be difficult for one to take the necessary action. However, youths in the current study must perceive the benefits of using a condom before they can initiate and maintain their use in order to prevent STIs. Thirdly the model assumes that a person will take a health related action if he/she believes that one can successfully get the recommended action does not make sense (Campus, 2005). It therefore requires that the person feel confident that one has the capacity to take the recommended action, and this would require that the person have the necessary knowledge and skills in a supportive environment to carry out the required actions.

2.10.2.2 Components of the HBM

The HBM has three major components; the individual's perceptions about health; modifying factors, which include demographic, socio-psychological, and structural variables; and the benefit of taking preventive measures. Individual perception is a person's beliefs about one's own susceptibility to a disease and the seriousness with which one views the perceived threat of the illness (Onega, 2000). Based on the current study, individual perceptions are the beliefs that youths have about their susceptibility to RTIs/STIs and the severity perceived of the said infection. Modifying factors such as demographic, socio-psychological, and structural variables may affect an individual's perceptions and might indirectly influence health-related behaviours. However, socio-demographic factors like educational level, could affect a person's perceptions of susceptibility to and severity of suffering ill effects resulting from RTIs/STIs, and one's perceived benefits to be expected from using male condoms effectively, and a barrier to accessing and using condoms. As per the current study, the correlation between demographic variables and RTIs/STIs indicators such as knowledge, attitudes, and condom use, multiple sexual partnership, and early age of sexual experience, were investigated. However, other modifying factors such as socio-psychological variables and structural variables could modify an individual's decision to use condoms during sexual intercourse. Variables affecting the likelihood of initiating and maintaining action were explained in line with the current study. However, youth's perceived benefits of practicing safer sex (by using condom consistently), and the perceived barriers to taking action (accessibility, affordability and acceptability of condoms), will provide the likelihood of taking action to change behaviours.

2.10.2.3 Concepts of the HBM

The HBM spelled out four constructs representing the perceived threat and net benefits; perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. These concepts were proposed as accounting for people's "readiness to act", with an added concept, cues to action, which would activate that readiness and stimulate overt behaviour. The HBM is therefore a value expectancy theory with the desire to avoid illness or to get well, and the belief that specific health actions available to an individual would prevent undesirable consequences. However, in the current study, the desire here would be to avoid RTIs/STIs through a specific health action such as the effective and consistent use of male condoms during sexual intercourse, and avoiding multiple sexual relationships, otherwise the undesirable consequences would be contracting RTIs/STIs.

2.10.2.4 Perceived susceptibility

This concept defines an individual's beliefs about the chances of contracting a health condition (Groenewold, et al., 2006). However, an individual's perception that a health problem is relevant will contribute to that individual taking the required action to prevent that health problem. For this to be successful there must be activities that will increase the individual's perception of one's vulnerability to the health condition. In trying to investigate the pattern of STIs risk behavior and condom use among youth in Yaoundé and Douala, Cameroon, aged 15-24 years, it was found that despite the high awareness of the virus, and the protection provided by condom, only 14% female respondents and 20% male counter parts were consistently using condoms (Meekers, et al., 2001). In another study aimed at investigating knowledge and practices of the correct use of condoms among 206 university students in South Africa, female students perceived themselves to be at risk of getting pregnant and STI infected, and 49% were using condoms. However, this result indicates that, perceived susceptibility to STIs might positively influence youth's use of condoms.

2.10.2.5 Perceived severity

It refers to one's beliefs of how serious a condition and its consequences are (Groenewold, et al., 2006). Once an individual recognizes one's susceptibility to certain problems or conditions, it does not necessarily motivate one to take the necessary preventive actions unless one realizes that getting the condition would have serious physical and social implications. Thus, it is when one realizes the magnitude of the negative consequences of a condition that one can take the necessary actions in order to avoid these negative consequences. With respect to the current study, youths need to perceive STIs/RTIs as a serious infection that has severe consequences and implications on their physical and social lives, before they are willing to adopt preventive actions such as continuous use of condoms, and avoid multiple sexual partnerships in order to avoid contracting the pandemic.

2.10.2.6 Perceived benefits

It refers to one's beliefs in the efficacy of the advised action to reduce the risk of impact (ReCAPP, 2005). Such individuals need to believe that by taking a particular action, it will help him/her to avoid or prevent a problem from occurring (Hanson, et al., 2002). It is therefore this belief that gives a person that confidence to take the action because of the expected outcomes. The HBM however, proposes that the belief about the effectiveness of condom use in preventing the spread of STIs should therefore correlate with their consistent use. The willingness of the partners to use condoms and parental support for the use of condoms are significant factors in consistent condom use. In line with the current study of youth sexual behavior and knowledge of sexually transmitted infections, perceived benefits are beliefs about the effectiveness of recommended preventive health actions, such as consistent condom use, and having one sexual partner to prevent STIs/RTIs. Condom use was investigated in the current study.

2.10.2.7 Perceived barriers

Perceived barriers refer to an individual's own evaluation of the obstacle in the way of him or her adopting a new behavior. It also refers to one's belief in the tangible and psychological costs of advised behaviours (Groenewold, et al., 2006). There could be several barriers that affect a person's decision to take particular actions. In order for an individual to adopt a new behaviour, he/she need to believe that the benefit of the new behaviour outweighs the consequences of continuing the old behaviour (Centres for Disease Control 2004). It has been evident that perceived barriers include difficulty with starting a new behaviour or developing a new habit, fear of not being able to perform correctly, physical as well as psychological barriers, accessibility factors, and even personal characteristics, and having to give up things in order to do what will be considered to be of importance to health. However, perceived barriers are possible blocks or hindrances to preventive behaviour, including factors like inconveniences, cost, and unpleasantness (Agha, et al., 2001). It is only after a person realizes that they have the capacity to deal with these barriers, that they would be able to take the necessary actions. These barriers with respect to the use of condoms in order to reduce the rate of STIs were identified in the current study.

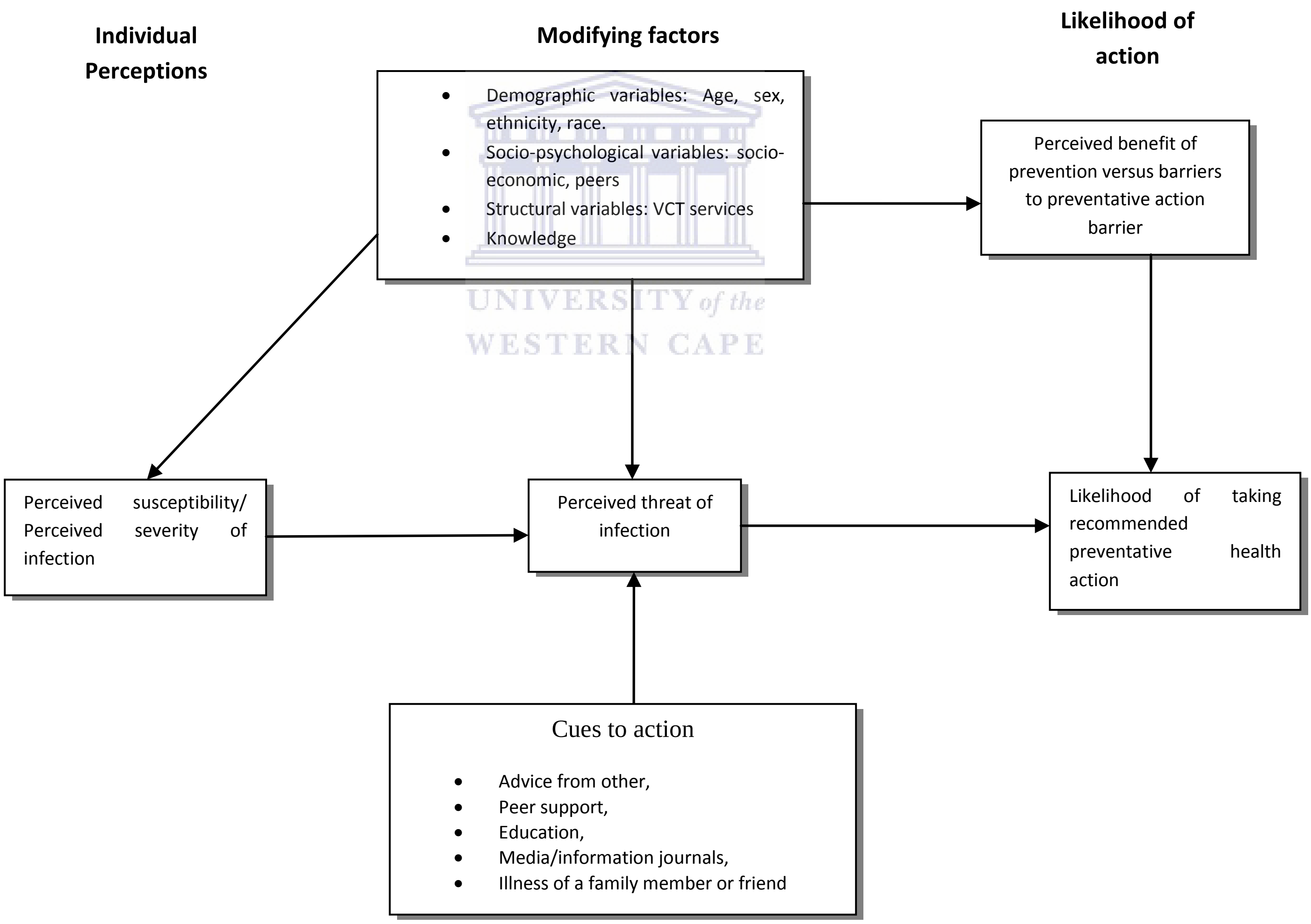
2.10.2.8 Cues to action

The HBM, in addition to the other four beliefs or perceptions and modifying variables, suggests that behaviour is influenced by cues to action. Cues to action are therefore events or experiences, personal (physical symptoms of a health condition), or things that move people to change their behaviour (Groenewold, et al., 2006). It is when an individual feels the desire to take the necessary action after believing that one has the capacity to do so. Examples of cues to action include; illness of a family member, media reports, and media campaigns (Graham, 2002), advice from others, or reminder postcards from a health care provider (Al-ALi, et al., 2002). The required action will therefore benefit one by knowing how to deal with the expected barriers. Cues to action however, require a motivation of the person to have the desire to comply with the prescribed action or treatment, to have concerns about health matters, and to be willing to seek and accept health care services. Based on the current study, events that help motivate individuals to use condoms, avoid multiple sexual partnership, such as personal and environmental, were identified in order to prevent the spread of STIs.

2.10.2.9 Self-efficacy

This concept was added to the original four beliefs of the model in 1988, and it is the belief in one's own ability to do something new unless they think they can do it. Thus, it is the strength of an individual's belief in one's own ability to respond to difficult situations and to deal with any associated obstacles (Peltzer, 2001). It is one's ability to successfully take an action. However, if a person believes that a new behavior is useful (perceived benefit), but does not think he/she is capable of doing it (perceived barriers), it is therefore certain that it will not be tried. One should therefore feel that people are capable of taking the necessary action correctly since it is that confidence that would motivate one to initiate and sustain the action (ReCAPP, 2005). Based on the current study, self-efficacy is the confidence in one's ability to control his or her sexual life, in order to avoid sexually transmitted infections by consistently using condoms (Groenewold, et al., 2006). The present study therefore attempts to establish whether youth's knowledge of STIs can help control their sexual habits. The HBM is presented in the flow diagram below.

Figure 1 Conceptual Model of the Health Belief Model (HBM)



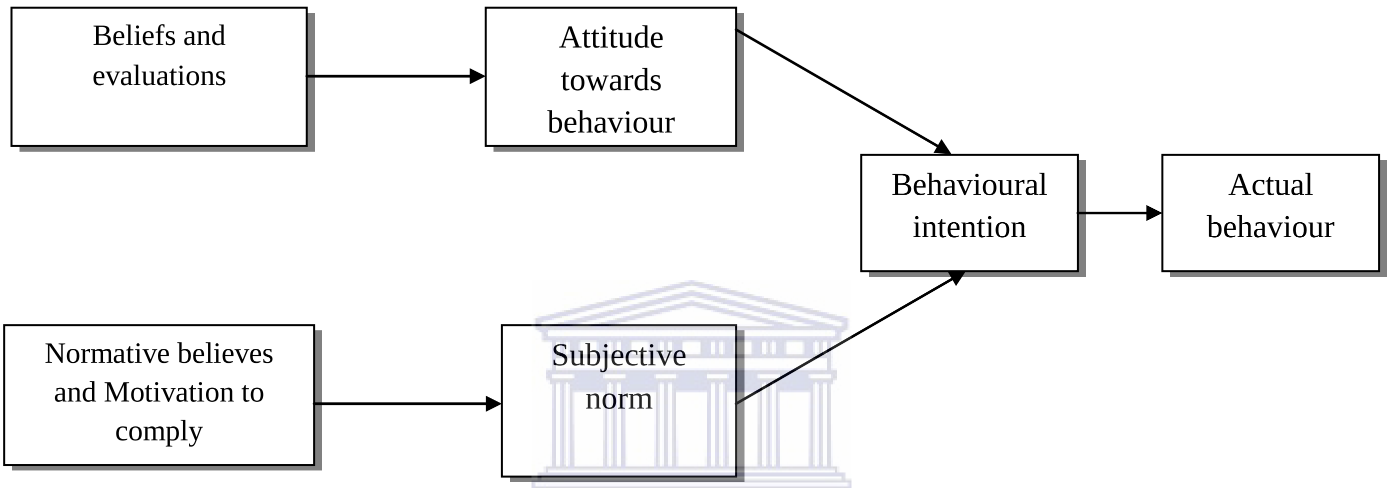
Source; Glanz, Rimer and Lewis 2002

2.10.3 Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA) is actually, a series of concepts and hypotheses that were linked, postulated and developed by social psychologists in order to understand and predict human behaviour. It was advanced in the mid-1960s by Fishbein and Ajzen and was based on the assumption that human beings are quite rational and make systematic use of the available information to them (Collins, et al., 2012). The theory postulates that a person's intention to perform (or not perform) a behaviour is the immediate determinant of that action; and that barring unforeseen events, people are expected to act in accordance with their intentions. It is one of the "expectancy values" models of human behaviour whose terminology is not very much different from that of the well-established subjective expected utility model used by economists. This theory has however, been applied to study a wide variety of situations since its introduction into behavioural research, and has now been regarded as one of the most influential theories of human behaviour (Trafimow, et al., 2002). The theory of reasoned action is however, similar to the HBM conceptually, but just for the fact that it added the construct of behavioural intention as a determinant of health behaviours. The theory of reasoned action therefore focuses on the role of personal intentions in determining whether behaviour will occur. However, both theories focus on perceived susceptibility, perceived benefits and constraints to changing behaviours.

According to the model, an individual's behaviour is a function of the intention to perform that behaviour. Thus, the stronger the intention, the more the individual is expected to try and therefore, the greater the possibility that the behaviour will actually be performed. Therefore, an individual's intention to behave in a certain way is the direct, immediate determinant of the act, and the person's intention is a function of their 'attitudes' to the behaviour in question, and their perception of the social pressures on them to behave in this way is described as 'subjective norms'. The contribution of attitudes and subjective norms varies according to the behavioural context and the individuals involved. Attitudes are derived from the beliefs about the consequences of the action and the evaluation of these expected outcomes. Subjective norms are the direct acknowledgement of social influence on intention, and are dependent on beliefs about how others feel the individual should behave towards a required action. We can therefore ascertain that behaviour is the weighted sum of attitudinal or normative effects. Looking at a case whereby a person intends to limit his or her number of sexual partners or start using a condom, the attitudes might be 'having only one sex partner is as good as having multiple sex partners' or 'having sex with a condom is just as good as having sex without a condom'. Thus, the subjective norms could be 'most of my peers are having one sex partner and they would therefore expect me to do so as well'.

Figure 2 Theory of Reasoned Action



Source: *Davis, Bagozzi et Warshaw (1989)*

CHAPTER III

DATA AND METHODOLOGY

3.1 Introduction

This chapter presents the data and methodology used in this study. It also explores the study settings, regions in the study area, the research design, data collection procedures and study sample. Selected variables, statistical methods/tools, data reliability and validity were also explored in this section.

3.2 Study Setting

Malawi is a country in sub-Saharan Africa that is located south of the equator. It is bordered by Zambia to the Northwest, Tanzania to the North East, and Mozambique to the East, and South East. The country is separated from Tanzania and Mozambique by Lake Malawi. Malawi is one of the poorest countries in the world, with its population characterised by a high proportion of young people under the age of 15 years, which account for 45% of the 15 million people. There is a high dependency ratio, and poverty is rampant with 65% rural and 55% urban population living under conditions of poverty (MDHS 2010). This condition has been due to the recurrent episodes of drought which has affected food security leading to a high inflation rate, and low productivity. Lilongwe is the capital and largest city with Blantyre and Mzuzu being the second and third largest cities respectively. The name Malawi comes from 'Maravi' which was an old name of the Nyanja people that inhabited the area. It is also nicknamed "*The Warm Heart of Africa*". Malawi has a democratic, multi-party government, currently under the leadership of ***Peter Mutharika***. It has central hospitals, regional and private facilities, with the public sector offering free health services and medicines, while the non-governmental organizations offer services and medicines for free, with a health insurance scheme available since 2000 (Ariane, *et al.*, 2009). The current constitution was put into place on May 18, 1995, and the government consists of the executive, legislative and judicial branches. The president, who is considered the chief of state and head of government, is also included in the executive. Presidential elections are organized every five years, and the president chooses the vice president. Malawi has a population of over 15million, with a growth rate of 2.75% according to the 2009 estimates. It has been estimated that the population will grow to 45million people by 2050, nearly tripling the estimated 16million in 2010 (House, *et al.,* 2014). The population of Malawi is diverse in terms of ethnic groupings, languages and religion. There are about nine indigenous ethnic groupings and a few Asians and Caucasians, indicating the wide range of cultural and traditional practices in the country some of which have a bearing on HIV/AIDS. However, traditional rules and practices also contribute to the low socio-economic status of women, with poverty and illiteracy more common among women than men. English is the official language and *Chichewa* is the national language. Other native languages exist such as the Malawian Lomwe, Kokola, Lambya, Ndali and the Malawian Sena, with Tonga spoken in the north. Religiously, it has been estimated that, 80% of Malawi's population are Christians, with the Roman Catholic Church and the Church of Central Africa Presbyterian (CCAP) making up the largest Christian groups.

The education system is structured in a way that primary education is not compulsory, but based on the constitution; everyone is entitled to at least five years of primary education. School attendance rate was increased in 1994 due to the introduction of free education; however, the dropout rate was higher among girls than boys due to high gender-based violence as a result of long-distance travel by girls to school. The youth literacy rate has increased from 68% in 2000 to 82% in 2007 due to improved learning materials in schools, better infrastructure and feeding programs that have been implemented within school systems. HIV/AIDS is a major challenge to the population, and its impact has affected both the economy and the inability of the political system to efficiently perform its activities. A substantial decline has been evidenced within 2001-2011 from 16.9% to 10.6%, with about 80% cases acquired through heterosexual contact (UNAIDS 2013). Factors such as multiple sexual partners, low-level of condom use, gender inequalities, stigma and discrimination towards infected persons, especially sex workers and men who have sex with other men, have been found to influence the epidemic in Malawi.

Figure 3: PHYSICAL MAP OF MALAWI

Source: www.ezilon.com/maps/africa/malawi-maps.html.

3.3 Regions of Malawi

The entire land surface of Malawi has been classified into different parts described as regions, which is further distinguished based on their surface features and location. The major regions of Malawi are mainly the Northern, Central and the Southern regions.

3.3.1 Northern Region

The Northern region is bordered by Zambia to the west, Tanzania to the north, Lake Malawi to the east and Malawi's Central region to the south. This region has a population of 1,698,502 inhabitants and covers a surface area of 26,931 square kilometres. Its capital city is Mzuzu, and this region embodies six of Malawi's twenty-seven districts. Malawi's northern region consists of the Likoma district where the Chizumulu and Likoma islands are located. Mzuzu is the gateway to the northern region, and has a climate that favours agriculture and this explains why a number of crops are found there. Along the slope of the neighbouring mountain, coffee and rubber are cultivated. There is high rainfall in this region with the presence of pine plantations with its green cover which is maintained throughout the year. The region in the 60's was less developed than the southern part because of lack of communication networks, but today buses ply the roads on a regular basis between Mzuzu and other destinations in Malawi. In addition to road services, air Malawi provides flight services to this region. The road network in this region is also noted for its beauty as it elevates from the Henga valley that cuts through the Viphya Mountains and the Nyika plateau reaching an altitude of 1100meters.

3.3.2 Southern region

The Southern region covers the areas of Zomba, Blantyre, Mulanje Mountain and the Shire Valley and it is located 290km south of Lilongwe. Zomba is located towards the foothills of the Zomba plateau, and it is noted for its buildings that reflect the colonial architectural style, with the market being one of the liveliest. Blantyre on the other hand, consists of the Blantyre community and Limbe that are connected by a highway extending 8kms. Despite it being the oldest municipality of the country, most industrial, commercial and communication related activities of the country take place there. The scenic beauty of this area with mountains and hills dotted with evergreen forest and wild orchids make it famous. In Blantyre, there is also the presence of many birds and animals' species, and a mountain conservation area in Michiru. It also has a number of historical sites that is suitable for tourists. In Mulanje, rock claiming and hiking on its mountain, make it a place that is loved by those interested in such opportunities. With its highest peak found at Sapitwa, it rises to an altitude of 3002meters. Waterfalls and steep gorges found in this area present a spectacular look. The Shire Valley offers an amazing view of the rift valley, and here you find a large number of crocodiles and hippos.

3.3.3 Central Region

The most important city in this region is Lilongwe, named after the river, which drains this area and moves further to join the Linthipe River. The city is referred to as capital city, garden city since it was decided that an administrative centre be established there. The establishment of camps in this area lead to a rise in its population from 30 to 20,000, which later on were declared as a municipality in 1966. The sudden rise in its population made it the second most important centre and is considered the new capital of Malawi. The road network is well connected in this city and this gave it added advantage. This city has both natural and architectural beauty with dotted mountains and hills with many species of trees like acacia that add to the beauty of the place, making it a place to visit when in Malawi.

3.4 Data

The data used for this study was obtained from the Malawi Demographic and Health Survey (MDHS) 2010 which was downloaded free of charge from www.measuredhs.com after permission was granted to do so by the ICF Micro International. The MDHS 2010 was cross-sectional data which was a nationally representative survey conducted in Malawi from June to November 2010 (MDHS 2010). Demographic Health Survey has conducted numerous surveys in about seventy countries across Africa, Asia, Latin America and the Caribbean. Demographic Health Survey programs are funded by USAID and implemented by Macro International, Inc. These surveys have large sizes of between 5000 and 30,000 households and often provide data for a wide range of indicators for monitoring and impact evaluation in the areas of population, health and nutrition. The survey collected data on different topics from a multistage cluster sample of 27.340 households.

Each district was demarcated into enumeration areas (EAs), and sampling was conducted within the district and EA levels. Within the districts, the primary sampling units were the EAs and within each EA, the households were considered the secondary sampling units. A total of 849 EAs and 27,307 households were selected, and of these, 25,311 were occupied. Of the 25,311 households found, 24, 825 were successfully interviewed, yielding a response rate of 98 per cent. Within each sampled households, only men aged 15-54 years and women aged 15-49 years were eligible for the survey.

The survey uses structured questionnaires; the household, female, and male questionnaires with several modules which included an HIV module that was administered to eligible members of the sampled households. The 2000 and 2004 surveys had used these questionnaires. The 2010 survey team obtained ethical clearance from the Malawi Health Sciences Research Committee, the Institutional Review Board of ICF Micro, and the Centre for Disease Control and Prevention in Atlanta, USA (National Statistical Office, 2010).

Although the number of explanatory variables for both males and females were not the same, the study focuses on those who did not use condoms consistently, with multiple sexual partners, and initiate sexual activity early. For the current study, risky sexual behaviour was defined using the four characteristics which were considered as the dependent variables in the study.

3.5 Study sample

In 2010, the National Statistics Office (NSO) of Malawi implemented the demographic health survey with a nationally representative sample of more than 27,000 households. This survey targeted all eligible females aged 15 – 49, and all eligible males aged 15 – 54 years. For the sample, a total of 27, 307 households were selected, and of these, 25, 311 were occupied. Of the 25, 311 households found, 24, 825 were successfully interviewed, yielding a response rate of 98 per cent. However, for the households that were interviewed, a total of 23, 748 females were identified to be eligible for an individual interview, of which 97 per cent were successfully interviewed. Among the males, 7,783 were identified as eligible, and 92 per cent were successfully interviewed. Thus, more females were interviewed than the males in the entire survey. With regard to the present study, out of a weighted sample of 9559 females and 2987 males aged 15-24 years, 5652 females and 1405 males were filtered (condom use at last intercourse), 675 females and 511 males (inconsistent condom use), 6470 females and 2026 males (multiple sexual partnerships (MSP)), and 3079 females and 1402 males (early sexual debut) were considered in the study.

3.6 Research Design

The samples for the 2010 MDHS were designed to provide population and health indicator estimates at national, regional, and district levels. The design thus allows certain indicators, such as contraceptive use to be calculated for each of the regions and 27 districts (Nkhata Bay and Likoma are combined). However, the sampling frames were based on the 2008 Malawi Population and Housing Census (PHC), obtained from the National Statistical Office. Administratively, Malawi was divided into 28 districts, with each district subdivided into smaller administrative units. During the 2008 PHC, each of these districts were subdivided into enumeration areas (EAs), referred to as clusters, where each EA as a whole was classified as urban or rural. The 2010 MDHS sample was selected using a stratified, two-stage cluster design, with EAs being the sampling units for the first stage. The 2010 MDHS sample included 849 clusters: 158 in urban areas and 691 in rural areas. The 849 clusters were not allocated among the districts in proportion to their contribution to the national population because this would have left smaller districts and regions with too few clusters to represent them. For example, districts in the Northern Region were oversampled to take into account its smaller population size.

In most districts in Malawi, more than 90 per cent of the population resides in rural areas, so urban areas were also oversampled. A complete listing of households was done in each of the MDHS clusters from May to June 2009. The list of households served as a sampling frame for selection of households. Households comprised the second stage of sampling. A minimum sample size of 950 households was required per district to provide an acceptable level of precision for the indicators measured in the survey. A representative sample of 27,345 households was selected for the 2010 MDHS survey. A subsample of one-third of the households was selected to conduct HIV testing for eligible females age 15-49 and eligible males age 15-54. In the same subsample of households, anaemia testing was conducted for eligible children age 6-59 months and eligible females age 15-49 years, and anthropometric measures were taken for eligible children age 0-5 years and eligible females age 15- 49.

3.7 Study questionnaire

Standardized questionnaires were designed and used for the collection of data in order to evaluate the success of the survey. The survey uses three types of questionnaires; the household questionnaires, woman questionnaires and the man questionnaires. The survey thus comprises questions on the following; Demographic key indicators; such as province, sex, age, ethnic group, marital status, children ever born, surviving children, age at marriage, type of dwelling place, place of residence, language spoken at home, educational level, literacy, relationship to household head and employment status etc.

Knowledge of sexually transmitted infections
Knowledge, attitude and behaviour about HIV/AIDS and sex
Knowledge and use of family planning methods
Fertility preferences
Marriage and sexual activity
Awareness and behaviour regarding AIDS and other sexually transmitted infections
Adult mortality, including maternal mortality.

3.8 Data collection

The sample for data collection was selected using a stratified two stage cluster design, with enumeration areas (EAs) being the sampling units. The sample however, included 849 clusters; 158 in urban areas and 691 in rural areas. Interviewers were given maps for the enumeration areas they were working in, for them to identify where the residences are located. In each EA, interviewers were provided residential addresses of the areas to be interviewed, with an additional number of youths to be interviewed aged 15 and 19 years if such a respondent resided in that household. This was done in order to increase participants in this age group in the sample. A systematic random sampling method was used to identify the households for interviewing. A minimum of 950 households was required per district to provide an acceptable level of precision for the indicators measured in the survey. A random number grid was used in each household identified, to select a respondent aged between 15 and 65 years. Where there was non-response or refusal, the interviewer was supposed to state the reason for the refusal clearly on the cover page, and return the blank questionnaire to his/her supervisor. The 849 clusters were not allocated among the districts in proportion to their contribution to the national population because smaller districts and regions with few clusters to represent them would have been left out. Thirty – seven interviewing teams were dedicated to carry out data collection for the 2010 survey, and each team consisted of one supervisor, one filed editor, four female interviewers, two male interviewers, and one driver. Six senior staff members from NSO, one ICF Macro resident advisor, and one ICF Macro consultant coordinated and supervised the fieldwork activities. Data collection took place over a six month period, from June through November 2010. Respondents aged 15 and below and above 65 were excluded from the original survey due to the sensitivity of some of the sexual behaviour questions. Thus, 24825 household were successfully interviewed, and this was comprised of 113, 574 persons; and 58, 414 made up of females representing 51 per cent of the population, and 55, 159 were male, representing 49 per cent of the population.

3.9 Methodology of this research study

This research employs a cross – sectional analytical study of existing data collected by the National Statistical Office (NSO) (i.e. the MDHS, 2010). The relevant data was extracted from the Malawi Demographic Health Survey findings to answer the research objectives described in the previous chapter. However, two separate datasets, the male recodes and the individual recodes (female recodes) were used in the study, and the age cohort described as youths were extracted using the select cases option under the data menu. In the select cases window I use the '***If condition is satisfied'*** option and move the variable age 5-year group using the arrow and equate it as 1 and 2 for the age group 15-19 and 20-24 respectively. The selected sample was weighted according to the design of the 2010 Malawi DHS in order to obtain a representative sample for the study. Sexually active youths were used as the basis for analysis since they were the group considered to be at risk of contracting sexually transmitted infections.

Risky sexual behaviour was defined using three characteristics: age at first sexual intercourse described as 'early sexual debut' (where sexual debut before the age of 16 years was regarded as risky); non-use of condoms at last sexual debut for those who had sexual activity in the 12 months before the survey; multiple sexual partnerships for those who had more than one sexual partner within the previous 12 month period, inconsistent condom use for those who did not use condom each time they have sex with the last sex partner. These variables were then used as the dependent variables and were redefined as follows; *Last sexual intercourse used condom,* defined as No = 1 for those who did not use condoms during the last sexual debut, and Yes = 0 otherwise. During the initial bivariate analysis, condom use and non-use were presented by gender and residence in order to see the proportion at risk and to establish the determinants of sexual behaviours among respondents. However, the study examines the determinants of non-use of condoms since the chances of contracting STIs are high among those who do not use condoms. The variable 'condom use' was then measured by including those who reported condom use (this includes those that used condoms after last intercourse) as Yes = 0, and No = 1 to represent those that did not use condoms. This was done based on socio-demographic characteristics in order to obtain the proportion of youths by sex that was not using condoms.

Other researchers (Dian Zhou, 2010) employ a second measure of condom use, that is, 'consistent use' by recoding all the youths who were currently using condoms or used at last sexual intercourse and coding them as '0' to indicate the presence of condom use, and '1' for the absence of these attributes. In the preliminary analysis, I adopted this approach and did not get statistical estimates because some of the youths were currently using other contraceptives besides condoms. However, this was conducted and presented in the findings as an indication that inconsistent use of condoms provides little or no protection against sexually transmitted infections. In performing the bivariate and logistic regression techniques, the variables literacy, wealth and highest educational levels were further redefined since at the initial stage, they gave very low values. Wealth was redefined into rich, average, and poor, literacy redefined into literate and illiterate, and education levels were redefined into no education, primary, and secondary/higher.

The second variable used in the study was *total lifetime number of sexual partners*. This variable was used in order to measure the number of sexual partners an individual have had during his or her sexual life. Here, individuals having more than one sexual partner were considered to be at greater risk of contracting STIs. Throughout the entire study, number of sexual partners and multiple sexual partnerships were used interchangeably to represent this variable. The variable was redefined as 0 = for those who had one sexual partner, and 1= for those who had more than one sexual partner.

The third characteristic considered for risky sexual behaviour was early sexual initiation. *Early age at first intercourse,* this variable was redefined as 0 = to include those who initiate sexual activity at or after 16 years and 1= to include those who initiate sexual activity before 16 years. However, the study focuses on those who initiate sexual activity before 16 years (describe as early sexual initiation) since they were at greater risk than those who initiate sexual intercourse later. By coding all those youths with sexual experience before the age of 16 years and those after 16 years I could obtain some statistical estimates.

Other variables considered in the study were categorical (independent) and some were redefined in order to obtain significant results. The variable 'religion' was redefined as 1= Other Christian, 2= Catholic, 3=CCAP, 4=Muslim, 5= others. The category 'Others' here included 'Anglican', 'Seventh Day Advent/Baptist', 'No religion' and 'Others'. The variable 'marital status' was redefined as 1=Married/Living together, 2=Never married/Not living together/Divorced/Widowed. The variable 'literacy' was redefined into 1=Able to read whole sentence, 2= cannot read at all, 3=Able to read part of sentence. The variable 'ethnicity' was redefined as 1= Chewa, 2= Lomwe, 3=Tumbuka, 4= Ngoni, 5=Yao, 6=others. The category 'other' included Tonga, Sena, Nkhonde, Mang'anja, Lambya, Ndali, Nyanja and others. The variable age 5-year group was redefined into 1= 15-19 years and 2= 20-24 years. However, the rest of the variables; residence, region, education and wealth were not redefined.

The study employs a quantitative research methodology with three approaches used in the analysis; the univariate, bivariate and multivariate models. In the univariate model, the variables considered for the study were used to describe the background characteristics of youths in the study and the result was presented using frequency distribution. The odds of youth's engagement in risky sexual behaviour was estimated using percentages by computing socio-economic and demographic characteristics such as age group, place of residence, marital status, wealth, religion, literacy, region, education levels, and ethnicity. In the bivariate analysis, a direct form of cross tabulation of socio-economic and demographic variables with the dependent variables was performed.

Chi–square tests for association between the categorical and dependent variables within the age cohorts were performed, and variables were significant at $P<0.05$. The results of the bivariate analysis were presented using males and females and comparatively with residence in order to explore the variation among males and females within the study area. All the variables that were used in the bivariate analysis were further used in the logistic regression model in order to examine the association between the dependent variables and their co-variate.

Youth's awareness of sexually transmitted infections was also measured. Respondents were asked whether they have heard of STIs and those who reported yes were further asked whether they are aware of means of preventing and transmitting STIs. The variable used was 'heard sexual transmit disease' and was redefined as No = 0 to represent those who have not heard of STIs and Yes = 1 to represent those who have heard of STIs. Here, the study examines only those who have heard of STIs and the findings were presented by sex and residence. The study then went further to investigate if those who have heard of STIs are aware of ways to avoid or prevent it. Three variables were used; those who say that STI could be prevented by using condoms (coded No = 0 and Yes = 1), those who say limiting sex to one partner will reduce the risk of contracting STIs (coded No = 0 and Yes = 1), and those who say abstaining or not having sex at all (coded No = 0 and Yes = 1). This was done for males and females in order to examine the variation in knowledge of preventing STIs. Only those who were aware that STIs could be prevented by using any of the three methods were presented in the final model.

Certain misconceptions were studied in order to examine respondent's attitudes towards such conceptions. Four variables were used in this case; those who say a healthy person can have STI (coded No = 0 and Yes = 1), those who say STI cannot be transmitted by mosquitoes (coded No = 0 and Yes = 1), those who say STI cannot be transmitted by supernatural means (coded No= 0 and Yes = 1), those who say STI cannot be transmitted by sharing food with infected persons (coded No = 0 and Yes = 1). Moreover, respondents' attitudes in negotiating safer sex were also studied in order to examine how females are justified in negotiating certain issues during sexual intercourse. The study then use two variables; are females justified to refuse sex with her husband if she knows the husband has sex with other females (coded No= 0, and Yes = 1) and are females justified to ask the husband to use a condom if she knows her husband has STI (coded No = 0 and Yes = 1). The result presented was for those who agree that a woman can do any of the two and this was done for both males and females.

Furthermore, in order to know if respondents were in support of certain programmes that concerns contraception, I study the respondent's opinion and use the variable 'should children younger than them be taught about condoms to prevent STIs?' This variable was coded No = 0 and Yes = 1 in order to get the proportion that agree or disagree. Then we further ask them whether or not a condom was readily available when in need. This variable was coded No = 0 and Yes = 1. I then obtained the result for both male and female in order to observe the variation by sex.In the multivariate analysis, binary logistic regression was performed to examine the association of the determinants of youth sexual behaviour. The use of logistic regression technique was based on condition that the dependent variables are dichotomous (i.e. with only two categories or values – for instance, some using condoms, some not using condoms). The regression model takes the form:

$$\log(P_i) = \ln\left(\frac{P_i}{1-P_i}\right) = \beta x_i$$

Where (P_i) is the probability that an individual has some knowledge of sexually transmitted infections β is the estimated regression coefficient, and the $\mathbf{x}_i$ is the independent co-variate. The ratio $\left(\frac{P_i}{1-P_i}\right)$, will be the odds of youth with a given set of characteristics using contraceptives. The estimate of β for a particular covariate $\mathbf{x}_i$ is interpreted as the difference in the predicted log odds between those who fall within that category of characteristics, and those who fall within the reference or omitted category for those characteristics. Considering the exponents of each estimate, $\beta(\exp[\beta])$ then the result can be interpreted as the relative odds of using contraceptives for those individuals with characteristics x_i relative to those individuals in the reference group. Logistic regression was performed in order to examine the association between the independent variables and their covariates and the findings were presented by sex and later on by residence in order to observe the variation within the residence. In presenting the regression findings by residence, I restricted the result by 1 to represent urban, and 2 to represent rural.

3.10 Research sample

Sampling is a procedure that involves selecting a small portion of people, elements, events, and behaviour, which is required for study (Burn, et al., 2005). A sample is thus a finite part of a statistical population whose properties are studied in order to gain information about the whole (Mugo, 2011). Thus, it is necessary that a sample be large enough for analysis to be meaningful, and data should be representative of the total population. The research sample for the current study were youths age 15-24 years and the relevant data were extracted from the Malawi Demographic Health Survey (MDHS, 2010).This age group comprised a weighted sample of 9559 females and 2987 males aged 15-24 years. Only sexually active youths were considered in the study since they were the group considered to be at risk for reproductive tract infections and sexually transmitted infections.

3.11 Reliability and Validity

These are important variables that determine how good a quantitative research is. Validity refers to the relevance of the measuring instrument, and a valid measuring instrument is one that measures the concepts or constructs it claims to measure. It shows how well a test measures what it is purported to measure, and for it to be reliable, it has to be valid (Colin, et al., 2005). Reliability on the other hand, refers to the consistency, dependability, accuracy and precision with which an instrument measures the attributes it is designed to measure (Burns, et al., 2005). Reliability is therefore, the degree to which an assessment tool produces stable and consistent results. The present study uses three types of validity; face validity to ascertain that the measure appears in such a way that it assesses the intended construct under study. Secondly, construct validity to ensure that the measurement used actually measures what it is intended to measure (the construct) and not the other variables, and the criterion validity used in order to predict the future or current performance, that is, predict the results obtained from association and that correlate with another criterion of interest.

3.12 Selected variables

The variables selected for the study were grouped into dependent and independent variables. The independent variables consisted of socio-economic and demographic variables which have certain characteristics that contributed to youth's sexual behaviour. The dependent variables on the other hand, consisted of indicators of sexual behaviour identified as early age at first sexual debut, condom use at last sexual debut, inconsistent condom use, and the number of sexual partners.

3.12.1 Demographic variables

3.12.1.1 Age groups

This question was asked to find out the age of the household members (the people) and was asked of each member of the household. Here, the enumerators had instructions to write complete years in whole numbers and not in words. The age was then captured and recoded into groups using SPSS as follows: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65+. This was the main variable known as 'youths'. With regard to the study, the variable was redefined to comprise those described as youths (15-24 years).The variable was defined as 1, for youths aged 15-19 years, and 2, for those aged 20-24years. It was then extracted from the Demographic Health Survey using the '*If condition*' in the select cases window from the data menu.

3.12.1.2 Literacy

The question about literacy of participant was done by showing a card to the respondent after letting him/her know that you want him/her to read this sentence to you. In cases where the respondent could not read whole sentences, the enumerator probed and asked him "Can you read any part of the sentence to me"? This was then categorized as follows: 0= Cannot read at all, 1= Able to read part of sentence, 2= Able to read whole sentence, 3= No card with required language, 4= Blind/visually impaired. This variable was redefined as follows:1= Able to read whole sentence, 2 = Cannot read at all/No card with required language/blind/visually impaired, 3= Able to read part of sentence.

3.12.1.3 Marital status

The question about marital status of respondents was: what is (the person's) current marital status? This however combines both modern and traditional marriages. Marital status of the participants was categorized as follows: 0=Never married, 1=Married, 2=Living together, 3=Widowed, 4=Divorced, 5=Not living together. It was redefined into two categories:1= Married or living together and2=Never married/widowed/divorced/not living together. The study did not consider questions such as 'Does the person's spouse/partner live in this household'?

3.12.1.4 Ethnicity

The question about respondent's ethnicity was "What is your tribe or ethnic group? This variable was categorized as follows: 1= Chewa, 2 = Tumbuka, 3 = Lomwe, 4 = Tonga, 5 = Yao, 6 = Sena, 7 = Nkhonde, 8 = Ngoni, 9 = other. The variable was redefined as follows:1= Chewa, 2=Lomwe, 3=Tumbuka, 4=Ngoni, 5=Yao, 6=other. The category 'other' included; Tonga, Sena, Nkhonde, Lambya, Ndali, Mang'anja, and Nyanja.

3.12.1.5 Place of residence

The question about place of residence of participants was "How long have you been living continuously in (name of current place of residence)? If less than one year, '00' years was recorded. The variable was categorized as follows: 1=Urban, 2=Rural, and was not redefined.

3.12.1.6 Region

Participants were asked to state from which region they come. The result was categorized as follows: 1=Northern, 2=Central and 3 =Southern.

3.12.2 Socio-economic variables

3.12.2.1 Highest educational level

The question about respondent's highest educational level was "what is the highest level of education that the person has completed"? This was applicable to all household members and was focused on qualifications already obtained, and this implies that current levels were not considered. Thus, the 'highest educational level' was categorized as follows; 0=No education, 1= Primary, 2=Secondary, 3=Higher.

3.12.2.2 Wealth

The question about respondent’s income was “what is your current income”? This was then collected and categorized as follows: 1=Poorest, 2=Poorer, 3=Middle, 4=Richer, 5= Richest.

3.12.2.3 Religion

The question about respondent’s religion was “what is your religion”? The variable was categorized as follows: 1=Catholic, 2=CCAP, 3=Anglican, 4=Seventh day Adventist/Baptist, 5= Other Christian, 6 =Muslim, 7 = No religion and 96 =other. The variable was redefined to 1 = Other Christian, 2 =Catholic, 3 = CCAP, 4 =Muslim, 5=other). The category ‘other’ included; ‘Anglican, Seventh day Adventist/Baptist, and ‘No religion’.

3.12.3Knowledge of STIs

In order to examine the youth’s knowledge of RTIs/STIs, the following variables were used in order to understand youth’s knowledge regarding these infections, and to know if they are aware of methods of preventing it.

The following variables were identified; ‘*heard sexual transmit disease’* and was redefined to No=0 for those who have not heard of RTIs/STIs and Yes = 1 for those who have heard of RTIs/STIs. Secondly, the variables were divided into: those who say these infections could be prevented by not having sex at all (coded No=0 and Yes=1), those who say these infections could be avoided by using condoms at all times (coded No=0 and Yes=1), and those who say RTIs/STIs could be reduced by having one sexual partner (coded No=0 and Yes=1).

In order to measure the level of misconceptions regarding the transmission of RTIs/STIs, the variables were: those who say a healthy person can have STI (coded No= 0 and Yes= 1), those who say RTIs/STIs cannot be transmitted by mosquitoes (coded No=0 and Yes=1), those who say it cannot be transmitted by supernatural means (coded No=0 and Yes=1), and those who say it cannot be transmitted by sharing food with infected persons (coded No=0 and Yes=1). Other variables were: are females justified to refuse sex with her husband if she knows the husband has sex with other females (coded No=0, and Yes=1) and are females justified to ask the husband to use condoms if she knows her husband has STIs (coded No=0 and Yes =1). The variable: ‘Should younger children be taught about condoms to prevent STIs’ (Coded No=0 and Yes=1) was used in order to get the proportion that agree or disagree. ‘Can get a condom’- this variable was coded No=0 and Yes=1. I then obtained the result for both male and female in order to observe the variation by sex. These variables had three categories, ‘yes’, ‘no’ and ‘don’t know’, and was redefined to two categories ‘yes’ and ‘no’, since the study was interested in sexually active youths. The intention here was to verify knowledge regarding RTIs/STIs, in order to recommend measures that could help improve knowledge on the pandemic.

3.12.4 Dependent Variables

Three dependent variables were identified for the study, and were the major characteristics under which risky sexual behaviours were considered. However, youths who initiate sexual activity earlier (before 16 years), those who did not use condoms during the last sexual debut, and those who had multiple sexual partners, were considered to be at greater risk of contracting RTIs/STIs. These variables were converted to binary variables during the logistic regression technique in order to assume the regression rules.

3.12.4.1 Early age at first sexual debut

This variable was coded 1= for those who initiate sexual activity before 16 years (described as early sexual debut), and 0=for those who initiate sexual activity at or after 16 years. Those who initiate sex earlier before 16 years were considered to be at risk of STIs more than those who initiate sex at or after 16 years. For the sample used in the study, N=3079 females and N=1402 males were considered in the study.

3.12.4.2 Condom use at last sexual intercourse

This variable had three categories; ‘no’, ‘yes’ and ‘don’t know’ and was redefined to a binary variable and indicated with No = 1, for those that did not use condom and Yes = 0, for those who did use condom during their last sexual intercourse. However, those who did not use condoms were at risk of contracting RTIs/STIs. For the sample used in the study, N=5652 females and N=1405 males were considered in the study.

3.12.4.3 Multiple sexual partners

Thisvariablewascoded 0=for those who had sex with one partner, and 1= for those who had sex with more than one sexual partner. Those with more than one sexual partner were considered to be at greater risk of contracting RTIs/STIs than those with one sexual partner. For the sample used in the study, N=6470 females and N=2026 males were considered in the study.

3.12.4.4 Inconsistent condom use

This variable was coded 0= for those who use condom consistently, and 1= for those who did not use condom consistently. Those that did not use consistently were considered to be at risk of infections. For the sample used in the study, N=675 females and N=511 males were considered in the study.

3.13 Statistical Analysis

The data was analysed using Statistical Package for Social Sciences (SPSS) version 22, and univariate, bivariate and multivariate analyses were carried out. The odds of the youth's sexual behaviour were estimated using frequencies and percentages. During the bivariate analysis, Chi-square test was performed to compare association between categorical variables. Furthermore, indicators of sexual behaviour such as age at first sexual debut, condom use at last sexual encounter, inconsistent condom use and number of sexual partners were analysed with some predictors and effect modifiers such as socioeconomic and demographic variables, self-esteem, beliefs and awareness of RTIs/STIs. However, the logistic regression model was then fitted into the study in order to investigate factors that were associated with youth's sexual behaviour in the multivariate analysis. The sexual behaviour indicators that were dichotomous were used in the logistic regression (dependent variable). A log likelihood test was used in order to assess the significance of factors in the logistic regression models as well as for comparison with different models during model build up. Findings were presented by gender and residence. However, the variables were restricted to 1 to represent urban, and 2 to represent rural in order to obtain findings for rural/urban variation. The socio-demographic variables were retained in the model, and logistic regression therefore had predictors whose fixed effects remained significant with demographic variables included as the control variables. The socio-economic and Demographic factors and co-variables investigated were; age group, highest educational level, region, current marital status, literacy, religion, wealth, ethnicity and place of residence. However, the following factors were also investigated;

Can the risk of RTIs/STIs be reduced by not having sex at all? Yes/No
Can the chances of contracting these infections be reduced by using condoms at all time during sex? Yes/No
Can the risk of contracting RTIs/STIs be reduced by having one sex partner?
Individual's perceptions of STIs; Have you heard of STIs?
Individual perceptions of STIs; Do you believe that a healthy person can have STIs?
Condom knowledge; would you agree that children be taught about condoms to prevent STIs at a much younger age than you? Agree/disagree

Condom accessibility; are condoms readily available when you need them? Yes/No
Condom negotiation in a relationship –Would you ask your partner to use a condom if you know he has STI? No/Yes
Have you ever asked your partner to use a condom to prevent contraction of STIs? yes/no
Misconceptions by individuals; Do you agree that RTIs/STIs can be transmitted by mosquitoes? No/Yes
Misconceptions by individuals; Do you belief that RTIs/STIs can be transmitted by supernatural means? No/Yes
Misconceptions by individuals; Do you believe that by sharing food with someone infected by STI one can contract the disease? No/Yes
All these were used in order to obtain information regarding individual's knowledge and beliefs about RTIs/STIs.

3.14 Analytical Framework

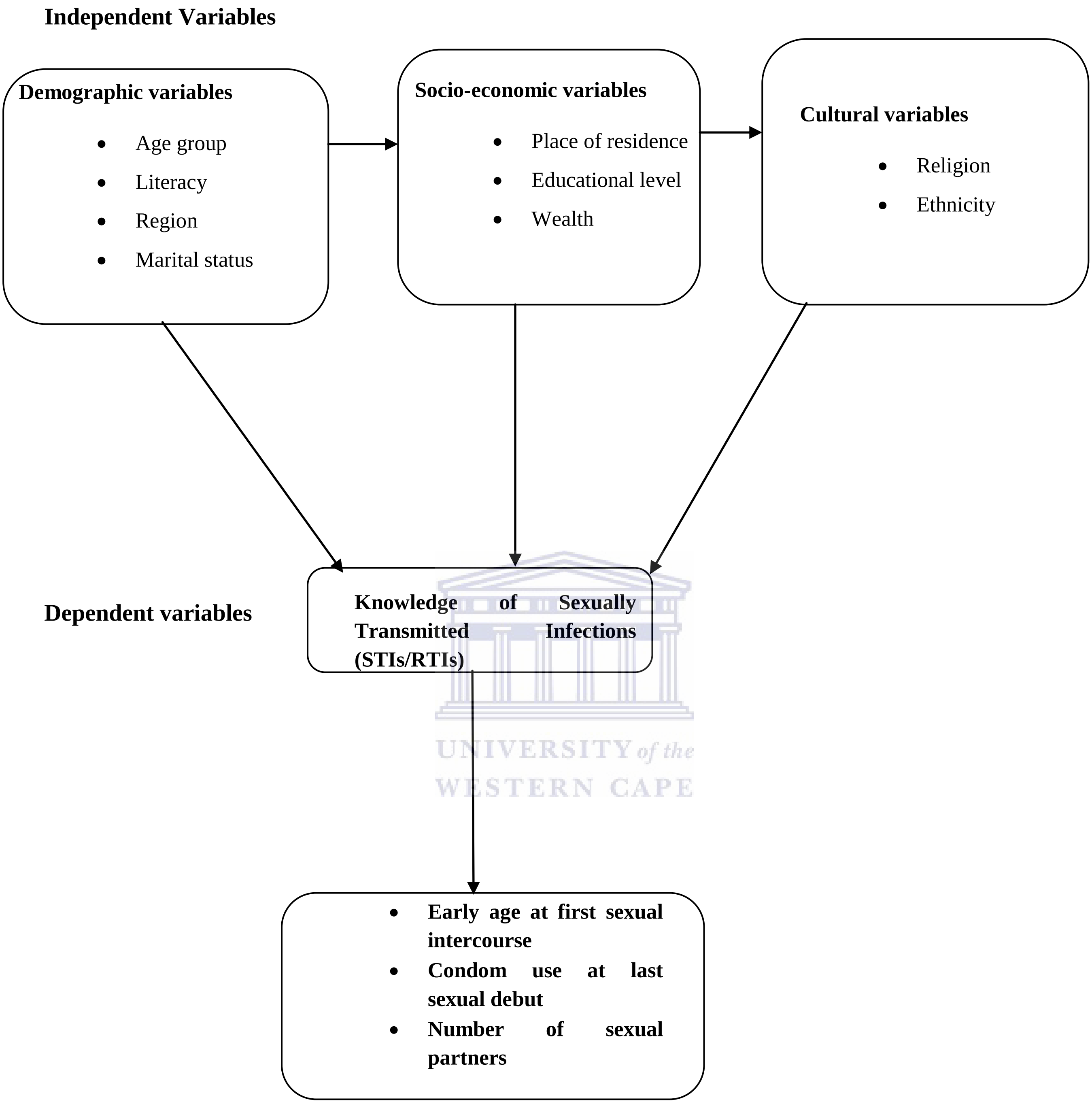


Figure 4 Diagrammatic representation of Analytical Framework

3.15 Study Limitations

Possible limitations were noticed during the course of the study. Despite the couple of adjustments made to some potential confounders by including a range of socio-economic and demographic and other measures in the model, some residual unmeasured confounding may still exist, thus, this may lead to false information. There are a number of limitations to be considered when interpreting the results from this study. When asking questions related to sexual debut, bias often arises especially on questions of sexual nature as it thus yields an underestimate or overestimate of the real situation. Moreover, the cross-sectional nature of the data limits establishing causality between sexual behaviour indicators and socio-economic and demographic characteristics.

Respondents may have had problems in remembering the actual number of sexual partners, age at first intercourse, and whether he has been using condoms consistently or inconsistently. Furthermore, questions related to condom use in past years, and issues surrounding the respondent's entire sexual life could have been affected by bias. Questions related to the impact of sexually transmitted infections were not included in the study, as some questions were not properly unpacked such as questions related to sexual power, and the question related to quality of condoms was lacking. Thus, it is necessary that one confirms the data at hand when using secondary data, as one particular question could have been of importance.

Furthermore, when asking questions related to why youths are not using condoms, and why they are initiating sexual activity earlier, and why they engage in such behaviour, it is necessary to understand that one could have produced a more comprehensive report to understand why they are behaving in such a manner. It is necessary to take serious precautions when interpreting age at first sexual intercourse as risk behaviour since the time difference between first sex and second or subsequent sexual debut and infrequency of sexual activity may vary per individual.

When conducting studies that depend solely on questionnaire data, there is always the likelihood of the introduction of an unknown degree of reported bias which is often common to all social research on sexual behaviour. Questions related to the circumstances that led to first sexual debut could have been of importance to analyse confounding, but because of limitations to the questions asked in the questionnaires, the findings could not produce results that could help answer the question. Another limitation could be the result of missing data on some of the variables, since it might have influenced the regression results.

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CHAPTER IV

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

4.1 Introduction

This chapter presents the socio-economic and demographic characteristics of youths in the study. In this section of the research, the descriptive and bivariate analysis was presented by gender and residence in order to measure variation in the determinants of risky sexual behaviour among youths. In the initial bivariate analysis, a chi-square test was performed and the result was significant at $p<0.05$. The dependent variables used in the logistic regression were redefined into binary variables (dichotomous).

4.2 Descriptive analysis of youths in the study

Table 1 below presents a descriptive analysis of youths in the study. A weighted sample of 2987 males and 9559 females aged 15-24 years was extracted from the survey.

Among males aged 15-24 years in the study, about 59% were aged 15-19 years, while about 42% were aged 20-24 years, and majority (77.3%) were in the rural areas, while about 23% were in the urban areas. On average, the current age of respondents was about 19 years. Moreover, about 45% were from the southern region, followed by 44.3% from the central region, while about 11% were from the northern region. More than half (66.2%) of the respondents had primary education, followed by (29%) with secondary education, while the minority, (2.1%) had higher education, then (2.6%) had no education. Moreover, (28.4%) were from the richest income households, followed by 20% from the richer income households, while those from the middle (18.2%), poorer (18.3%) and poorest (15.1%) income households were the minority. Furthermore, about 73% were able to read whole sentence, followed by 18.2% who could not read at all, while 9% could read part of a sentence. Majority, about 33% were other Christians, followed by about 22% who were Catholic, then CCAP (about 20%). Muslims (13.2%) and those from other religions (about 13%) were the minority. Majority, (83.1%) were never married, while about 17% were married. Most of the respondents (33.4%) were from the Chewa ethnic group, followed by about 17% from the Lomwe ethnic group, then 13.8% from other ethnic groups, about 14% from Yao and 13.4% from Tumbuka ethnic groups.

Among females in the study, 52.4% were aged 15-19 years, while about 48% were aged 20-24 years. More than half (80.3%) were from the rural area, while about 20% were from the urban area. About 44% were from the southern region, followed by 43.3% from the central region, while the minority, about 12% were from the northern region. Majority, about 69% had primary education, followed by 24.2% with secondary education, while the minority (5.3%) had no education and about 2% higher education. However, (24.3%) females were from the richest income households, followed by about 20% from middle income households, then 19.1% from the poorer households, and about 18% were from the poorest households. Most females (69.1%) were able to read whole sentence followed by about 23% who could not read at all, while 8.2% could read part of a sentence. Moreover, (37%) were other Christians, followed by about 22% who were Catholic, while the minority about 19% were CCAP, followed by 13% who were Muslims and about 10% were from other religions. About 52% were single, while about 49% were married. furthermore, 35% were from the Chewa ethnic group, followed by 16% from Lomwe, while the minority about 14% were from other ethnic groups, Yao (13.3%), Ngoni (12.4%), and from the Tumbuka (about 10%) ethnic groups.

Comparatively, there were more males (about 59%) than females (52.4%) who were aged 15-19 years, with more than half of them from the rural areas (80.3% females and 77.3% males), and were mostly from the southern region (about 45%), with equal number of males and females (about 45%). Most of them had primary education, with more females (about 69%) than males (66.2%), and from the richest households, with more males (28.4%) than females (24.3%), who could read whole sentences (about 73% males and 69.1% females), with more females (37%) than males (about 33%) from other Christian religions. Moreover, most of them were never married, with more males (83.1% males and about 52% females), and a proportion from the Chewa ethnic group (35% females and 33.4% males). However, a slight variation with males and females was noticed with the respondents in the study with more females than males.

Table 1 Socio-economic and Demographic characteristics of males/females aged 15-24 years in Malawi 2010

	MALE		FEMALE	
Background characteristics	**Weighted number of male (N=2987)**	**Percentage (100%)**	**Weighted number of female (N=9559)**	**Percentage (100%)**
Age group				
15 – 19	1748	58.5	5005	52.4
20 - 24	1239	41.5	4555	47.6
Residence				
Urban	679	22.7	1878	19.7
Rural	2308	77.3	7681	80.3
Region				
Northern	322	10.8	1132	11.8
Central	1325	44.3	4136	43.3
Southern	1341	44.9	4292	44.9
Education level				
No education	79	2.6	505	5.3
Primary	1976	66.2	6583	68.9
Secondary	868	29.0	2316	24.2
Higher	64	2.1	155	1.6
Wealth quintile				
Poorest	451	15.1	1710	17.9
Poorer	546	18.3	1822	19.1
Middle	545	18.2	1907	19.9
Richer	597	20.0	1793	18.8
Richest	849	28.4	2328	24.3
Literacy				
Able to read whole sentence	2175	72.8	6609	69.1
Cannot read/No card/Blind/Others	543	18.2	2163	22.6
Able to read part of sentence	270	9.0	788	8.2
Religion				
Other Christian	977	32.7	3536	37.0
Catholic	648	21.7	2070	21.7
CCAP	595	19.9	1782	18.6
Muslim	393	13.2	1247	13.0
Others	374	12.5	924	9.7
Marital status				
Married	505	16.9	4639	48.5
Never married	2482	83.1	4920	51.5
Ethnicity				
Chewa	997	33.4	3344	35.0
Lomwe	502	16.8	1529	16.0
Ngoni	267	9.0	1186	12.4
Tumbuka	400	13.4	910	9.5
Yao	408	13.7	1270	13.3
Others	412	13.8	1320	13.8

Source: Malawi Demographic Health Survey 2010, weighted values

4.3 Bivariate analysis

This is a form of quantitative analysis that involves the analysis of two variables for the purpose of determining empirical relationships between them. In the current study, the variables used in determining the relationship were the dependent variables identified as; condom use at last sexual intercourse, multiple sexual partnerships, inconsistent condom use, and early sexual debut, while the independent variables were identified as the socio-economic and demographic variables.

4.3.1 Condom use and non-use by background characteristics

Table 2 below presents the bivariate analysis of condom use and non-use among males and females by background characteristics. In order to fulfil the objective of the current study, only those who did not use condom during the last sexual debut were of interest in the study.

As indicated, about 63% males did not use condom during the last sexual debut, with majority of them within the age group of 20-24 years (66.4%), while more than half (57.2%) of them were aged 15-19 years. about 65% were in the rural area, while about 55% were in the urban area. Majority were from the southern region (about 68%), followed by about 61% from the central region, then about 48% from the southern region. majority did not have formal education (78.3%), while about half of them (50.0%) had higher education. moreover, 69.3% had primary education, and about 48% had secondary education. majority were from the poorest income households (71.4%), followed by those from the poorer (71.8%), then those from the middle income households (70.0%). Those from the richest (49%) and richer (55.5%) income households were the minority. Most of them could not read at all (74.3%), while 73.0% could read part of a sentence, and 58.3% were able to read whole sentence. Majority were Muslims (about 71%), followed by other Christian (66.0%), then catholic (about 59%). Those from CCAP (57%) and other religion (57.6%) were the minorities. Majority (87.3%) were married, and (49.3%) were never married. Moreover, 70.1% were from the Lomwe ethnic group, followed by 65.8% from the Chewa ethnic group, then 65.4% from the Yao, and 63.7% from other ethnic group. Those from the Tumbuka (44.9%), and Ngoni ethnic groups (52.7%) were the minority.

Among females who did not use condom in the study, about 93% were aged 15-19 years while 92.2% were aged 20-24 years. This is indicated on table 2 below. Majority, about 94% females who did not use condom lived in the rural areas, while 88% lived in the urban areas. About 94% were from the central region, followed by about 92% from the southern region, then about 91% from the northern region. More than half (97%) of them, had no education, followed by 94.2% with primary education, while about 89% had secondary education. The minorities had higher education (about 68%). Moreover, most of them (95.1%) were from the poorest income households, followed by those from the middle income households (94.5%), then those from the poorer (94.2%) households, and those from the richer (93.1%), while 87.4% were from the richest households. Majority, about 96% could not read at all, followed by those who could read part of a sentence (93.3%), while about 92% were able to read whole sentences. Majority, about 94% were Muslims, followed by other Christian (93.4%), then Catholic (92.1%), and other religions and 91.1% were CCAP. The majority were married (94.2%), while the minority (91%) were single. Moreover, majority (95%) were from the Chewa ethnic group, followed by about 92% from other ethnic groups, then about 92% from Tumbuka, and 91% from the Lomwe ethnic groups.

Among both respondents, majority of those who did not use condom were in the rural area, with more females (about 94%) than males (about 65%). Most of them could not read at all (about 96%) females and 74.3% males, and were Muslims (about 94%) females and about 71% males. Moreover, majority were married with (94.2%) females, and (87.3%) males. However, certain variation was noticed among respondents by sociodemographic characteristics. As indicated, most females who did not use condoms were aged 15-19 years, while most males were aged 20-24 years. Moreover, most females had no education (97%), while most males had primary education (69.3%). Most females (about 94%) were in the central region, while most males (about 68%) were in the southern region, and 95.1% females were from poorest income households, while most males (about 72%) were from the poorer households. Moreover, 95.2% females were from the Chewa ethnic group, while most males (70.1%) were from the Lomwe ethnic group.

Table 2 Percentage of males/females with use and non-use of condoms during their last sexual debut by background characteristics in Malawi 2010.

	MALE				FEMALE			
Background characteristics	**Did not use condom during the last sexual debut (n=881)**	**Did use condom during the last sexual intercourse (n=524)**	**Weighted number of males (N=1405)**	**p-value**	**Did not use condom during the last sexual debut (n=4941)**	**Did use condom during the last sexual intercourse (n=711)**	**Weighted number of female (N=5652)**	**p-value**
Age group				0.000				0.00
15 – 19	57.2	42.8	565		92.9	7.1	1798	
20 – 24	66.4	33.6	840		92.2	7.8	3853	
Residence				0.001				0.000
Urban	54.6	45.4	284		88.0	12.0	1056	
Rural	64.8	35.2	1120		93.7	6.3	4596	
Region				0.000				0.000
Northern	47.7	52.3	130		90.6	9.4	663	
Central	60.8	39.2	609		93.7	6.3	2334	
Southern	67.5	32.5	667		91.9	8.1	2655	
Education level				0.000				0.000
No education	78.3	21.7	46		97.0	3.0	403	
Primary	69.3	30.7	905		94.2	5.8	4015	
Secondary	47.9	52.1	424		88.6	11.4	1152	
Higher	50.0	50.0	30		67.7	32.3	81	
Wealth quintile				0.000				0.000
Poorest	71.4	28.6	238		95.1	4.9	1063	
Poorer	71.8	28.2	287		94.2	5.8	1215	
Middle	70.0	30.0	270		94.5	5.5	1192	
Richer	55.5	44.5	272		93.1	6.9	1048	
Richest	49.0	51.0	337		87.4	12.6	1135	
Literacy				0.000				0.000
Able to read whole sentence	58.3	41.7	1006		91.5	8.5	4111	
Cannot read/No card/Blind/Other	74.3	25.7	272		95.6	4.4	920	
Able to read part of sentence	73.0	27.0	126		93.3	6.7	620	
Religion				0.003				0.021
Other Christian	66.0	34.0	480		93.4	6.6	2258	
Catholic	58.9	41.1	270		92.1	7.9	1135	
CCAP	57.0	43.0	265		91.1	8.9	883	
Muslim	70.9	29.1	223		93.5	6.5	835	
Others	57.6	42.4	165		92.0	8.0	542	
Marital status				0.000				0.000
Married	87.3	12.7	496		94.2	5.8	4465	
Never married	49.3	50.7	908		91.0	9.0	1187	
Ethnicity				0.001				0.000
Chewa	65.8	34.2	444		95.2	4.8	1899	
Lomwe	70.1	29.9	241		91.0	9.0	932	
Ngoni	44.9	55.1	118		90.2	9.8	684	
Tumbuka	52.7	47.3	184		91.5	8.5	511	
Yao	65.4	34.6	214		91.3	8.7	842	
Others	63.7	36.3	204		91.7	8.3	782	

Source: Malawi Demographic Health Survey 2010

Figure 5 Percentage of males and females who did not use condoms by education levels

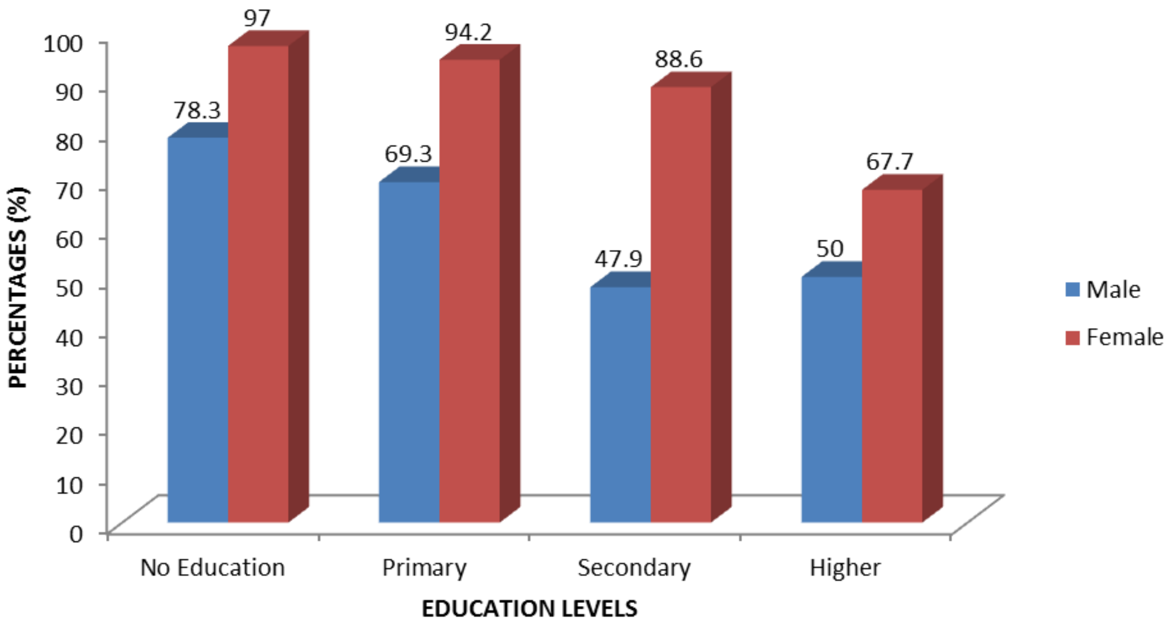


Figure 5 above indicates that, most of the youths in Malawi do not use condoms despite their high awareness of its importance. However, gender variation by education level indicates that, young males and females with no education did not use condoms, and the prevalence of non-use decreases as education level increases. For females who were not interested in condom use, the majority (97%) were not educated, and 94.2% had primary education. More than half (89%) of them had secondary education, with about 68% having higher education.

Among males who did not use condoms, 78.3% had no education, followed by 69.3% with primary education. About 45% of those with secondary education did not use condoms, while 50% of those with higher education were not interested in condoms. Comparatively, most females were not interested in condoms with majority not having formal education (97%) females and (87.3%) males, 69.3% males and 94.2% females had primary education, while about 48% males and about 89% females had secondary education. The majority of those who were not interested in condom use with higher education were females (about 68%), than males (50%).

4.3.2 Condom use and non-use among males and females by residence

Table 3 below presents the bivariate analysis of rural/ urban differentials in condom use and non-use among respondents by background characteristics.

Among rural males who did not use condoms, about 76% were aged 20-24 years, while 75.2% were aged 15-19 years. Moreover, about 93% were in the northern region, 80.3% in the central region, while 64.1% were in the southern region. Majority had primary education (86%), while 80% had no education, 64.3% had secondary education, while (33.3%) had higher education. More than half of them were Catholic (81.1%), followed by about 78% who were other Christian, then about 71% were Muslim, while 69.3% were CCAP males. The prevalence of non-use of condoms was higher among married males (87.3%) than their never married (about 74%) counterparts. About 99% were from the poorer income households, followed by about 96% from the poorest and about 94% from the middle income households. Those from the richer (81%) and richest (about 44%) income households were the minority. Majority,(90%) could not read at all, followed by those who could read part of a sentence (85.3%), then (72.1%) who were able to read whole sentence. Most of them, (84.4%) were from the Ngoni ethnic group, followed by about 81% from the Chewa ethnic group, then those from other (about 80%) ethnic groups, while about 66% were from the Yao and 67.4% from the Tumbuka ethnic groups.

Among rural females who did not use condoms, about 82% were aged 15-19 years, while about 81% were aged 20-24 years. About 89% were in the northern region, followed by those in the central region (82.2%), then about 79% in the southern region. About 91% had no education, followed by about 88% with primary education, then 62.3% had secondary education, while about 22% had higher education. Moreover, 83% were Other Christians, followed by about 83% Catholic, then 82.2% were Muslims. About 78% were from CCAP religion while 77.3% other religions. About 84% were married, while about 79% were single. Almost all of them (97%) were from the poorest income households, followed by about 97% from the poorer income households, and then about 94% were from the middle income households. Those from the richer (83.4%) and richest (43%) income households were the minority. More than half (92.1%) were able to read part of a sentence, while 89.3% could not read at all, and 77.3% were able to read whole sentences. Majority were from the Tumbuka (85.1%), followed by those from the Chewa (85%) ethnic groups, then those from the Yao (80%) and other ethnic groups (80.4%). About 78% were from the Lomwe and about 75% from the Ngoni.

Among both respondents (males and females) who did not use condom during the last sexual debut in the rural area, a great variation by socio-economic and demographic characteristics was evidenced. As indicated, most rural males who did not use condoms were aged 20-24 years (about 76%), while most females were aged 15-19 years (about 82%), majority (86%) had primary education, while about 91% rural females had no education. Moreover, 81.1% males were Catholic, while 83% females were other Christian. Most rural males (about 99%) were from the poorer income households, while most rural females who did not use condom (97%) were from the poorest income households. Moreover, most males (90%) could not read at all, while most females (92.1%) could read part of a sentence. Most rural males were from Ngoni ethnic group (84.4%), while most rural females (85.1%) were from the Tumbuka ethnic group. The study shows great variation among respondents, thus suggesting that socio-economic and demographic factors play an important role in respondent's non-use of condom.

Within the urban area, about 25% of males who did not use condoms were aged 15-19 years, while about 25% were aged 20-24 years. The prevalence of non-use of condom was higher among males in the southern region (about 36%), followed by those in the central region (about 20%), while those from the northern region (7.2%) were the minority. About 67% of them had higher education, followed by about 36% with secondary education, while 20% had no education, and 14% had primary education. Moreover, about 31% were from the CCAP religion, followed by (29.2%) who were Muslims, then 24.3% were from other religions, while 22.1% were other Christian. About 19% Catholic males were not interested in condom use. Moreover, (26.3%) were never married, while (about 13%) were married with most of them from the richest (56.1%) income households, followed by those from the richer income households (19%), then those from the middle income households (6.1%). Those from the poorest (4.5%) and poorer (1.3%) income households were the minority. About 28% were able to read whole sentences, followed by about 15% could read part of a sentence, while (10%) could not read at all. Most of them were from the Yao (34.2%) ethnic group, followed by about 33% from the Tumbuka ethnic groups, then 29.2% were from the Lomwe ethnic group, while 20.3% were from other ethnic groups, and the minority were from Chewa (19.1%) and Ngoni (about 16%) ethnic groups.

Among urban females who did not use condoms, 19.2% were aged 20-24 years, while 18.2% were aged 15-19 years. Majority were in the southern region (about 22%), followed by those in the central region (about 18%), while the minority (11.3%) were in the northern region. However, 78.3% had higher education, followed by about 38% with secondary education, while the minority had primary (12.1%), and no education (9.4%). Moreover, about 23% were from other religions, followed by 22.1% from the CCAP, and then about 18% were Muslims, while 18% were Catholic. Other Christians (17%) were the minority. Furthermore, 21.1% were never married, while 16.2% were married, with more than half (57%) of them from the richest income households. About 17% were from the richer income households, while those from the middle (6.2%), poorer (3.4%) and poorest (3.0%) income households were the minority. Moreover, about 23% were able to read whole sentences, while about 11% could not read at all, and about 8% could read part of a sentence. Majority (25.1%) were from Ngoni ethnic group, followed by about 23% from the Lomwe, 20% from the Yao, while about 20% were from other ethnic groups. Those from the Chewa (15%), and Tumbuka (about 15%) were the minority.

Comparatively among respondents in the urban areas who did not use condoms, the prevalence of not using a condom was almost level between urban males (19%) and their female counterparts (17.1%), with more males (about 36%) than females (about 22%) in the southern region. Majority had higher education with more females (78.3%) than males (about 67%). Most the respondents were from the richest income households (56.1%) males, and (57%) females, who could read whole sentences with (about 28%) males and 23% females. However, certain differences were noticed from the study.As indicated, most females (about 19.2%) who did not use condoms were aged 20-24 years, while most males (about 25%) were aged 15-19 years. Most males were single (26.3%), while most females (21.1%) were married. Moreover, about 31% males were CCAP, while about 23% females were from other religions. Most urban males (34.2%) were from the Tumbuka ethnic group, while most females (25.1%) were from the Ngoni ethnic group.

On the other hand, comparing rural/urban males who did not use condoms, majority were in the rural rather than in the urban areas, with about 76% males aged 20-24 years in the rural areas, and about 25% females aged 15-19 years in the urban areas. Most rural males (about 93%) were in the northern region, while most urban males were in the southern region (about 36%). Among rural males, majority had primary education (86%), while among urban males, majority had higher education (about 67%). However, 81.1% of rural males who did not use condoms were Catholic, while about 31% of urban males were CCAP, and most (87.3%) rural males were married, while most (26.3%) urban males were single. Almost all rural males (about 99%) were from the poorer households, while most urban males (56.1%) were from the richest households. Majority of rural males (90%) could not read at all, most urban males (about 28%) could read whole sentences, and 84.4% rural males were from the Ngoni ethnic group, while majority of urban males (34.2%) were from the Yao ethnic group.

Comparing rural/urban females who did not use condoms, age group, region, education, religion, wealth, marital status and ethnicity gave variation among respondents. As indicated in the table 3 below, about 82% were aged 15-19 years in the rural areas, and about 19.2% aged 20-24 years in the urban area. Most rural females (about 89%) were in the northern region, while most urban females were in the southern region (about 22%). Most rural females had no education (about 91%), while urban females had higher education (78.3%). Majority (83%) of rural females were other Christian, while about 23% of urban females were from other religions, and about 84% rural females were married, while 21.1% urban females were single. More than half of all rural females

(97%) were from the poorest households, while (57%) urban females were from the richest households. Most rural females (92.1%) could read part of a sentence, while most urban females (about 23%) could read whole sentences, and 85.1% of rural females were from the Tumbuka ethnic group, while most urban females (25.1%) were from the Ngoni ethnic group.

Table 3 Percentage of rural/urban males and females with regards to use and non-use of condom during last intercourse by background characteristics in Malawi, 2010

	RURAL				URBAN			
	MALE		FEMALE		MALE		FEMALE	
Background characteristics	Did not use condom	Did use condom	Did not use condom	Did use condom	Did not use condom	Did use condom	Did not use condom	Did use condom
Age group								
15 – 19	75.2	78.4	81.8	71.9	24.8	21.6	18.2	28.1
20 – 24	75.5	76.6	80.8	65.0	24.5	23.4	19.2	35.0
Region								
Northern	92.8	93.3	88.7	92.5	7.2	6.7	11.3	7.5
Central	80.3	78.6	82.2	59.5	19.7	21.4	17.8	40.5
Southern	64.1	73.2	78.5	67.3	35.9	26.8	21.5	32.7
Education								
No education	80.0	87.0	90.6	93.3	20.0	13.0	9.4	6.7
Primary	86.0	86.0	87.9	83.8	14.0	14.0	12.1	16.2
Secondary	64.3	58.8	62.3	54.8	35.7	41.2	37.7	45.2
Higher	33.3	26.5	21.7	16.0	66.7	73.5	78.3	84.0
Religion								
Other Christian	77.9	81.8	83.0	75.3	22.1	18.2	17.0	24.7
Catholic	81.1	82.0	82.5	64.4	18.9	18.0	17.5	35.6
CCAP	69.3	75.3	77.9	70.4	30.7	24.7	22.1	29.6
Muslim	70.8	73.7	82.2	62.5	29.2	26.3	17.8	37.5
Others	75.7	67.1	77.3	56.8	24.3	32.9	22.7	43.2
Marital status								
Married	87.3	85.7	83.8	78.3	12.7	14.3	16.2	21.7
Never married	73.7	75.9	78.9	62.4	26.3	24.1	21.1	37.6
Wealth								
Poorest	95.5	97.1	97.0	98.8	4.5	2.9	3.0	1.2
Poorer	98.8	97.0	96.6	99.0	1.3	3.0	3.4	1.0
Middle	93.9	91.4	93.8	97.1	6.1	8.6	6.2	2.9
Richer	81.0	79.8	83.4	76.6	19.0	20.2	16.6	23.4
Richest	43.9	42.3	43.0	35.4	56.1	57.7	57.0	64.6
Literacy								
Able to read whole sentence	72.1	73.1	77.3	63.2	27.9	26.9	22.7	36.8
Cannot read at all	90.0	89.4	89.3	82.1	10.0	10.6	10.7	17.9
Able to read part of sentence	85.3	88.1	92.1	98.1	14.7	11.9	7.9	1.9
Ethnicity								
Chewa	80.9	87.1	85.0	74.1	19.1	12.9	15.0	25.9
Lomwe	70.8	76.7	77.5	63.5	29.2	23.3	22.5	36.5
Ngoni	84.4	80.8	74.9	57.4	15.6	19.2	25.1	42.6
Tumbuka	67.4	61.5	85.1	77.9	32.6	38.5	14.9	22.1
Yao	65.8	70.4	80.0	60.9	34.2	29.6	20.0	39.1
Others	79.7	75.4	80.4	78.9	20.3	24.6	19.6	21.1

Source: Malawi Demographic Health Survey 2010, weighted cases

4.3.3 Consistent and inconsistent condom use by background characteristics

Table 4 presents the bivariate analysis of males and females who consistently and inconsistently use condoms by background characteristics. For the purpose of the current study, only those that reported inconsistent condom use were considered and the findings were presented by gender and residence. According to the study findings, most of the respondents reported consistent condom use as indicated by their higher percentages on table 4 below.

Among males who reported inconsistent condom use, age group, region, education, marital status, wealth and ethnicity were statistically significant. As indicated, about 7% males aged 20-24 years did not use condoms consistently, while about 4% were aged 15-19 years. Moreover, about 9% were in the northern region, followed by about 5% in the central region, while 4.3% were in the southern region. Furthermore, 7.2% had secondary/higher education, while 5.1% had no education, then about 4% had primary education. The study further found that, 6.1% were from the richer income households, while 4% were from the poorer income households, while about 4% were in the average household. Moreover, 8.1% were married, while 4.3% were never married. About 9% were from Ngoni ethnic group, 7.3% from the Tumbuka ethnic group, and 5.4% from the Yao ethnic group. However, about 4% were from the Chewa, 3.4% from the Lomwe, while about 5% were from the other ethnic groups.

Among female respondents who reported inconsistent condom use, place of residence, wealth, education levels, marital status, literacy, religion and ethnicity were statistically significant. As indicated, majority of those who reported inconsistent condom use were in the rural (37.3%) followed by those in the urban (32.1%) areas. Moreover, 40.2% had primary education, followed by about 31% with no education, while 30.4% had secondary/higher education. Furthermore, (43.0%) were from the average income households, followed by about 43% from the poorer households, while about 31% were in the richer income households. About 48% were illiterate, while about 34% were literate, with about 79% who were never married, while about 40% were married. Majority, 42.1% were Muslims, followed by (about41%) who were other Christian, then (about 35%) CCAP, and 33.1% Catholic, while the minority 19.2% were from other religion. Majority were from the other ethnic group (about 46%), followed by those from the Lomwe (37%), then those from the Yao

(36.2%), Chewa (about 36%), and Tumbuka (about 32%) the minorityabout 28% were from the Ngoni ethnic group.

Comparatively among both respondents by socio-economic and demographic characteristics, the study found that most respondents who reported inconsistent condom use were aged 20-24 years (6.7%) males and 38.7% females, and from the rural area (5%) males and (37.3%) females, in the northern region (8.7%) males and (39.2%) females. Within each socio-economic and demographic characteristic, females were more likely than males to report inconsistent condom use.

However, variation was evident especially interms of education whereby, most males who reported inconsistent condom use had secondary/higher education (7.2%), while most females (40.2%) had primary education. moreover, wealth was also evident and male respondents who reported inconsistent condom use were in the richer income households, while females were in the average income households. Similarly, most females were never married (about 79%), while most males (8.1%) were married. Moreover, most females who reported incosnsitent condom use were from the Lomwe (37%) ethnic group, while most males were from the Ngoni (8.6%) ethnic group.The study therefore indicate that inconsistent condom use was low among sexually active youths, with females (n=240) more likely to report inconsistent use of condom than their male (n=147) counterparts. This therefore indicates that females were at greater risk for RTIs/STIs than males considered in the study. Thus, consistent condom use entails reduction in the spread of RTIs/STIs among sexually active youths.

Table 4 Percentage of Males/Females with regard to Consistent and inconsistent use of condom by background characteristics in Malawi 2010

	MALE				FEMALE			
Background characteristics	Inconsistent condom use (n= 147)	Consistent condom use (n=364)	Weighted number of males (N=511)	p-values	Inconsistent condom use (n=240)	Consistent condom use (n=435)	Weighted number of females (N=675)	p-values
Age group				0.000				0.903
15-19	3.7	96.3	238		32.4	64.6	339	
20-24	6.7	59.3	274		38.7	61.3	336	
Residence				0.626				0.000
Urban	4.6	95.4	124		32.1	67.9	224	
Rural	5.0	95.0	387		37.3	62.7	451	
Region				0.003				0.583
Northern	8.7	91.3	68		39.2	60.8	102	
Central	4.6	95.4	236		36.2	63.8	243	
Southern	4.3	95.7	207		33.8	66.2	331	
Education				0.000				0.000
No education	5.1	94.9	10		30.8	69.2	13	
Primary	3.8	96.2	275		40.2	59.8	356	
Secondary/Higher	7.2	92.8	226		30.4	69.6	306	
Wealth				0.015				0.000
Rich	6.1	93.9	284		30.5	69.5	400	
Average	3.5	96.5	81		43.0	57.0	100	
Poor	4.0	96.0	146		42.9	57.1	175	
Literacy				0.596				0.000
Literate	5.1	94.9	441		33.8	66.2	589	
Illiterate	4.1	95.9	70		47.7	52.3	86	
Religion				0.106				0.010
Other Christian	5.7	94.3	158		40.9	59.1	220	
Catholic	3.7	96.3	107		33.1	66.9	157	
CCAP	4.4	95.6	112		34.7	65.3	150	
Muslim	5.3	94.7	65		42.1	57.9	76	
Other	5.3	94.7	70		19.2	80.8	73	
Marital status				0.000				0.000
Married	8.1	91.9	62		39.5	60.5	248	
Never married	4.3	95.7	450		78.7	21.3	428	
Ethnicity				0.002				0.000
Chewa	3.6	96.4	149		35.6	64.4	149	
Lomwe	3.4	96.6	68		37.0	63.0	135	
Ngoni	8.6	91.4	65		27.9	72.1	111	
Tumbuka	7.3	92.8	83		31.5	68.5	73	
Yao	5.4	94.6	74		36.2	63.8	105	
Others	4.8	95.2	72		45.6	54.4	103	

Source: Malawi Demographic Health Survey 2010, weighted cases

4.3.4 Consistent and Inconsistent condom use by place of residence

Table 5 below presents the bivariate analysis of rural/urban males and females who reported inconsistent and consistent use of condom by background characteristics. For the purpose of the study, only those who reported inconsistent condom use were of importance in the study since they were considered to be at greater risk for RTIs/STIs.

Among rural males who reported inconsistent condom use, 83.1% were aged 20-24 years, while 73% were aged 15-19 years. Majority (96.4%) were in the northern region, followed by about 87% in the central region, while 61.4% were in the southern region. All of the respondents had no education, followed by about 65% with secondary/higher education, while about 90% had primary education. Moreover, all of them were from the average income households, followed by 67% from the richer income households, then 95% inform the the poorer income households. Moreover, about 91% were illiterate, while about 77% were literate. Majority (about 86%) were Muslims, followed by 83.3% who were Catholic, and then about 79% were from other religions. furthermore, 76.4% were other Christians, while 73.1% were from CCAP religion. Majority (about 98%) were married, while about 72% were never married. Most of the respondents (94.4%) were from Chewa ethnic group, followed by 86.4% from the Yao and 90% from other ethnic groups. Moreover, about 74% were from Tumbuka, followed by about 71% from the Lomwe ethnic group, while 55.2% were from the Ngoni ethnic group.

Among rural females who reported inconsistent condom use, majority (about 82%) were aged 15-19 years, while 80.4% were aged 20-24 years. About 89% were in the northern region; about 82% were in the central region, while about 79% were in the southern region. About 91% had no education, followed by about 88% with primary education, while about 60% had secondary education. About 97% were from the poorer income households, followed by about 61% from the richer income households, and then about 94% were from the average income households. Moreover, 89.1% were illiterate, while about 79% were literate, with about 83% being other Christians, followed by (82.1%) Catholic, then about 82% was Muslims. However, about 78% were CCAP, while 77.3% were from other religions. Majority (83.4%) were married, while about 79% were never married, with 85.1% from the Ngoni ethnic group, followed by about 85% from the Chewa ethnic group, while about 81% were from other ethnic groups. However, 79.2% were from the Yao, followed by 77.4% from the Lomwe, while about 75% were from the Tumbuka ethnic group.

Comparing rural males and females who reported inconsistent condom use, the study found that region, education, literacy, marital status and ethnicity gave similar results when controlled with socio-economic and demographic variables. As indicated, most rural respondents who reported inconsistent condom use were in the northern region (96.4%) males and (about 87%) females, with no education (about 91%) females, and all males, being illiterates (about 91%) males and 89.1%) females, who are married (about 98%) males and (83.4%) females, and from the chewa ethnic group (94.4%) males and about 85% females. However, variation among respondents was evident by age group. As indicated, most females who reported inconsistent condom use (about 82%) were aged 15-19 years, while most males (83.1%) were aged 20-24 years. similarly, interms of wealth, most females who reported inconsistent condom use were from the poorer income households (about 97%), while all the males were from the average income households. Finally, most females were from the other Christian religion (about 83%), while most males (about 86%) were Muslims.

Among urban males who reported inconsistent condom use, 27% were aged 15-19 years while about 17% were aged 20-24 years. About 39% were in the southern region, followed by 13.1% in the central region, then about 4% in the northern region. Moreover, 35.3% had secondary/higher education, while none of them was without education, and about 11% had primary education. Among those in the richer income households, 33% reported inconsistent condom use, followed by 5% from the poorer income households while none of them were from the average income households. Moreover, 23.4% were literate, while 9.1% were illiterate, and about 27% were from the CCAP religion, followed by about 24% from other Christians, while 21.1% were from other religions. However, among Catholic males, about 17% reported inconsistent condom use, followed by 14.3% of Muslims who also reported inconsistent condom use.. Moreover, 28.3% of them were never married while 2.4% were married. About 45% were from the Ngoni ethnic group, followed by 29.4% from the Lomwe ethnic group, then 26.1% from the Tumbuka ethnic groups. Moreover, about 14% were from the Yao ethnic group, followed byabout 6% from the Chewa ethnic groups did not use condoms consistently.

Among urban females who reported inconsistent condom use, about 20% were aged 20-24 years while 18.3% were aged 15-19 years. However, 21.3% were in the southern region, followed by about 19% in the central region, while 11.3% were in the northern region. Moreover, 40.3% had secondary/higher education, while 9.3% had no education, and 12.1% with primary education. Furthermore, 39.2% were in the richer income households, while 3.1% were in the poorer income households, and 6.2% in the average income households. The study found that, 21.3% of the respondents were literate, while about 11% were illiterate, and 22.1% were from the CCAP religion, followed by those who were from other religion (about 23%), then muslims (18.4%), and catholic (about 18%). However, other Christian (17.1%) was the minority. Furthermore, 21.3% of those who reported inconsistent condom use were never married, while about 17% were married. Moreover, 25.4% were from the Tumbuka, followed by about 23% who were from the Lomwe ethnic group, while about 21% were from the Yao ethnic groups. Moreover, 19.4% were from other ethnic groups, followed by 15.3% from the Chewa, then about 15% from the Ngoni ethnic group.

Comparing urban males and females who reported inconsistent condom use, the study found that region, education, wealth, literacy, and marital status gave similar findings when controlled with socio-demographic variables. As indicated, most respondents who reported inconsistent condom use in the urban area were in the southern region (about 39%) males and (21.3%) females, with secondary education (40.3%) females and (35.3%) males, from the richer income households (39.2%) females and 33% males, and were literate (23.4%) males and 21.3% females, and being single (28.3%) males and 21.3% females. However, variation among respondents was evident by age group. As indicated, most females who reported inconsistent condom use (about 20%) were aged 20-24 years, while most males (27%) were aged 15-19 years. Similarly, interms of religion, most females who reported inconsistent condom use were Muslims (about 23%), while most males (about 27%) were from the CCAP religion. Finally, most females were from the Tumbuka (25.4%) ethnic group, while most males (about 45%) were from the Ngoni ethnic group.

Table 5 Percentage of rural/urban Males and females who use condom consistent and inconsistently by background characteristics in Malawi 2010

	RURAL				URBAN			
	MALE		FEMALE		MALE		FEMALE	
Background characteristics	Did not use condom consistently	Did use condom consistently	Did not use condom consistently	Did use condom consistently	Did not use condom consistently	Did use condom consistently	Did not use condom consistently	Did use condom consistently
Age group								
15-19	73.0	78.1	81.7	67.2	27.0	21.9	18.3	32.8
20-24	83.1	75.8	80.4	62.3	16.9	24.2	19.6	37.7
Region								
Northern	96.4	92.9	88.7	95.1	3.6	7.1	11.3	4.9
Central	86.9	78.6	81.5	61.9	13.1	21.4	18.5	38.1
Southern	61.4	72.2	78.7	58.9	38.6	27.8	21.3	41.1
Education								
No education	100.0	85.5	90.7	90.0	0.0	14.5	9.3	10.0
Primary	89.5	85.8	87.9	79.8	10.5	14.2	12.1	20.2
Secondary	64.7	57.5	59.7	48.8	35.3	42.5	40.3	51.2
Wealth								
Rich	67.0	57.5	60.8	45.9	33.0	42.5	39.2	54.1
Average	100.0	91.6	93.8	100.0	0.0	8.4	6.2	0.0
Poor	95.0	97.2	96.9	98.0	5.0	2.8	3.1	2.0
Literacy								
Literate	76.6	74.4	78.7	62.8	23.4	25.6	21.3	37.2
Illiterate	90.9	89.4	89.1	84.4	9.1	10.6	10.9	15.6
Religion								
Other christian	76.4	81.3	82.9	73.8	23.6	18.7	17.1	26.2
Catholic	83.3	81.8	82.1	61.9	16.7	18.2	17.9	38.1
CCAP	73.1	74.2	77.9	65.3	26.9	25.8	22.1	34.7
Muslim	85.7	72.3	81.6	63.6	14.3	27.7	18.4	36.4
Others	78.9	68.1	77.3	52.5	21.1	31.9	22.7	47.5
Marital status								
Married	97.6	85.1	83.4	84.8	2.4	14.9	16.6	15.2
Never Married	71.7	75.6	78.7	59.1	28.3	24.4	21.3	40.9
Ethnicity								
Chewa	94.4	85.8	84.7	74.2	5.6	14.2	15.3	25.8
Lomwe	70.6	76.1	77.4	55.3	29.4	23.9	22.6	44.7
Tumbuka	73.9	82.4	74.6	53.2	26.1	17.6	25.4	46.8
Ngoni	55.2	63.3	85.1	72.5	44.8	36.7	14.9	27.5
Yao	86.4	68.7	79.2	62.7	13.6	31.3	20.8	37.3
Others	90.0	75.5	80.6	75.0	10.0	24.5	19.4	25

Source: Malawi Demographic and Health Survey 2010

4.3.5 Early sexual debut by background characteristics

Table 6 below presents the bivariate analysis of males and females who initiate sexual activities early (before 16 years), and or later by background characteristics. However, based on the current study, only those who reported early sexual debut were of importance and this was considered because they were at greater risk for RTIs/STIs. Only those variables that gave significant results were considered to be determinants of early sexual debut as mentioned earlier in the previous chapter.

Among males who reported early sexual debut, age group, region, education levels, wealth, religion, marital status, condom use and ethnicity were statistically significant. As indicated, about 46% of those who reported early sexual debut were aged 15-19 years, while 13.1% were aged 20-24 years. Moreover, 43.2% were from the northern region, followed by 32.3% from the central region, then (29.4%) from the southern region. About 35% had primary education, followed by about 28% with secondary education, and then about 27% had no education, while (23.4%) had higher education. Moreover, 37.3% were from the richest income households, followed by 32% from richer income households, while 30.4% were from the poorest income households, then 29% from the middle, and about 29% from poorer income households. About 33% could read part of a sentence, followed by 32.2% who could read whole sentence, while 31.3% could not read at all. Moreover, 35% were Catholic, followed by about 35% who were from CCAP religion, then 32.1% from other religion, and 32.2% from other Christian, while about 24% were Muslims. About 39% were never married, while married counterparts were not applicable. Almost half of them (40.1%) were from the Ngoni ethnic group, followed by (34.3%) from the Chewa ethnic group, then (30.5%) from the Tumbuka ethnic group, and about 32% from other ethnic groups. About 29% were from the Lomwe, and about 28% from the Yao ethnic groups. Moreover, about 39% of those who initiate sexual activities early did not use condoms, while none of them reported condom use.

Among females who reported early sexual debut, age group, region, education, wealth, literacy, religion, marital status, and ethnicity were statistically significant. As indicated, about 85% females who reported early sexual debut were aged 15-19 years, while 39.1% were aged 20-24 years. Moreover, 67.3% were in the southern region, followed by about 61% in the northern region, while about 59% were in the central region. More than half (65.3%) had primary education, followed by about 60% with secondary education, while 51% had no education, and about 48% with higher education. Moreover, 66.2% were from the richest income households, followed by about 65% in the richer households, then about 62% in the poorer income household. About 61% were from the middle income households, while 60.3% were from the poorest households. About 65% could read whole sentence, while about 59% could not read at all. However, about 61% were able to read part of a sentence. Majority, (about 68%) were Muslims, followed by Catholic (63.3%), then CCAP (63%), and other (63.3%) religion, while about 61% were other Christians. About 85% were never married, while about 40% were married, with about 68% from the Lomwe and (about 68%) from the Yao ethnic groups, followed by (65.3%) from other ethnic groups, then (about 63%) from Ngoni ethnic group. However, about 60% were from the Tumbuka ethnic group, and about 59% from Chewa ethnic groups. More than half (about 64%) did not use condoms, while about 51% reported condom use.

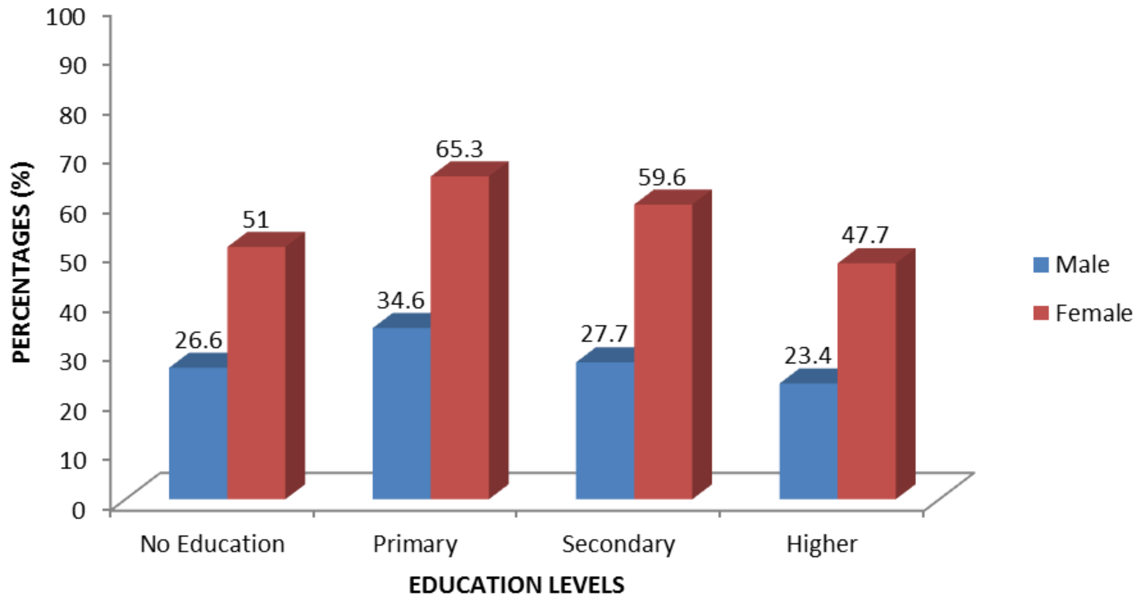
Comparatively among males and females who reported early sexual debut, age group, education, wealth, marital status and condom use were statistically significant with similar result by socio-demographic characteristics. As indicated most respondents who reported early sexual debut were aged 15-19 years (about 85%) females and (about 46%) males. Moreover, most of them were in the urban areas (about 64%) females, and (33%) males were single, (about 85%) females and (about 39%) males and majority did not use condoms (about 64%) females and about 39% males. More than half of them had primary education, (65.3%) females, and about 35% males. However, variation was evident from region, literacy, religion and ethnicity among respondents. As indicated, most females (67.3%) who reported early sexual debut were in the southern region, while most males (43.2%) were in the northern region. Most (66.2%) females were from the richest households, while most males (32%) were from richer households. Moreover, females who reported early sexual debut were able to read whole sentences (about 65%), while males (about 33%) could read part of a sentence. Moreover, most females were Muslims (about 68%), while most males (35%) were Catholic, and females who initiate sexual debut early were from the Lomwe (about 68%) ethnic group, while males were from the Ngoni (40.1%) ethnic group.

Table 6 Percentage of males/females engaged in early sexual debut (before 16 years) by background characteristics in Malawi 2010

Background characteristics	MALE Engaged in early sexual debut (n=679)	MALE Did not engage in early sexual debut (n=726)	MALE Weighted number of males (N=1405)	MALE p- value	FEMALE Engaged in early sexual debut (n=2138)	FEMALE Did not engage in early sexual debut (n=3079)	FEMALE Weighted number of female (N=5217)	FEMALE p-value
Age group				0.000				0.000
15 – 19	45.7	54.3	565		84.5	15.5	3854	
20 – 24	13.1	86.9	840		39.1	60.9	1363	
Residence				0.579				0.517
Urban	33.0	67.0	285		63.5	36.5	1039	
Rural	31.9	68.1	1120		62.7	37.3	4178	
Region				0.000				0.000
Northern	43.2	56.8	130		60.9	39.1	584	
Central	32.3	67.7	608		58.9	41.1	2128	
Southern	29.4	70.6	667		67.3	32.7	2504	
Education level				0.001				0.000
No education	26.6	73.4	46		51.0	49.0	218	
Primary	34.6	65.4	905		65.3	34.7	3744	
Secondary	27.7	72.3	424		59.6	40.4	1188	
Higher	23.4	76.6	30		47.7	52.3	68	
Wealth quintile				0.002				0.000
Poorest	30.4	69.6	238		60.3	39.7	914	
Poorer	28.8	71.2	286		61.5	38.5	960	
Middle	29.0	71.0	271		60.7	39.3	977	
Richer	32.0	68.0	273		64.8	35.2	1013	
Richest	37.3	62.7	337		66.2	33.8	1352	
Literacy				0.894				0.000
Able to read whole sentence	32.2	67.8	1007		64.5	35.5	4118	
Cannot read/No card/Blind	31.3	68.7	272		58.8	41.2	1000	
Able to read part of sentence	32.7	67.3	126		60.7	39.3	99	
Religion				0.002				0.001
Other Christian	32.2	67.8	481		60.9	39.1	1843	
Catholic	35.0	65.0	270		63.3	36.7	1144	
CCAP	34.5	65.5	266		62.9	37.1	995	
Muslim	23.7	76.3	223		67.9	32.1	731	
Others	32.1	67.9	166		62.9	37.1	505	
Marital status				0.000				0.000
Married	na	100.0	497		39.7	60.3	1318	
Never married	38.7	61.3	908		84.8	15.2	3898	
Ethnicity				0.005				0.000
Chewa	34.3	65.7	443		58.8	41.2	1734	
Lomwe	28.7	71.3	241		67.9	32.1	889	
Ngoni	40.1	59.9	118		62.9	37.1	658	
Tumbuka	30.5	69.5	184		59.8	40.2	462	
Yao	27.7	72.3	214		67.5	32.5	728	
Others	31.6	68.4	205		65.3	34.7	747	
Condom use				0.000				0.000
No	38.9	61.1	523		63.9	36.1	4973	
Yes	0.0	100.0	881		50.8	49.2	243	

Source: Malawi Demographic and health survey 2010, weighted values

Figure 6 Percentage of males/females who initiate sexual activities early by educational levels



Most females initiate sexual activities earlier than their male counterparts depending on their educational levels. According to figure 6 above, most females who initiate sexual activities early had primary education (65.3%), followed by those with secondary education (about 60%). However, the minority were those with no education (51%) and higher education (about 48%). Among the male counterparts, majority of those who initiate sexual activities early had primary education (about 35%), followed by those with secondary education (about 28%), then those with no education (about 27%). The minority were those with higher education (23.3%). According to the study, early sexual debut reduces as education level increases, thus education is a determinant of early sexual debut among male and female respondents.

4.3.6 Early sexual debut among males and females by residence

Table 7 below presents a bivariate analysis of rural/ urban variation in early sexual debut among males/females aged 15-24 years by socioeconomic and demographic characteristics. Respondents who reported early sexual debut were considered to be at risk for RTIs/STIs.

Among rural males who reported early sexual debut, about 79% were aged 15-19 years, while 67.3% were aged 20-24 years. Majority, (92.1%) were in the northern region, followed by (77.3%) in the central region, and (about 71%) in the southern region. Almost all of them (95.2%) had no education, while (21.4%) had higher education. However, (85.1%) had primary education, followed by about 55% with secondary education. Most of them (82.4%) were Catholic, followed by about 80% who were other Christians, then (75.3%) were Muslims, while (about 75%) were CCAP males, and about 63% were from other religions. About 77% were never married, while none of the married males were engaged in early sexual activities. About 93% were from the middle income households, followed by (97.8%) from the poorest, and 97.5% from the poorer income households. Those who were from the richer (about 79%), and richest (about 48%) income households were least likely to initiate sexual debut early. About 96% were able to read part of a sentence, followed by about 92% who could not read at all, then about 71% who could read whole sentence. More than half of them (85.1%) were from the Chewa ethnic group, followed by (82.2%) from the Ngoni ethnic group, then (76.2%) from other ethnic groups. About 72% were from the Lomwe ethnic groups, about 70% from the Yao and about 62% from the Tumbuka ethnic groups. Majority of them (about 77%) did not use condom, while an equivalent proportion reported condom use.

Among rural females who reported early sexual activities, about 81% were aged 15-19 years, while 79.3% were aged 20-24 years. About 87% were from the northern region, followed by about 80% from the central region, then 79% from the southern region. Majority had no education (88%), followed by those with primary education (87.4%), then those with secondary (59.3%) education. Those with higher education (about 18%) were least likely to initiate sexual debut early. Majority, (about 83%) were Muslims, followed by other Christian (82.3%), then Catholic (about 80%). More than half (about 77%) were CCAP females, while (about 76%) were from other religions. Most of them (83.2%) were married, while about 79% were never married. Almost all of the respondents (about 98%) were from the poorest income households, followed by about 97% from the poorer income households, then about 95% from the middle income households. Those in the richer (about

85%) and richest (about 42%) income households were the minority. Furthermore, about 93% could read part of a sentence followed by about 89% who could not read at all, then (76.2%) could read whole sentence. Majority, (83.3%) were from the Tumbuka ethnic group, followed by (83.1%) from the Chewa ethnic group, then (80.3%) from the Yao ethnic group. The minority were from the Lomwe (about 78%) and Ngoni (74%) ethnic groups. Most rural females who reported early sexual debut (80.5%) did not use condoms, while about 74% reported condom use.

Comparing rural males and females who reported early sexual activity, the study found that by controlling with socio-economic and demographic variables, age group, region, education, wealth and literacy gave similar findings. As indicated, most rural respondents who reported early sexual debut were aged 15-19 years (about 81%) females and about 79% males, who were in the northern region (92.1%) males and (about 87%) females, with no education (95.2%) males and (88%) females, from the poorest income households (about 98%) males and about 98% females, who could read part of a sentence (about 96%) males and (about 93%) females. However, variation was evident especially with marital status, religion and ethnicity. As indicated on the table, most rural males who reported early sexual debut were catholic (82.4%), while most females (about 83%) were Muslims. Moreover, most males were never married (about 77%), while most females (83.2%) were married, and most males were from the Chewa ethnic group (85.1%), while most females (83.3%) were from the Tumbuka ethnic group.

Among urban males who reported early sexual debut, about 33% were aged 20-24 years, while (21.4%) were aged 15-19 years. However, (29.4%) were from the southern region, followed by (about 23%) from the central region, then (about 8%) from the northern region. Most urban males who initiate sexual activities early had higher education (about 79%), followed by those with secondary education (45.4%), and while (about 15%) had primary education and (4.8%) had no education. About 38% were from other religions, followed by those from the CCAP religion (25.4%), and then about 25% were Muslims. About 18% were Catholic males while (20.3%) were other Christians. Moreover, (23.4%) were never married, while none of the married males reported early sexual debut. More than half (52.1%) were from the richest households, while 2.2% were from the poorest income households. About 22% were from the richer households, followed by (about 8%) from the middle income households, while about 3% were from the poorer income households. About 30% were able to read whole sentences, while (8.2%) could not read at all, and (4.5%) could read part of sentence. Moreover, about 39% were from the Tumbuka ethnic group, followed by (30.1%) from the Yao ethnic group, while (about 29%) were from the Lomwe and (about 24%) were from other ethnic groups. About 18% were from the Ngoni and (about 15%) were from the Chewa ethnic groups. Moreover, (23.4%) did use condoms while (23.4%) did not use condoms.

Most urban females (about 21%) who reported early sexual debut were aged 20-24 years, while about 20% were aged 15-19 years and 21% were from the southern region, followed by 20.3% from the central region, and 13.4% from the northern region. More than half of them (82.4%) had higher education, while 12% had no education. Moreover, about 41% had secondary education, followed by about 13% with primary education. Moreover, 24.2% were from other religions, followed by (23.2%) from the CCAP religion, then (20.3%) was Catholic. About 18% were other Christian, while 17.2% were Muslims. Furthermore, (21.2%) were never married, while (about 17%) were married. More than half of them (58.1%) were from the richest households, while 2.3% were from the poorest households. Moreover, (15.1%) were from the richer income households, followed by (5.4%) from the middle income households while (3.2%) were from the poorer income households. About 24% could read whole sentence, while (11.4%) could not read at all, and 7.3% could read part of a sentence. Furthermore, (26%) were from the Ngoni ethnic group, followed by (about 23%) from the Lomwe ethnic group, then (20.3%) from other ethnic groups. About 20% were from the Yao ethnic group, while about 17% were from the Tumbuka and Chewa ethnic groups (about 17%).

Comparatively among urban respondents who reported early sexual debut, age group, region, education, religion, marital status, literacy, wealth, and condom use gave similar findings. As indicated, most respondents who reported early sexual debut were aged 20-24 years, with (23.4%) males, and (about 20%) females , in the southern region (29.4%) males and (21%) females, with higher education (82.4%) females and (about 79%) males, from other religion (about 38%) males and (24.2%) females. Most of them were never married with (23.4%) males and (21.2%) females, withmore than half of them from the richest households with (52.1%) males and (58.1%) females, and less than half of them could read whole sentence, with (about 30%) males and (about 24%) females. Most urban females (26.2%) reported condom use, while males the same percentage of (23.4%) were reported among males.Variation was noticed within ethnic groups whereby, about 39% males who reported early sexual debut were from the Tumbuka ethnic group, while 26% females were from the Ngoni ethnic group.

Comparing rural and urban males who reported early sexual debut, a remarkable variation existed among males who reported early sexual debut. As indicated on the table below, most rural males (about 79%) were aged 15-19 years, while most urban males (about 33%) were aged 20-24 years. Almost all rural males (92.1%) were from the northern region, while most urban males (29.4%) were from the southern region. Most rural males (95.2%) had no education, while (about 79%) urban males had higher education. Furthermore, most rural males (82.4%) were Catholic, while (about 38%) urban males were from other religions. More than half (about 77%) of rural males were never married, while 23.4% urban males were married. About 98% rural males were from the poorest income households, while 52.1% of urban males were from the richest income households. About 96% of rural males were able to read part of a sentence, while most urban males (about 30%) could read whole sentences. Most rural males (85.1%) were from the Chewa ethnic group, while most urban males (about 39%) were from the Tumbuka ethnic group. Condom use and non-use among rural males (about 77%) was universal, while it was also universal among urban males (23.4%), with the prevalence much higher among rural males than urban males. However, the only variation was evident with ethnicity whereby rural males who reported early sexual debut were from the Chewa ethnic group (85.1%), while urban males were from the tumbuka (83.3%) ethnic group

Comparing rural and urban females who reported early sexual debut, the study found that a remarkable variation was evident among females by residence. As indicated, most rural females who reported early sexual debut (about 81%) were aged 15-19 years, while (about 21%) of urban females were aged 20-24 years. About 87% rural females were from the northern region, while (21%) urban females were from the southern region. Majority (88%) rural females had no education, while most urban females (82.4%) who reported early sexual debut had higher education. About 83% rural females were Muslims, while 24.2% urban females were from other religions. Majority of rural females (83.2%) were married, while (21.2%) urban females were never married. About 98% rural females were in the poorest income households, while most urban females (58.1%) were from the richest income households. About 93% rural females were able to read part of a sentence, while about 24% urban females were able to read whole sentences. Most rural females (83.3%) were from the Tumbuka ethnic group, while most urban females (26%) were from the Ngoni ethnic group. About 81% of rural females did not use condoms, while 26.2% urban females use condoms.

Table 7 Percentage of rural/urban males and females and early sexual debut (before 16 years) by background characteristics in Malawi 2010

	RURAL				URBAN			
	MALE		FEMALE		MALE		FEMALE	
Background characteristics	**Engage in early sexual debut**	**Did not engage in early sexual debut**	**Engage in early sexual debut**	**Did not engage in early sexual debut**	**Engage in early sexual debut**	**Did not engage in early sexual debut**	**Engage in early sexual debut**	**Did not engage in early sexual debut**
Age group								
15 – 19	78.6	77.4	80.5	84.4	21.4	22.6	19.5	15.6
20 – 24	67.3	77.6	79.3	79.7	32.7	22.4	20.7	20.3
Region								
Northern	92.1	94.0	86.6	92.8	7.9	6.0	13.4	7.2
Central	77.3	79.8	79.7	82.3	22.7	20.2	20.3	17.7
Southern	70.6	72.2	79.0	74.9	29.4	27.8	21.0	25.1
Education								
No education	95.2	84.5	88.0	93.5	4.8	15.5	12.0	6.5
Primary	85.1	86.4	87.4	88.0	14.9	13.6	12.6	12.0
Secondary	54.6	62.4	59.3	64.5	45.4	37.6	40.7	35.5
Higher	21.4	30.0	17.6	21.0	78.6	70.0	82.4	79.0
Religion								
Other Christian	79.7	81.9	82.3	82.9	20.3	18.1	17.7	17.1
Catholic	82.4	81.7	79.7	83.4	17.6	18.3	20.3	16.6
CCAP	74.6	73.8	76.8	77.9	25.4	26.2	23.2	22.1
Muslim	75.3	72.3	82.8	77.0	24.7	27.7	17.2	23.0
Others	62.5	71.7	75.8	75.5	37.5	28.3	24.2	24.5
Marital status								
Married	0.0	85.9	83.2	83.6	0.0	14.1	16.8	16.4
Never married	76.6	74.8	78.8	69.7	23.4	25.2	21.2	30.3
Wealth								
Poorest	97.8	96.5	97.7	96.3	2.2	3.5	2.3	3.7
Poorer	97.5	97.2	96.8	96.4	2.5	2.8	3.2	3.6
Middle	92.5	91.5	94.6	93.1	7.5	8.5	5.4	6.9
Richer	78.5	80.8	84.9	79.4	21.5	19.2	15.1	20.6
Richest	47.9	39.5	41.9	42.5	52.1	60.5	58.1	57.5
Literacy								
Able to read whole sentence	70.5	74.0	76.2	75.8	29.5	26.0	23.8	24.2
Cannot read at all	91.8	88.5	88.6	89.6	8.2	11.5	11.4	10.4
Able to read part of sentence	95.5	83.5	92.7	92.3	4.5	16.5	7.3	7.7
Ethnicity								
Chewa	85.1	86.7	83.1	86.3	14.9	13.3	16.9	13.7
Lomwe	71.5	77.9	77.5	73.5	28.5	22.1	22.5	26.5
Ngoni	82.2	81.3	74.0	71.6	17.8	18.8	26.0	28.4
Tumbuka	61.5	63.3	83.3	86.1	38.5	36.7	16.7	13.9
Yao	69.9	69.4	80.3	74.3	30.1	30.6	19.7	25.7
Others	76.2	76.2	79.7	81.7	23.8	23.8	20.3	18.3
Condom use								
No	76.6	78.3	80.5	82.6	23.4	21.7	19.5	17.4
Yes	76.6	75.3	73.8	62.8	23.4	24.7	26.2	37.2

Source: Malawi Demographic and Health Survey 2010, weighted cases

4.3.7 Multiple sexual partnerships by background characteristics

Table 8 presents the bivariate analysis of males and females who reported one or more sexual partners by background characteristics. Females were more likely to report multiple sexual partnership (MSP) (n=2290) than males (n=1399) as indicated on table below.

Among males who reported MSP, age group, education, religion, marital status, literacy, and ethnicity were statistically significant. As indicated among males who reported multiple sexual partnerships (MSPs), 75% were aged 20-24 years, while 62.3% were aged 15-19 years. Moreover, 71.4% had higher education, followed by about 71% with primary education, then (69%) with no education while (about 65.3%) had secondary education. About 76% could not read at all, followed by (about 70%) who were able to read part of a sentence, then (67.3%) who could read whole of sentence. Moreover, (80.3%) were Muslims, followed by 74.4% from other religion, then about 68% being other Christian, while 67.4% were from CCAP religion, and 61.4% being catholic. Moreover, 74.3% were married, while 67.3% were never married, and about 79% were from the Yao ethnic group, followed by 71% from the Tumbuka ethnic group, and about 71% from the Lomwe and other ethnic (71%) groups. Those from the Chewa (64.1%) ethnic groups, and the Ngoni (about 62%) ethnic groups were the minority. Majority (80.3%) did not use condom with those partners, while (65.1%) reported condom use.

Among females who reported MSPs, 58.4% were aged 20-24 years, while 30.3% were aged 15-19 years. Moreover, (45.3%) were in the rural areas, while 37.1% were in the urban areas. Less than half of them (49.2%) were in the northern region, followed by those in the central region (46.3%), while the minority (about 40%) were in the southern region. About 55% had no education, while about 35% had higher education. Moreover, (about 44%) had primary education, and (about 42%) had secondary education. About 49% were from the poorer income households, followed by (47.2%) in the middle income households, then those from the poorest income households (about 47%), while 42% were from the richer income households. Those in the richest income households (about 36%) were the minority. About 47% were other Christians, followed by other religion (44.2%), then Catholic (43%), while CCAP (41.2%) and Muslim females (40.3%) were the minority. However, the majority could not read at all (about 50%), followed by 49.2% that could read part of a sentence and (41.1%) that could read whole sentences. About 66% females were married, while (23%) were never married. Moreover, (48.2%) were from the Tumbuka ethnic group, (about 46%) from the Chewa ethnic group, while (46%) were from other ethnic groups and (40.4%) were from the Lomwe ethnic group. Those from the Yao (39%) ethnic group were the minority. About 60%, $p<0.05$ reported condom use, while (42.4%) did not use condoms.

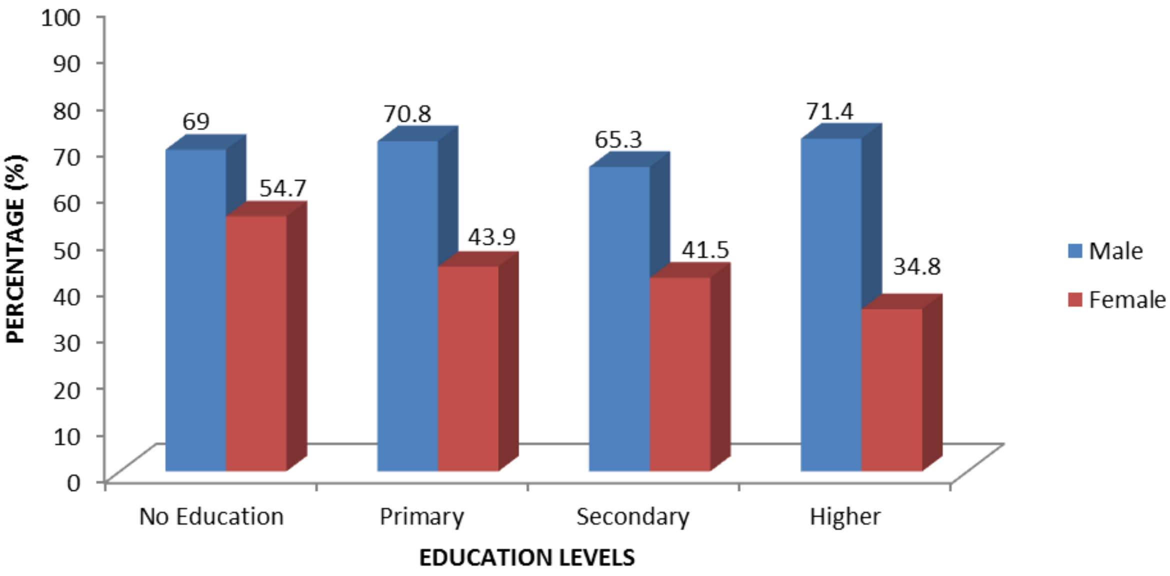
Comparatively among respondents who reported MSPs, age group, literacy and marital status were statistically similar by socioeconomic and demographic variables. As indicated, respondents who reported MSPs were aged 20-24 years (75%) males and (58.4%) females, who could not read at all (about 76%) males and (about 50%) females, and were married (74.3%) males and (about 66%) females. However, variation was evident especially by residence, education, wealth, religion, ethnicity and condom use. As indicated, most males (about 70%) who reported MSP were in the urban areas, while most females (45.3%) were in the rural area. This did not give significant result among males but a significant result was obtained from the female respondents. Moreover, most males (71.4%) had higher education, while most females (about 55%) had no education, 72.1% males who reported MSP were from the middle income households, while about 49% females were from the poorer income households. Moreover, 80.3% males were Muslims, while about 47% females were other Christian. In terms of ethnicity, about 79% males were from the Yao ethnic group, while 48.2% females were from the Tumbuka ethnic group, and 80.3% males did not use condom while about 60% females reported condom use.

Table 8 Percentage of males and females with one or more sexual partners by background characteristics in Malawi 2010.

	MALE				FEMALE			
Background characteristics	**Had more than one sex partner (n=1399)**	**Had sex with one partner (n=627)**	**Weighted number of males (N=2026)**	**p-value**	**Had more than one sex partner (n=2290)**	**Had one sex partner (n=4180)**	**Weighted number of female (N=6470)**	**p-value**
Age group				0.00				0.000
15 – 19	62.3	37.7	949		30.3	69.7	2197	
20 – 24	75.0	25.0	1076		58.4	41.6	4272	
Residence				0.689				0.000
Urban	69.5	30.5	455		37.1	62.9	1208	
Rural	68.9	31.1	1570		45.3	54.7	5262	
Region				0.184				.000
Northern	67.0	33.0	182		49.2	50.8	769	
Central	67.3	32.7	897		46.3	53.7	2639	
Southern	71.1	28.9	947		39.7	60.3	3061	
Education level				0.004				0.000
No education	69.0	31.0	58		54.7	45.3	443	
Primary	70.8	29.2	1291		43.9	56.1	4487	
Secondary	65.3	34.7	628		41.5	58.5	1444	
Higher	71.4	28.6	49		34.8	65.2	97	
Wealth quintile				0.181				0.000
Poorest	71.7	28.3	314		46.8	53.2	1217	
Poorer	67.9	32.1	389		48.9	51.1	1354	
Middle	72.1	27.9	387		47.2	52.8	1341	
Richer	70.0	30.0	406		42.0	58.0	1198	
Richest	65.5	34.5	530		35.8	64.2	1359	
Literacy				0.006				0.000
Able to read whole sentence	67.3	32.7	1472		41.1	58.9	4713	
Cannot read/No card/Blind/Others	75.9	24.1	373		49.7	50.3	1606	
Able to read part of sentence	69.6	30.4	181		49.2	50.8	150	
Religion				0.001				0.000
Other Christian	67.7	32.3	662		46.5	53.5	2558	
Catholic	61.4	38.6	420		43.0	57.0	1294	
CCAP	67.4	32.6	389		41.2	58.8	1034	
Muslim	80.3	19.7	300		40.3	59.7	964	
Others	74.4	25.6	254		44.2	55.8	619	
Marital status				0.004				0.000
Married	74.3	25.7	505		65.6	34.4	4640	
Never married	67.3	32.7	1520		23.0	77.0	1836	
Ethnicity				0.028				0.000
Chewa	64.1	35.9	655		45.7	54.3	2113	
Lomwe	70.7	29.3	358		40.4	59.6	1069	
Ngoni	61.9	38.1	160		41.3	58.7	800	
Tumbuka	71.0	29.0	276		48.2	51.8	592	
Yao	78.6	21.4	295		39.0	61.0	979	
Others	70.6	29.4	282		46.0	54.0	918	
Condom use				0.00				0.000
No	80.3	19.7	524		42.4	57.6	5760	
Yes	65.1	34.9	1502		59.9	40.1	710	

Source: Malawi Demographic Health Survey 2010, weighted cases

Figure 7 Percentage of males and females with multiple sexual partners by education levels



Males were more likely to have more than one sexual partner than females, and could be explained from the high autonomy of males compared to females during most relationships within sub-saharan Africa (figure 7 above). However, the majority of those who reported MSPs majority had higher education, followed by those with primary education (about 71%), then those with no education (69%), while those with secondary education (65.3%) were the minority. Among females, more than half (about 55%) of those who reported MSP had no education, followed by those with primary education (about 44%), then those with secondary education (about 42%), while those with higher education (about 35%) were the minority.

4.3.8 Multiple sexual partnerships among males/females by residence

Table 9 presents the result of bivariate analysis of rural/urban differential among males and females with one or more sexual partners by background characteristics.

Among rural males with more than one sexual partner, majority were aged 20-24 years (81%), while 75.4% were aged 15-19 years. About 97% were from the northern region, followed by 84% from the central region, then about 68% from the southern region. About 89% had no education, while 53.3% had higher education. However, about 88% had primary education, while 61.3% had secondary education. About 84% were other Christians, followed by 83.3% Catholic, about 76% were CCAP, about 63% were Muslims and (63.1%) were other religion. Majority (93.1%) were married, while about 74% were single. About 99% were from the poorest households, while about 40% were from the richest households. However, 96% were from the poorer households, and 90.2% were from richer households, while about 90% were from the middle households. About 84% could read part of a sentence, while 76.1% could read whole sentences. Moreover, 83.3% could not read at all. About 90% were from the Chewa ethnic group, followed by 78.1% from the Lomwe ethnic group, about 74% from the Ngoni ethnic group, and about 81% from other ethnic groups. Those from the Yao (about 62%) and Tumbuka (55%) were the minority.

Among rural females who reported multiple sexual partners, about 85% were aged 15-19 years, while about 83% were aged 20-24 years, with (about 92%) from the northern region, 82.2% from the central region, and about 82% from the southern region. Majority (92.4%) had no education, while about 28% had higher education. Moreover, (89.2%) had primary education, and (66.1%) had secondary education. Moreover, (86.2%) were Catholic, (85.2%) other Christians and (about 81%) were CCAP. However, 79.1% were Muslims, and 79.2% were from other religions. Most of the respondents were married (85.2%), while the minority (78.4%) were single, with about 97% from the poorest households, while about 47% were from the richest households. About 96% were from poorer households, about 94% from the middle households, while 83% were from the richer households. About 94% were able to read part of a sentence, while 79.3% could read whole sentences, and about 90% could not read at all. About 89% were from the Tumbuka ethnic group, about 87% from the Chewa ethnic group, about 83% from other ethnic groups and about 80% from the Yao ethnic group. About 79% were from the Lomwe ethnic group, while about 78% were from the Ngoni ethnic group.

Among urban males with more than one sexual partner, about 25% were aged 15-19 years, while 19% were aged 20-24 years. About 33% were from the southern region, 16% from the central region while 3.3% were from the northern region. About 47% had higher education, while 11.1% had no education. Moreover, about 39% had secondary education and 12.2% had primary education. However, 37.3% were Muslims, followed by about 37% from other religions, while 24.4% were from CCAP, about 17% from Catholic and 16.4% from other Christians. Moreover, 26.1% were single, while about 7% were married. Furthermore, 60.1% were from the richest households, while 1.1% was from the poorest households. Moreover, 10.2% were from the middle quintile, about 10% from the richer quintile, while 4% were from the poorer quintile. About 24% could read whole sentences, while 16.1% could read part of a sentence, and about 17% could not read at all. However, 45% were from the Tumbuka ethnic group, followed by 38.1% from the Yao, and 26.2% from the Ngoni ethnic groups. Moreover, about 22% were from Lomwe, 10.2% from the Chewa ethnic group and 19.3% from other ethnic groups.

Among urban females with more than one sexual partner, 17.4% were aged 20-24 years, while about 16% were aged 15-19 years. Moreover, 18.1% were from the southern region, about 18% from the central region, and 8.3% from the northern region. Majority (72.2%) had higher education, while the minority (about 7%) had no education. About 34% had secondary education, and about 11% had primary education. About 21% were Muslims, followed by other religion (about 21%), and (19.2%) CCAP females. About 15% were other Christian, while about 14% were Catholic. Moreover, about 22% were never married, while about 15% were married. However, (53.4%) were from the richest households, while 3.5% were from the poorest households. Moreover, 17.3% were from richer households, 6.3% from the middle quintile, while 4% were from the poorer households. About 21% could read whole sentences, while 6.2% could read part of sentence, and 10.4% could not read at all. Moreover, (22.2%) were from the Ngoni ethnic group, about 22% from Lomwe and 20.2% from the Yao ethnic groups. While those from other ethnic groups (17.1%), Chewa (13.1%) and Tumbuka (11.4%) were the minority.

Comparing urban males and females with more than one sexual partner, region, education, religion, wealth, and literacy gave similar findings. As indicated in the table below, those who reported multiple life time sexual partners were from the southern region (about 33%) males, and (18.1%) females, with higher education (72.2%) females and (about 47%) males. Being a Muslim increases the prevalence of multiple sexual partnerships with more males (37.3%) than females (about 21%), and being single with 26.1% males and 21.6% females. Most of respondents were from the richest households, with 60.1% males and 53.4% females, with about 24% males and about 21% females who could read whole sentences. However, certain variation was evident among urban male and female respondents especially with ethnicity. As indicated, most urban females (22.2%) were from the Ngoni ethnic group, while most males (45%) were from the Tumbuka ethnic group.

Among rural and urban males with more than one sexual partner, the study found great variation in rural/urban areas by socio-economic and demographic characteristics. As indicated in the table, having more than one sexual partner was common among rural males aged 20-24 years (81%), in the northern region (about 97%), with no education (about 89%). Moreover, having more than one sexual partner was higher if rural males were other Christian (about 84%), being married (93.1%), from the poorest household (about 99%) can read part of a sentence (about 84%) and are from the Chewa (about 90%) ethnic group. Meanwhile, among urban males, having more than one sexual partner was common among those aged 15-19 years (about 25%), in the southern region (about 33%), with higher education (about 47%), and being a Muslim. Moreover, having more sexual partner was common if urban males were single (26.1%), from the richest household (60.1%), and can read whole sentences (about 24%), and are from the Tumbuka (45%) ethnic group.

Moreover, among rural and urban females with more than one sexual partner, the study gave rural/urban variation by socio-economic and demographic characteristics. As indicated in the table below, having more than one sexual partner was higher (about 85%) among rural females aged 15-19 years, in the northern region (about 92%), with no education (92.4%), and being Catholic (86.2%). Moreover, being married (85.2%), in the poorest quintile (about 97%), can read part of a sentence, and from the Tumbuka ethnic group, increases the chances of having more than one sexual partner. Meanwhile, having more than one sexual partner was higher if urban females were aged 20-24 years (17.4%), in the southern region (18.1%), with higher education (72.2%), and being Muslim (about 21%). Moreover, having more than one sexual partner was higher among urban females who were never married (about 22%), from richest household (53.4%), can read whole sentences (about 21%), and from the Ngoni (22.2%) ethnic group. Having more than one sexual partner among respondents vary by residence, and this could be attributed to greater exposure in urban than rural areas, lack of cultural practices in the urban areas, more education, and later marriages in the urban areas than rural areas, available cash for up keep of young people, and the fact that most urban residents can read.

Table 9 Percentage of Rural/Urban males and females with one or more sexual partners by background characteristics in Malawi 2010

	RURAL				URBAN			
	MALE		FEMALE		MALE		FEMALE	
Background characteristics	Had one sexual partner	Had more than one sexual partner	Had one sexual partner	Had more than one sexual partner	Had one sexual partner	Had more than one sexual partner	Had one sexual partner	Had more than one sexual partner
Age group								
15 – 19	78.6	75.4	79.6	84.5	21.4	24.6	20.4	15.5
20 – 24	75.0	81.0	75.2	82.6	25.0	19.0	24.8	17.4
Region								
Northern	92.7	96.7	86.4	91.7	7.3	3.3	13.6	8.3
Central	77.6	84.0	79.6	82.2	22.4	16.0	20.4	17.8
Southern	72.8	67.5	74.9	81.9	27.2	32.5	25.1	18.1
Education								
No education	85.5	88.9	88.6	92.4	14.5	11.1	11.4	7.6
Primary	85.5	87.8	86.4	89.2	14.5	12.2	13.6	10.8
Secondary	59.8	61.3	58.1	66.1	40.2	38.7	41.9	33.9
Higher	20.4	53.3	14.9	27.8	79.6	46.7	85.1	72.2
Religion								
Other Christian	80.5	83.6	80.2	85.2	19.5	16.4	19.8	14.8
Catholic	81.3	83.3	77.2	86.2	18.7	16.7	22.8	13.8
CCAP	73.6	75.6	74.7	80.8	26.4	24.4	25.3	19.2
Muslim	74.9	62.7	82.1	79.1	25.1	37.3	17.9	20.9
Others	69.9	63.1	72.9	79.2	30.1	36.9	27.1	20.8
Marital status								
Married	83.5	93.1	80.2	85.2	16.5	6.9	19.8	14.8
Never married	75.9	73.9	77.1	78.4	24.1	26.1	22.9	21.6
Wealth								
Poorest	96.4	98.9	97.7	96.5	3.6	1.1	2.3	3.5
Poorer	97.9	96.0	97.4	96.0	2.1	4.0	2.6	4.0
Middle	92.4	89.8	94.3	93.7	7.6	10.2	5.7	6.3
Richer	77.4	90.2	83.1	82.7	22.6	9.8	16.9	17.3
Richest	43.2	39.9	39.6	46.6	56.8	60.1	60.4	53.4
Literacy								
Able to read whole sentence	72.0	76.1	73.8	79.3	28.0	23.9	26.2	20.7
Cannot read at all	90.7	83.3	88.4	89.6	9.3	16.7	11.6	10.4
Able to read part of sentence	88.8	83.9	91.2	93.8	11.2	16.1	8.8	6.2
Ethnicity								
Chewa	85.0	89.8	82.4	86.9	15.0	10.2	17.6	13.1
Lomwe	75.4	78.1	74.6	78.5	24.6	21.9	25.4	21.5
Ngoni	84.0	73.8	69.8	77.8	16.0	26.2	30.2	22.2
Tumbuka	64.7	55.0	80.7	88.6	35.3	45.0	19.3	11.4
Yao	71.0	61.9	77.5	79.8	29.0	38.1	22.5	20.2
Others	75.1	80.7	78.3	82.9	24.9	19.3	21.7	17.1

Source: Malawi Demographic Health Survey 2010, weighted cases

4.3.9 Knowledge of sexually transmitted infections (STIs)

This section presents the relevant knowledge, attitudes, belief and awareness of males and females regarding sexually transmitted infections. Findings from the study will however help inform programmes that are geared toward the control and prevention of sexually transmitted infections among young people. However, the result was presented by background characteristics and residence in order to observe variation in knowledge, attitudes and beliefs among respondents in the study.

4.3.9.1 Knowledge of STIs by background characteristics

According to the result, the knowledge of sexually transmitted infections is almost universal among males and females with about nine of every ten male and female (99% versus 99.2%) aged 15 – 19 years having knowledge of STIs, and about ten in every ten male and female aged 20 – 24 years who have heard of STIs.

The universality in the figures cut across all the socio-economic and demographic variables used in the study, thus indicating that almost every male and female in Malawi has some knowledge of sexually transmitted infections. In terms of residence, the results indicate that 99% male and almost all females that reside in the urban areas have heard of STI, while 99.1% males and 99.4% females in the rural areas have heard of sexually transmitted infections. Knowledge of sexually transmitted infections is found to be universal within the regions though some variation among males and females exist. Among the male respondents, majority of those who have heard of STIs were in the northern region (99.4%), followed by those in the central region (99.2%) and those in the southern region (99%) were the minority. Among females, majority of those who have heard of STIs were in the southern region (99.6%), followed by those in the central region (99.3%), while those in the northern region (99.4%) were the minority. Moreover, most married males (99.8%) have heard of STIs, while never married males (99%) were the minority and married females (99.6%) have heard of STIs more than never married counterparts (99.3%). Irrespective of individual's wealth, either poor or rich, they have heard of STIs/RTIs somehow. However, among males who have heard of STIs, majority were in the middle quintiles (99.6%), followed by those in the richer (99.2%) and richest (99.2%) quintiles. However, those in the poorest (98.9%) and poorer (98.9%) quintiles were the minority. Among females who have heard of STIs, majority were in the richest quintiles (99.9%), followed by those in the richer (99.7%), then those in the middle (99.5%) quintiles. The minority were those in the poorest (99.1%) and poorer (99%) quintiles. Among males who have heard of STIs, majority had higher and secondary education, followed by those with primary education (99%) and those without education (91.3%) were the minority. A similar situation was found among the females, but with a slight increase of 98% for those without education who have heard of STIs. The impact of these diseases has been widely spread such that almost all male and females in Malawi are aware of it, but this awareness and knowledge still have not been transformed into action.

Table 10 Percentage of male and female who have heard of STIs by background characteristics in Malawi 2010

	MALE		FEMALE	
Background characteristics	**Have heard of STIs**	**Weighted number of males**	**Have heard of STIs**	**Weighted number of females**
Age group				
15 – 19	98.7	1747	99.2	5003
20 –24	99.6	1239	99.7	4555
Place of residence				
Urban	99.0	680	99.8	1878
Rural	99.1	2306	99.4	7679
Region				
Northern	99.4	321	99.4	1129
Central	99.2	1325	99.3	4136
Southern	99.0	1340	99.6	4292
Marital status				
Married	99.8	506	99.6	4637
Never married	99.0	2480	99.3	4920
Wealth quintile				
Poorest	98.9	450	99.1	1710
Poorer	98.9	545	99.0	1820
Middle	99.6	545	99.5	1907
Richer	99.2	596	99.7	1793
Richest	99.2	847	99.9	2328
Educational				
No education	91.3	80	98.0	505
Primary	99.0	1975	99.4	6581
Secondary	100.0	868	100.0	2316
Higher	100.0	64	100.0	155

Source: Malawi Demographic Health Survey 2010, weighted cases

4.3.9.2 Knowledge of STIs by place of residence

The table 11 present rural/urban males and females who have heard of sexually transmitted infections (STIs) by selected background characteristics.

According to the study, among rural males, having heard of sexually transmitted infections was high among those aged 15-19 years (78%), in the northern region (93.1%), with primary education (86.1%), being married (about 86%) and from the poorer (97.2%) households. However, among rural females, having knowledge of sexually transmitted infections was common among those aged 15-19 years (81%), in the northern region (89%), with no education (about 91%), being married (83.4%), and from the poorest (97.3%) household. Within the urban area, the proportion of males who have heard of sexually transmitted infections were aged 20-24 years (about 24%), in the southern region (28.2%), with secondary education (about 40%), being single (about 25%), and from the richest (57.2%) households. However, among urban females who have heard of STIs, about 21% were aged 20-24 years, in the southern region (22.4%), with higher education (about 81%), being single (about 23%), and in the richest households. Comparatively, knowledge of sexually transmitted infections among males and females is almost universal as evident from the study. However, a notable variation exists within rural and urban areas with rural respondents having more knowledge than urban respondents as shown in the table below. As indicated below, having knowledge of STIs in the rural areas was common among respondents aged 15-19 years, in the northern region, being married, with no education, and from the poorest and poorer household. Meanwhile, among urban respondents, having knowledge of STIs was common among those aged 20-24 years, in the southern region, with higher education, being single and from the richest households.

Table 11 Percentage of rural/urban males and females who have heard of STIs by selected background characteristics in Malawi 2010

Background characteristics	RURAL		URBAN	
	MALE	FEMALE	MALE	FEMALE
Age group				
15 – 19	78.0	81.0	22.0	19.0
20 – 24	76.2	79.5	23.8	20.5
Region				
Northern	93.1	89.0	6.9	11.0
Central	78.9	80.7	21.1	19.3
Southern	71.8	77.6	28.2	22.4
Education				
No education	84.9	90.7	15.1	9.3
Primary	86.1	87.6	13.9	12.4
Secondary	60.3	61.4	39.7	38.6
Higher	28.1	19.4	71.9	80.6
Marital status				
Married	85.9	83.4	14.1	16.6
Never married	75.5	77.3	24.5	22.7
Wealth				
Poorest	96.9	97.3	3.1	2.7
Poorer	97.2	96.7	2.8	3.3
Middle	91.9	94.0	8.1	6.0
Richer	79.9	82.8	20.1	17.2
Richest	42.8	42.0	57.2	58.0

Source: Malawi Demographic Health Survey 2010, weighted cases

4.3.9.3 Knowledge of STI prevention methods

Table 12 below present respondent's knowledge of STIs prevention methods by selected background characteristics.

Three variables were used to examine respondents' knowledge of preventing STIs and this includes; condom use, limiting sexual intercourse to one partner, and abstaining from sexual intercourse. The study found that, about eight of every ten (86.3%) females and (86.2%) males know that the chances of becoming infected with sexually transmitted infections could be reduced by limiting sexual intercourse to one partner, who has no other partner, while seven in every ten males and females know that using a condom, and abstaining from sexual intercourse reduces the chances of contracting sexually transmitted infections and other reproductive tract infections.

Among males who say STIs can be prevented by using condoms, 75.3% were aged 15-19 years, while 74.1% were aged 20-24 years, with almost the same proportion in the rural and urban area (about 75%), and mostly in the southern (75.2%) and central (75.2%) region. about 75% were never married, in the poorer (76.1%) household, and with secondary (about 76%) education. Among those who say that STIs can be preventing by abstaining from sexual intercourse, majority (76%) were aged 20-24 years, in the urban area (75.2%), from the southern region (about 77%), never married (77.4%), and in the middle (80.4%) wealth quintile, with secondary (79%) education. However, limiting sex to one partner was common among those aged 15-19 years (87%), in the urban area (89.2%), from the southern region (89.1%), being married (87.2%), with higher education (about 91%), in the richest (about 89%) households. Comparatively, most males were aware that limiting sexual intercourse to one partner (86.2%) will help reduce the chances of contracting sexually transmitted infections, than abstaining (about 77%), and using condoms (about 75%). The variation is summarily presented on the table below by selected socio-economic and demographic characteristics.

Among females, knowledge of STIs prevention methods by using condoms was higher if respondents were aged 20-24 years (75.3%), in the urban area (77.2%), in the southern region (about 80%), being married (74.1%), with secondary education (about 78%), and in the richest (about 77%) households. For those who were aware of abstaining from sexual intercourse as a preventive measure toward STIs, 78.8% were aged 20-24 years, mostly in the rural area (79%), in the southern region (about 82%), never married (80%), in the middle quintile (80.4%), and with higher (about 85%) education. Moreover, limiting sex to one partner was common among those aged 20-24 years (about 88%), in the urban area (about 88%), in the southern region (89.3%), being married (87.1%), with higher education (about 85%), in the richest (88.1%) households. Comparatively, a notable variation in knowledge of STI prevention by socio-economic and demographic characteristics exists among respondents. Among females, knowledge of STIs prevention increases with age. As indicated in the table, more than half (about 71%) females aged 15 – 19 years know that using condoms and limiting sexual intercourse to one partner (85.1%) can reduce the risk of acquiring STI, compared with 75.3% aged 20-24 years who know of condoms and about 88% who know of limiting sex to one partner. However, knowledge of abstaining from sexual intercourse also follows a similar trend; with 78.7% females aged 15-19 years and increasing to about 79% among those aged 20-24 years. There was a slight variation in knowledge within regions with most females being aware of limiting sex to one partner rather than abstaining and using a condom. For instance, in the northern region, 87.2% females were most likely to know of limiting sex to one partner rather than abstaining (about 79%) and using a condom (69.1%).

Among males, differences in knowledge of STIs prevention according to background characteristics are similar to those among females. For instance, knowledge of STI prevention decreases slightly with age, from 75.3% in males aged 15 – 19 years who are aware that using a condom will reduce the risk of acquiring STIs to 74.1% males aged 20-24 years. Knowledge of abstinence also decreases with age from 77% males aged 15-19 years to 76% among males aged 20-24 years. Moreover, within various regions, knowledge of both methods of prevention was slightly different in the southern region compared to any other region. As indicated, among males in the southern region, 75.2% were aware than STIs can be prevented by using condom, 89.1% knew of limiting sex to one partner while about 77% knew of abstaining from sexual intercourse as a preventive measures for STIs.

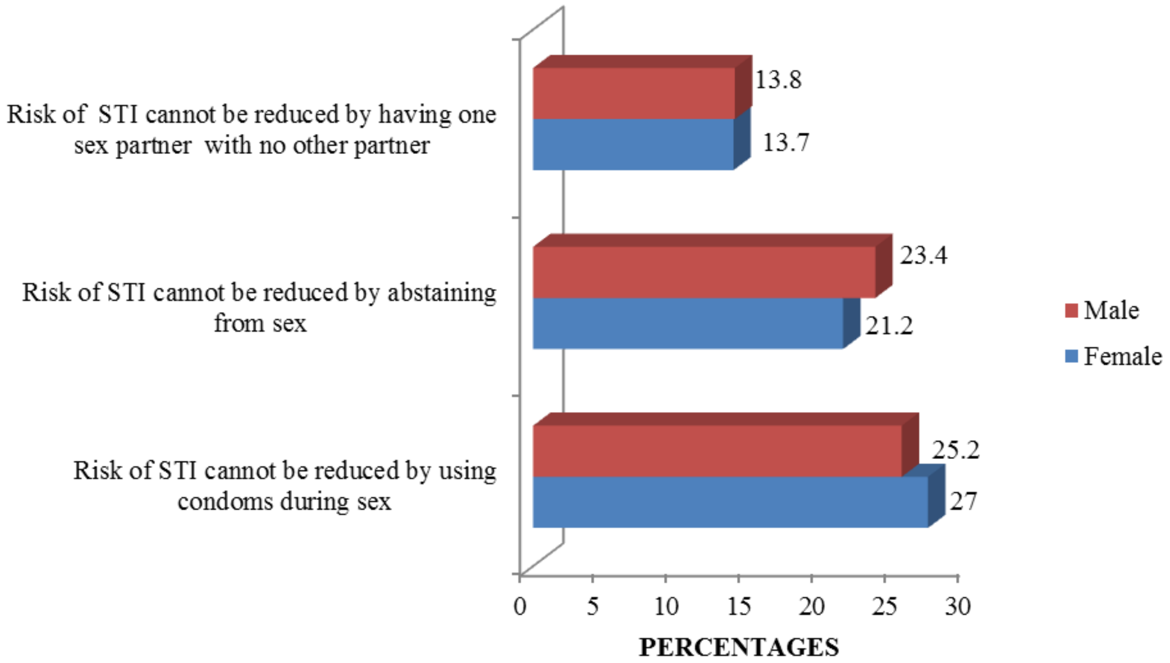
Among females within the wealth quintiles, majority were most likely to know of limiting sex to one uninfected partner rather than abstaining and using condoms. Within the poorest wealth quintiles for instance, 85.2% know of limiting sex to one partner rather than abstaining (77%) and using condoms (70.4%). Similarly, those from the richer and richest households know of limiting sex to one partner (86.1% and 88.1%) rather than abstaining (79.1% and about 80%) and using condoms (74.4% and about 77%). Among males, awareness of prevention methods increases with wealth and education. Awareness of prevention methods of STIs increases with education level, with females most likely to know of limiting sex to one uninfected person than abstaining and using condoms. Among those with no education, 84% were most likely to limit sex to one uninfected partner than using condoms (61.4%) and/or abstaining (about 68%).

Table 12 Percentage of males and females with knowledge of STI prevention methods by background characteristics in Malawi 2010.

	MALE				FEMALE			
	Percentage who say STI can be prevented by:				Percentage who say STI can be prevented by:			
Background characteristics	Using condoms	Limit sexual intercourse to one uninfected partner	Abstaining from sexual intercourse	Weighted number of Males	Using condoms	Limit sexual intercourse to one uninfected partner	Abstaining from sexual intercourse	Weighted number of females
Age group								
15 – 19	75.3	87.0	77.0	5102	70.8	85.1	78.7	14618
20 – 24	74.1	85.0	76.0	3678	75.3	87.6	78.8	13517
Residence								
Urban	74.7	89.2	75.2	2000	77.2	87.8	77.8	5605
Rural	74.9	85.3	77.0	6777	71.9	85.9	79.0	22530
Region								
Northern	71.4	86.3	76.3	923	69.1	87.2	78.5	3254
Central	75.2	83.2	76.3	3924	66.9	82.9	75.7	12181
Southern	75.2	89.1	76.9	3930	79.8	89.3	81.7	12701
Marital status								
Married	74.2	87.2	72.3	1505	74.1	87.1	77.4	13731
Never married	74.9	86.0	77.4	7273	71.9	85.6	80.0	14404
Wealth								
Poorest	74.0	82.1	75.7	1315	70.4	85.2	77.0	4984
Poorer	76.1	83.7	77.1	1608	70.2	84.7	77.3	5324
Middle	75.4	86.5	80.4	1611	72.1	86.7	80.4	5603
Richer	73.0	87.5	73.3	1748	74.4	86.1	79.1	5310
Richest	75.3	88.8	76.5	2497	76.7	88.1	79.5	6914
Education								
No education	65.7	68.7	67.6	208	61.4	84.0	67.6	1454
Primary	75.0	85.1	75.7	5788	72.2	85.3	78.0	19302
Secondary	75.9	89.5	79.0	2593	77.6	89.2	82.9	6916
Higher	64.5	90.6	78.1	190	69.9	92.3	84.5	463

Source: Malawi Demographic Health Survey 2010, weighted cases

Figure 8 Percentage of males and females without knowledge of STI prevention in Malawi 2010



Although knowledge of methods of transmitting STIs was high among young males and females in Malawi, a certain backlog was noticed among respondents. The figure 8 above presents a summary of the findings, and based on the figure, 27% females did not believe that sexually transmitted infections could be reduced by using condom during sexual intercourse, while 25.2% males were of the same opinion as their female counterparts. Moreover, majority of those who did not have knowledge of the fact that the risk of contracting STIs could be reduced if one abstain from sexual intercourse were males (23.4%), while the minority (21.2%) were females. For those who did not believe that the risk of sexually transmitted infections could be reduced by sticking to one uninfected partner, about 14% were females and about 14% were males.

4.3.9.4 Rejection of certain misconceptions

In order to assess knowledge of sexually transmitted infections among young people in Malawi, the 2010 survey obtained information on common misconceptions that young people had regarding the transmission of sexually transmitted infections. The findings in the current study present those who reject these misconceptions and the results are presented in table 13 and 14 for females and males respectively. According to the results, most young people (86.1% females and 92% males) knew that a healthy looking person can have STI, with about 89% females, and about 95% males aged 20-24 years, while about 84% females and 90% males were aged 15-19 years, with majority in the urban areas (about 93%) females and (about 97%) males, while (about 85%) females and (about 91%) males were in the rural areas. Variation was also noticed within the regions, with 91.1% females and 92.4% males from the southern region, about 85% females and 93.1% males from the central region and 73% females and 85.5% males from the northern region.

Married respondents (about 87% females and 93.3% males) were aware that a healthy person can be infected more than never married female (about 86% females and about 92% males).The trend increases with education level with about 76% females and 90.1% males without education, through those with primary education (about 84% females and about 90% males) to those with higher education (97.4% females and all males). Similarly, those from richest households (about 93% females and about 95% males) were more likely to be aware than those from poorest households (81.2% females and 89.1% males). The most common misconceptions about STI transmission is that it can be transmitted by mosquitoes. More than half of the respondents (about 79%) females and (78.1%) males were aware that STI cannot be transmitted by mosquitoes, with (79.3%) females and (79.3%) males aged 15-19 years, and most of them from the urban areas (86.3% females and 86.2% males). About 82% females and 82.2% males with such knowledge reside in the southern region with majority of them never married (81.1%) females and (about 80%) males, and most of them with higher education (about 96%) females and all males. Moreover, majority were in the richest households (about 86%) females and (85.2%) males. Moreover, the misconception that STI can be transmitted by witchcraft or supernatural means; about 92% males and 88.2% females rightly believe that sexually transmitted infections cannot be transmitted by supernatural means, with no variation within the age group (90.1% females and about 92% males aged 15-24 years). About 95% females and 96% males with the knowledge were from the urban areas, 90.4% versus 92.6% and 90.3% versus 93.3% were from the southern and northern regions respectively, and majority of them were never married (91.3% females and 92.3% males) while about 89% females and 89.3% males were married. However, knowledge increases as education level increases with about 97% females and all males having a higher education level, followed by about 96% females and 95.3% males with secondary education, and the minority being those with no education. A similar trend was also noticed with the wealth quintile for both respondents (males and females). About 93% females and about 96% males believe that STI cannot be transmitted by sharing food with a person who is infected, and of this number, majority were from the urban area (about 96% females and 97% males), with 93.4% females from the southern region, and 96.4% males from the northern region. Within the age group, knowledge was universal among the females(about 93% aged 15-19 and 20-24 years), but a great difference was noticed among the males with 97.1% aged 20-24 years and 94.3% aged 15-24 years. However, majority (94% females) were never married, while most of the male were married (about 98%). Moreover, most of females (98.1%) had higher education while most males (about 98%) had secondary education, about 98% females had secondary education and about 92% had primary education. The trend however, increases with increased level of education for both male and female. In terms of wealth, there is increase in knowledge as individuals become wealthier, more among the females than males. For instance, 90.1% females from the poorest households indicate some knowledge and this trend increases to 96% for those from the richest households. However, the trend among males shows great variation as it decreases from 96.3% for those in the poorest households to 95.1% and 93.3% for those in poorer and middle quintiles respectively, and increases to about 97% for males from the richest households.

Table 13 Percentage of females who reject misconceptions of STIs transmission by background characteristics in Malawi 2010.

Background characteristics	A healthy looking person can have STI virus	The STI virus cannot be transmitted by mosquitoes	The STI virus cannot be transmitted by supernatural means	A person cannot become infected by sharing food with a person who has the virus	Weighted number of females
Age group					
15 – 19	83.9	79.3	90.1	92.7	19484
20 – 24	88.5	78.2	90.1	92.8	17883
Residence					
Urban	92.5	86.3	94.9	95.9	7451
Rural	84.5	76.9	88.9	92.0	29913
Region					
Northern	73.0	71.7	90.3	89.4	5458
Central	84.5	77.9	89.7	93.0	16199
Southern	91.1	81.5	90.4	93.4	16806
Marital status					
Married	86.6	76.3	88.8	91.4	18117
Never married	85.7	81.1	91.3	94.0	24079
Education level					
No education	75.9	75.6	85.4	84.3	1896
Primary	83.9	75.6	88.3	91.6	25634
Secondary	93.8	87.2	95.6	97.5	9217
Higher	97.4	95.5	96.7	98.1	617
Wealth quintile					
Poorest	81.2	75.6	86.4	90.1	6600
Poorer	83.9	73.7	88.8	91.1	8819
Middle	83.9	76.5	88.2	92.2	7446
Richer	87.1	80.0	91.4	93.6	7034
Richest	92.5	85.8	94.2	95.9	9238

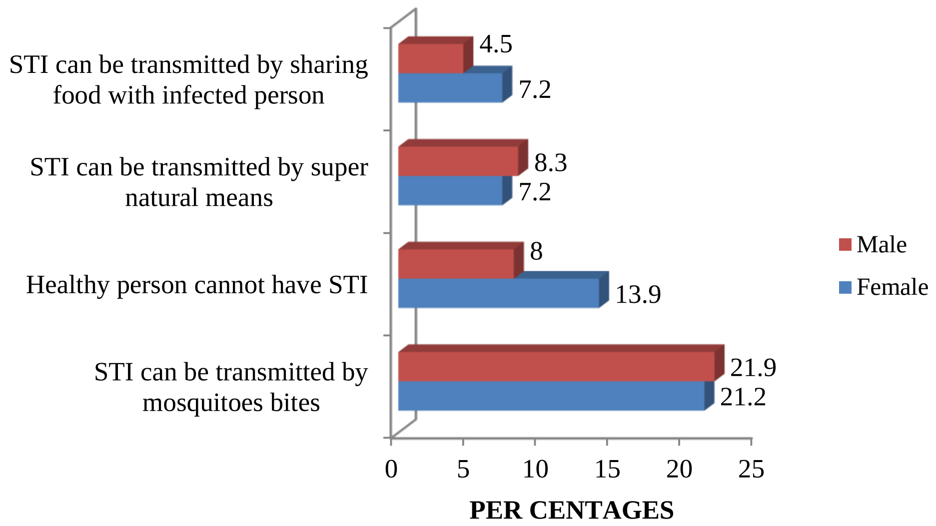
Source: Malawi Demographic Health Survey 2010, weighted cases

Table 14 Percentage of males aged 15-24 years who reject misconceptions of STIs transmission by background characteristics in Malawi 2010.

Background characteristics	A healthy looking person can have STI virus	The STI virus cannot be transmitted by mosquitoes	The STI virus cannot be transmitted by supernatural means	A person cannot become infected by sharing food with a person who has the virus	Weighted number of females
Age group					
15 – 19	90.0	79.3	91.7	94.3	6798
20 – 24	94.7	76.4	91.8	97.1	4857
Residence					
Urban	96.6	86.2	96.0	97.0	2677
Rural	90.6	75.6	90.5	95.0	8980
Region					
Northern	85.5	72.0	93.3	96.4	1219
Central	93.1	75.4	90.5	95.6	5208
Southern	92.4	82.2	92.6	95.2	5229
Marital status					
Married	93.3	69.8	89.3	97.6	1975
Never married	91.7	79.7	92.3	95.0	9682
Education level					
No education	90.1	59.7	78.3	84.5	278
Primary	89.5	74.1	90.4	94.8	7676
Secondary	97.0	86.8	95.3	97.8	3445
Higher	100.0	100.0	100.0	96.9	256
Wealth quintile					
Poorest	89.1	70.6	89.7	96.3	1742
Poorer	90.3	74.1	91.2	95.1	2127
Middle	91.7	72.6	89.4	93.3	2130
Richer	91.8	82.0	92.6	95.0	2326
Richest	94.9	85.2	94.0	96.8	3336

Source: Malawi Demographic Health Survey 2010, weighted cases

Figure 9 Percentage of males and females with misconceptions of STIs transmission in Malawi 2010



Among male respondents who had certain misconceptions regarding the transmission of STIs, about 22% believed that STIs can be transmitted through a mosquito bite, while 8% believe that a healthy person cannot have STIs. Moreover, 8.3% believe that STIs could be transmitted by supernatural means, and 4.5% believe that STIs could be transmitted by sharing food with someone who is infected by the virus (figure 9 above). However, among female respondents, majority (21.2%) of those with misconceptions believe that STIs can be transmitted by mosquitoes bites, followed by about 14 per cent who believe that a healthy person cannot have STIs, and then 7.2% believed that STIs could be transmitted by supernatural means. However, 7.2% believe that STIs could be transmitted by sharing food with infected person.

4.3.9.5 Attitude toward negotiating safer sexual relations with husband

The table 15 below presents female negotiating power for safer sex with a spouse who has sexual intercourse with other females or who is infected with STIs. However, individuals with knowledge of STIs transmission and ways to prevent it will be of little use if he or she feels powerless to negotiate safer sex with his or her partner. According to findings from the study, about seven in every ten males (about 78%) believe that a woman may refuse to have sex with her husband if she knows he has sex with other females (table 15).

Among never married males, (about 78%) had sex with other females, respondents living in urban areas (85.2%), those with secondary (about 87%) or higher education (about 86%), in the southern region (81.3%) and in the richest wealth quintile (83.5%) are more likely to agree that females are justified to refuse sex with their husbands than are other respondents. Among the age groups, males in the younger age group 15-19 years are more likely (about 78%) to agree that a woman is justified to refuse sex with the husband if she knows he has sex with other females.

Information on female justification to refuse sexual intercourse with her husband was not available for analysis in the study data. However, nine males out of every ten (90.3%) and eight of every ten females (about 82%) believe that a woman is justified in asking the husband to use a condom if she knows that her husband has sexually transmitted infections. Among both respondents, those aged 20-24 years (90.8% males and 88% females) living in the urban areas (93.8% males and 91.1% females), in the southern region (91.8% males and 90.4% females), being married (90.8% males and 87.5% females), with higher education (94.2% females), in the richest wealth quintile (93.4% males and 90.9% females) are more likely to agree that the said behaviour is justified than are other respondents.

Table 15 Percentage of males and females with attitude towards negotiating safer sexual relations by background characteristics in Malawi 2010

	MALE Woman is justified in:			FEMALE Woman is justified in:		
Background characteristics	Refusing to have sexual intercourse with husband if she knows he has sex with other female	Asking that they use a condom if she knows that her husband has an STI	Weighted number of Male	Refusing to have sexual intercourse with husband if she knows he has sex with other female	Asking that they use a condom if she knows that her husband has an STI	Weighted number of Female
Age group						
15 -19	77.9	89.9	3435	na	85.9	4727
20 -24	76.8	90.8	2467	na	88.0	4526
Residence						
Urban	85.2	93.8	1352	na	91.1	1847
Rural	75.2	89.2	4550	na	85.9	7407
Region						
Northern	73.6	88.3	627	na	85.3	1062
Central	74.5	89.2	2626	na	83.7	3988
Southern	81.3	91.8	2650	na	90.4	4203
Marital status						
Married	77.4	90.8	1006	na	87.5	4615
Never married	77.5	90.2	4896	na	86.4	4639
Education level						
No education	70.5	77.9	155	na	74.2	496
Primary	73.4	87.9	3887	na	85.8	6321
Secondary	86.6	96.3	1731	na	92.2	2282
Higher	85.9	95.3	128	na	94.2	155
Wealth quintile						
Poorest	73.3	86.8	891	na	82.1	1647
Poorer	73.7	88.1	1076	na	84.7	1763
Middle	74.3	89.9	1074	na	85.6	1853
Richer	78.2	90.8	1172	na	89.9	1726
Richest	83.5	93.4	1689	na	90.9	2265

Source: Malawi Demographic Health Survey 2010, weighted cases

4.3.9.6 Condom attributes among males and females

Table 16 below presents the extent to which young males and females support programmes that will aid condom knowledge among children and how accessible condoms are when in need. The intention of this study is to see if males and females are in support of the fact that children be taught about condoms to prevent the transmission of STIs, and to access condom availability during sexual intercourse. According to the findings, 59.4% females and about 63% males agree that children be taught about condoms, while 64.4% females and about 90% males agree that they could get a condom during sexual intercourse. Those who disagree were not included in the findings and as such were not presented.

Among males who agree that children be taught about condoms to prevent the spread of sexually transmitted infections, about 66% were aged 20-24 years, while 60.4% were aged 15-19 years. However, those who could get a condom were within the age group of 20-24 years (94.2%), while 86.4% were within the age group of 15-19 years. Among females, 63.2% of those who agree that children be taught about condoms to prevent STI were within the age group of 20-24 years, while 56% were within the age group of 15-19 years. However, 75% of those who agree that condoms are readily available were aged 20-24 years, while about 53% were aged 15-19 years. Most males who agree that children be taught about condoms to prevent STI were in the urban areas (66.1%), while about 62% were in the rural areas. Moreover, 90.1% of those who were in the rural areas agree that they could get a condom when necessary, while 89% of those who could get condoms were in the urban areas.

Among females who agree that children be taught about condom to prevent STIs, majority were in the urban areas (about 63%), while about 59% were in the rural areas. Moreover, about 65% of those who could get condoms when necessary were in the rural area, while 63% were in the urban area. Within the regions, most males who agree that children be taught about condoms to prevent STIs were in the southern region (about 64%), followed by those in the central region (63.1%), while those in the northern region (54.4%) were the minority. For those who could easily get condoms, majority were in the southern (90.5%) and central (90.6%) regions, while those in the northern region (about 84%) were the minority.

Among females who agree that children be taught about condom use, majority were in the southern region (about 67%), followed by those in the central region (55.1%), while the minority were in the northern region (48.1%). Furthermore, those who agree that they get a condom when in need were mostly in the southern region (about 73%), followed by about 57% in the central region, while the minority were in the northern region (about 59%). Most males who agree that children be taught about condoms to prevent STIs had secondary education (70.3%), followed by those with higher education (about 64%), then those with primary education (about 60%), while those with no education were the minority (50%). Moreover, majority of those who agree that condom are readily available when in need had higher education (98.3%), followed by those with secondary education (92.3%), then those with no education (about 91%). Those with primary education (88.3%) were the minority.

On the other hand, among females who agree that children be taught about condoms to prevent STIs, about 70% had higher education, followed by 63.1% with secondary education, while those with primary (about 59%) and no education (48%) were the minority. For females who could get a condom, majority were without education (about 75%), followed by those with higher education (about 66%), then about 64.4% with primary education, and about 63% were with secondary education. Most males who agree that children be taught about condoms to prevent STI were married (67.3%), while about 62% were never married. Moreover, majority of those that agree that they could get condoms were married (about 96%) while about 89% were never married.

Moreover, females who agree that children be taught about condoms to prevent STIs, 62.3% were married, while about 57% were never married. For females who could get condoms when in need, majority were married (77.1%), while 50.3% were never married. Most males who agree that children be taught about condoms to prevent STI were in the richest (65.6%) quintiles, followed by those in the poorer households (65%), then about 62% in the richer quintiles. Those in the middle (60.4%) and poorest households (about 58%) were the minority.

On the other hand, majority of those who agree that they could get a condom were from the poorest (about 92%) households, followed by those in the poorer quintile (91.2%), then those in the middle (about 91%) income households. Those in the richer (about 90%) and richest (about 88%) households were the minority.

Among females who agree that children be taught about condoms, majority were in the richest (about 63%) quintile, followed by those in the richer (60.2%) quintile, while those in the middle (about 59%), poorer (57.4%) and poorest (about 57%) quintiles were the minority. Among females who could get condoms, majority were in the poorer quintile (67%), followed by those in the richer (66.4%) quintile and those in the middle (about 66%) quintile. Those in the poorest (63.3%) and richest (61.1%) quintiles were the minority.

Table 16 Percentage of males/females who agree that children be taught about condoms and who accept that they could get condoms by background characteristics in Malawi 2010

	MALE			FEMALE		
Background characteristics	Percentage who agree that children be taught about condom to prevent STIs	Percentage who agree that they could get a condom	Weighted number of males	Percentage who agree that children be taught about condom to prevent STIs	Percentage who agree that they could get a condom	Weighted number of females
Age group						
15 – 19	60.4	86.4	3213	56.0	52.8	8433
20 – 24	65.6	94.2	2404	63.2	75.0	8420
Residence						
Urban	66.1	89.0	1299	62.7	63.0	3447
Rural	61.5	90.1	4319	58.6	64.8	13405
Region						
Northern	54.4	83.5	588	48.1	58.7	1982
Central	63.1	90.6	2515	55.1	56.6	7154
Southern	63.9	90.5	2514	66.6	72.8	7716
Education						
No education	50.0	90.9	125	48.0	74.9	824
Primary	59.5	88.3	3661	58.7	64.4	11332
Secondary	70.3	92.3	1709	63.1	62.5	4397
Higher	63.5	98.3	123	69.7	65.5	300
Marital status						
Married	67.3	95.6	976	62.3	77.1	8494
Never married	61.6	88.6	4641	56.7	50.3	8358
Wealth						
Poorest	57.70	91.8	823	56.6	63.3	2897
Poorer	65.0	91.2	1020	57.4	67.0	3165
Middle	60.4	90.5	1026	58.9	65.6	3319
Richer	61.6	89.9	1108	60.2	66.4	3178
Richest	65.6	87.6	1642	62.9	61.1	4292

Source: Malawi Demographic Health Survey 2010, weighted cases

CHAPTER V

MULTIVARIATE ANALYSIS

5.1 Introduction

Multivariate analysis is a statistical technique used to examine the relationships among multiple variables at the same time. In the current study, more than one dependent variables and independent variables were used, and they were known as the outcome or phenomenon of interest, and predictor variables. The multivariate technique used in this study was the binary logistic regression with variables significant at $p<0.05$, $p<0.001$ and $p<0.01$. The result (Odd ratios) of the regression is stratified by gender and residence controlled using the socio-economic and demographic variables.

5.2 Multiple sexual partnerships by background characteristics

The table 17 below presents the adjusted odd ratio of males and females with more than one sexual partner by socio-economic and demographic characteristics.

Among females, having more than one sexual partner was statistically significant as evident from age group, residence, region, education, wealth and marital status. According to the study, the prevalence of multiple sexual partnerships (MSP) was lower among females aged 15-19 years (OR=0.71), who reside in the urban areas (OR=0.80), with no education (OR=0.61), and primary education (OR=0.62), who could read whole sentences (OR=0.81), and from the Chewa (OR=0.79), Ngoni (OR=0.80), and Yao (OR=0.77) ethnic groups. However, literacy and ethnicity was not significant in the study despite some categories were significant. Moreover, the prevalence of MSP was higher among females in the northern (OR=1.30), and central (OR=1.51) regions, those in the poorest (OR=1.31) and poorer households (OR=1.21), and married (OR=5.71).

Among males, the odd of having more than one sexual partner was statistically significant with religion, education, and marital status. According to the study, other Christian males (OR=1.40), who were Catholic (OR=1.63), and married (OR=1.59) were more likely to have more sexual partners.

Comparatively, among both respondents, literacy and ethnicity were not significant for both males and females, while marital status and education were statistically significant for both respondents. The differences that were noted in the findings were evident from the fact that, age group, region, residence and wealth were statistically significant for females but not for the males. From the study findings, females were more likely to have more sexual partners than males as presented in table 16 below.

Table 17 Adjusted odd ratios of Males and females with more than one sexual partner by background characteristics in Malawi 2010

	FEMALE			MALE		
Background		95% C.I For EXP(B)			95% C. I For EXP (B)	
characteristics	EXP (B)	Lower	Upper	EXP (B)	Lower	Upper
Age group						
15 – 19	0.71***	0.64	0.79	1.20	0.97	1.50
20 – 24®	**1.00**			**1.00**		
Residence						
Urban	0.80**	0.69	0.92	0.91	0.70	1.184
Rural®	**1.00**			**1.00**		
Religion				*		
Other Christian	0.93	0.79	1.10	1.40*	1.02	1.92
Catholic	0.97	0.82	1.16	1.63**	1.17	2.26
CCAP	0.94	0.78	1.13	1.25	0.89	1.76
Muslim	0.84	0.65	1.08	1.01	0.60	1.68
Others®	**1.00**			**1.00**		
Region	***					
Northern	1.30*	1.07	1.59	0.68	0.46	1.02
Central	1.51***	1.32	1.73	0.94	0.73	1.21
Southern®	**1.00**			**1.00**		
Education	***			**		
No education	0.61*	0.39	0.95	1.19	0.50	2.81
Primary	0.62*	0.42	0.91	0.75	0.39	1.42
Secondary	0.90	0.61	1.30	1.11	0.60	2.08
Higher®	**1.00**			**1.00**		
Wealth	*					
Poorest	1.31**	1.10	1.56	0.94	0.67	1.32
Poorer	1.21**	1.02	1.44	1.14	0.84	1.56
Middle	1.18	1.00	1.39	0.94	0.68	1.28
Richer	1.05	0.90	1.22	0.99	0.75	1.32
Richest®	**1.00**			**1.00**		
Literacy						
Able to read whole sentence	0.81*	0.68	0.96	1.00	0.72	1.39
Cannot read/No card/Blind/Others	0.84	0.69	1.01	0.73	0.50	1.08
Able to read part of sentence ®	**1.00**			**1.00**		
Marital status						
Married	5.71***	5.12	6.37	1.59**	1.22	2.08
Never married®	**1.00**			**1.00**		
Ethnicity						
Chewa	0.79**	0.66	0.94	1.19	0.85	1.68
Lomwe	0.87	0.73	1.04	0.90	0.64	1.26
Ngoni	0.80*	0.66	0.97	1.30	0.85	1.98
Tumbuka	0.91	0.73	1.13	0.94	0.65	1.35
Yao	0.77*	0.60	0.97	0.86	0.52	1.40
Others®	**1.00**			**1.00**		

*Source: Malawi Demographic Health Survey 2010, ***p<0.001, ** p<0.01,* p<0.05 ® Reference category*

5.3 Multiple sexual partnerships among males and females by residence

Table 18 presents rural/urban variations among males and females with more than one sexual partner by socio-economic and demographic characteristics.

Among rural females with more than one sexual partner, age group, region, education, marital status, and literacy were statistically significant**.** According to the study, rural females aged 15-19 years were (OR=0.72) less likely to have more sexual partners, while those in the northern region (OR=1.26), and central region (OR=1.37) were more likely to have more sexual partners. Moreover, those who could read whole sentences (OR=0.77), those that could not read at all (OR=0.79). Moreover, despite religion was not significant in the study being a Muslim (OR=0.74) reduces the prevalence of multiple sexual partnerships among rural females. Married females were (OR=6.06) more likely to have more sexual partners than never married females.

Among rural males, religion, education, marital status, and literacy was statistically significant. According to findings from the study, being a Catholic (OR=1.82), other Christian (OR=1.61), and married (OR=1.80), increases the prevalence of MSP among rural males. Moreover, having some primary education (OR=0.28) reduces the prevalence of MSP among rural males.

Comparatively among males and females in the rural area, education, marital status and literacy were statistically significant for both respondents. Moreover, ethnicity was not significant for either of the respondents. Certain variation was evident especially by age group, and region which gave significant results for females but not for males. From the study findings, one can conclude that rural females were more likely to have multiple sexual partners than their male countparts. This could be considered as one of the reason for the high vulnerability to infections among females than males.

Among urban males, region, education, wealth and literacy were statistically significant. According to the study, urban males in the central region (OR=0.59), those in the richer quintile (OR=0.43) and those that could read whole sentences (OR=0.29) were less likely to have more sexual partners.

Among urban females, age group, region, education, wealth, and marital status was statistically significant. According to the study, urban females aged 15-19 years (OR=0.64), with no education (OR=0.39), and from the Chewa (OR=0.58), Ngoni (OR=0.66), and the Yao ethnic groups (OR=0.57) were less likely to have more sexual partners. Ethnicity was not significant in the study. However, those in the central region (OR=1.74), from the poorest (OR=0.34), poorer (OR=2.73), and middle (OR=1.87) income households, and married (OR=4.22) were more likely to have more sexual partners. Within the urban area, the study found females having more prevalence of MSP than males.

Comparatively among females, age group, region, education and marital status were statistically significant for both respondents. Meanwhile, religion and ethnicity was not significant for both males and females in the study. However, variation was evident especially with wealth; significant for urban females and not for rural females, and literacy; significant for rural females and not urban females.

In terms of residence, the study found that, females from both rural and urban areas were more likely to have multiple sexual partners than males, with a higher prevalence among urban females than rural females.

Table 18 Adjusted odd ratios of rural/urban males and females who had more than one sexual partner by background characteristics in Malawi 2010

	RURAL		URBAN	
	MALE	**FEMALE**	**MALE**	**FEMALE**
Background characteristics	EXP(B) 95% C.I	EXP(B) 95% C.I	EXP(B) 95% C.I	EXP(B) 95% C.I
Age group				
15-19	1.16	0.72***	1.39	0.64***
20-24®	**1.00**	**1.00**	**1.00**	**1.00**
Region		***	*	***
Northern	0.85	1.26*	0.40	1.01
Central	1.17	1.37***	0.59*	1.74***
Southern®	**1.00**	**1.00**	**1.00**	**1.00**
Religion	*			
Other Christian	1.61*	0.97	0.88	0.82
Catholic	1.82**	1.06	1.02	0.69
CCAP	1.45	1.01	1.13	0.80
Muslim	0.89	0.74*	1.71	1.18
Others ®	**1.00**	**1.00**	**1.00**	**1.00**
Education	**	***	**	*
No education	0.55	0.48	0.50	0.39*
Primary	0.28*	0.47	0.88	0.68
Secondary	0.38	0.66	2.04	1.01
Higher®	**1.00**	**1.00**	**1.00**	**1.00**
Wealth			*	***
Poorest	1.10	1.17	0.17	3.45 ***
Poorer	1.25	1.09	2.17	2.73**
Middle	0.99	1.06	1.41	1.87**
Richer	1.28	0.97	0.43*	1.17
Richest®	**1.00**	**1.00**	**1.00**	**1.00**
Literacy	**	*	**	
Able to read whole sentence	1.13	0.77**	0.29*	1.41
Cannot read/No card/Blind/Others	0.67	0.79*	0.81	1.55
Able to read part of sentence ®	**1.00**	**1.00**	**1.00**	**1.00**
Marital status				
Married	1.80***	6.06***	0.68	4.22***
Never married®	**1.00**	**1.00**	**1.00**	**1.00**
Ethnicity				
Chewa	1.04	0.87	1.24	0.58**
Lomwe	0.90	0.89	1.20	0.82
Ngoni	0.98	0.87	2.33	0.66*
Tumbuka	0.68	0.98	2.07	0.72
Yao	0.85	0.87	0.83	0.57*
Others®	**1.00**	**1.00**	**1.00**	**1.00**

*Source: Malawi Demographic Health Survey 2010. ***p<0.001, **p<0.01, *p<0.05 ® Reference category*

5.4 Early sexual debut among males/females by background characteristics

Table 19 below presents a summary of the adjusted odd ratio of males and females who initiate sexual activity early by background characteristics.

According to findings from female respondents, age group, religion, region, education, wealth, and marital status were statistically significant. As indicated, females aged 15-19 years (OR=4.18), who were Muslims (OR=1.42), had no education (OR=3.99), primary education (OR=4.12) and secondary education (OR=1.90), could read whole sentences (OR=1.22) were more likely to initiate sexual debut early. Literacy was not statistically significant in the study. However, females in the northern (OR=0.79) and central (OR=0.66) regions, in the poorest quintile (OR=0.69), being married (OR=0.17) were less likely to initiate sexual activities early.

Among males, age group, region, education, wealth and ethnicity were statistically significant. As indicated, males aged 15-19 years (OR=3.50), in the northern region (OR=2.35), and from the Chewa ethnic group (OR=1.45) were more likely to initiate sexual activities early. Meanwhile, being a Muslim (OR=0.57), in the poorest (OR=0.69), poorer (OR=0.67), middle (OR=0.55) and richer (OR=0.68) income households reduces the odds of early sexual debut.

Comparatively, age group, region, education and wealth were statistically significant for both males and females, while residence and literacy were not significant for either of the respondents. However, variation was evident especially with religion, marital status as they were significant with females and not males, and ethnicity; significant for males and not females. From the study findings, both respondents were more likely to initiate sexual debut early, with the prevalence much higher among females than males.

Table 19 Adjusted odd ratios of males and females engaged in early sexual debut (before 16 years) by background characteristics in Malawi 2010

	FEMALE			MALE		
		95% C.I For EXP(B)			95% C. I For EXP (B)	
Background characteristics	EXP (B)	Lower	Upper	EXP (B)	Lower	Upper
Age group						
15 – 19	4.18***	3.74	4.67	3.50***	2.83	4.33
20 – 24®	**1.00**			**1.00**		
Residence						
Urban	1.05	0.90	1.23	1.00	0.79	1.28
Rural®	**1.00**			**1.00**		
Religion	**					
Other Christian	0.99	0.82	1.19	1.03	0.77	1.36
Catholic	0.94	0.77	1.14	1.13	0.83	1.52
CCAP	0.87	0.71	1.07	1.10	0.81	1.50
Muslim	1.42*	1.08	1.87	0.57*	0.35	0.93
Others®	**1.00**			**1.00**		
Region	***			***		
Northern	0.79*	0.64	0.99	2.35***	1.63	3.39
Central	0.66***	0.57	0.76	0.99	0.78	1.25
Southern®	**1.00**			**1.00**		
Education	***			*		
No education	3.99***	2.53	6.27	1.95	0.78	4.86
Primary	4.12***	2.79	6.07	1.31	0.67	2.57
Secondary	1.90**	1.31	2.77	0.94	0.49	1.81
Higher®	**1.00**			**1.00**		
Wealth	***			**		
Poorest	0.69***	0.57	0.84	0.69*	0.50	0.95
Poorer	0.96	0.79	1.16	0.67**	0.49	0.90
Middle	0.84	0.70	1.01	0.55***	0.41	0.74
Richer	0.96	0.80	1.14	0.68**	0.52	0.89
Richest®	**1.00**			**1.00**		
Literacy						
Able to read whole sentence	1.22*	1.01	1.48	1.03	0.75	1.40
Cannot read/No card/Blind/Others	1.23	1.00	1.52	0.97	0.68	1.38
Able to read part of sentence®	**1.00**			**1.00**		
Marital status						
Married	0.17***	0.15	0.19	na	0.00	0.10
Never married®	**1.00**			**1.00**		
Ethnicity				*		
Chewa	0.85	0.70	1.04	1.45*	1.05	2.02
Lomwe	1.05	0.86	1.28	0.96	0.69	1.33
Ngoni	0.90	0.73	1.12	1.03	0.69	1.53
Tumbuka	0.95	0.74	1.20	1.00	0.71	1.42
Yao	0.86	0.66	1.12	1.39	0.87	2.22
Others®	**1.00**			**1.00**		

*Source: Malawi Demographic Health Survey 2010, *** p<0.001, ** p<0.01,* p<0.05 ® Reference category*

5.5 Early sexual debut among males and females by residence

Table 20 below presents the adjusted odds ratio of rural/urban males and females who were engaged in early sexual debut by background characteristics.

Among rural males, age group, region, wealth and ethnicity were statistically significant. As indicated, rural males aged 15-19 years (OR=3.84), in the northern region (OR=2.09), and from the Chewa ethnic group (OR=1.59), were more likely to initiate sexual activities early. Meanwhile, those in the poorest (OR=0.64), poorer (OR=0.63), middle (OR=0.53), and richer (OR=0.61), income households were less likely to initiate sexual activity early.

Among rural females, age group, region, religion, education, wealth, and marital status were statistically significant. According to the study, females aged 15-19 years (OR=3.85), with no education (OR=3.37), and those with primary education (OR=3.86), who could read whole sentence (OR=1.26), and those that could not read at all (OR=1.29) were more likely to initiate sexual activities early. Literacy was not significant according to the study findings though some categories were significant. Meanwhile, those in the northern (OR=0.69) and central (OR=0.55) regions, from the poorest (OR=0.80) households, and married (OR=0.15), were less likely to initiate sexual activities early.

Comparatively among both respondents in the rural area, age group, region, and wealth were statistically significant. Meanwhile, certain variation was evident especially with religion, education, marital status and ethnicity. From the study findings, rural females were more likely to initiate early sexual activities than rural males.

Among urban males, age group and literacy were statistically significant. According to the study findings, urban males aged 15-19 years (OR=2.96), in the northern region (OR=2.80), who could read whole sentences (OR=7.03), were more likely to initiate sexual activity early.

Among urban females, age group, region, education, wealth and marital status were statistically significant. According to the study findings, urban females aged 15-19 years (OR=6.42), in the northern region (OR=2.04), with no education (OR=8.02), some primary education (OR=3.31), and secondary education (OR=1.61), were more likely to initiate sexual activity early. Meanwhile, urban females in the poorest (OR=0.19), middle (OR=0.53) and richer (OR=0.63) households, and being married (OR=0.28) were less likely to initiate sexual activity early.

As indicated among urban respondents, only age group was statistically significant for both respondents, while religion and ethnicity were not significant result for both respondents. The variation observed among urban respondents was evident especially with region, education, wealth and marital status which were statistically significant for females and not for males, while literacy was significant for males and not for females. From the rural/urban variation among respondents, the study therefore found the prevalence of early sexual debut common among urban females than males, indicating that urban females who initiate sexual debut early were more vulnerable to infections than their rural counterparts.

Table 20 Adjusted odd ratios of rural/urban males and females engaged in early sexual debut (before 16 years) by background characteristics in Malawi 2010

	RURAL		**URBAN**	
	MALE	**FEMALE**	**MALE**	**FEMALE**
Background characteristics	EXP(B) 95% C.I	EXP (B) 95% C.I	EXP (B) 95% C.I	EXP (B) 95% C.I
Age group				
15-19	3.84***	3.85***	2.96***	6.42***
20-24®	**1.00**	**1.00**	**1.00**	**1.00**
Region	***	***		*
Northern	2.09**	0.69**	2.80*	2.04*
Central	0.82	0.55***	1.40	1.03
Southern®	**1.00**	**1.00**	**1.00**	**1.00**
Religion		*		
Other Christian	1.11	0.95	0.97	1.11
Catholic	1.26	0.88	1.02	1.31
CCAP	1.17	0.80	1.09	1.13
Muslim	0.65	1.34	0.43	1.44
Others®	**1.00**	**1.00**	**1.00**	**1.00**
Education		***		***
No education	2.05	3.37**	3.29	8.02***
Primary	1.47	3.86**	1.33	3.31***
Secondary	1.04	1.74	0.92	1.61*
Higher®	**1.00**	**1.00**	**1.00**	**1.00**
Wealth	**	**		***
Poorest	0.64*	0.80*	0.90	0.19***
Poorer	0.63**	1.09	0.96	0.77
Middle	0.53***	0.97	0.79	0.53*
Richer	0.61**	1.13	1.02	0.63**
Richest®	**1.00**	**1.00**	**1.00**	**1.00**
Literacy			**	
Able to read whole sentence	0.83	1.26*	7.03**	0.88
Cannot read/No card/Blind/Others	0.89	1.29*	2.96	0.74
Able to read part of sentence®	**1.00**	**1.00**	**1.00**	**1.00**
Marital status				
Married	na	0.15***	na	0.28***
Never married®	**1.00**	**1.00**	**1.00**	**1.00**
Ethnicity	**			
Chewa	1.59*	0.89	1.25	1.05
Lomwe	0.84	1.06	1.34	0.99
Ngoni	1.13	1.00	0.83	0.86
Tumbuka	0.98	1.00	1.04	1.04
Yao	1.43	0.93	1.27	0.83
Others ®	**1.00**	**1.00**	**1.00**	**1.00**

*Source: Malawi Demographic Health Survey 2010. ***p<0.001, **p<0.01, *p<0.05 ® Reference category,*

5.6 Non-use of condom among males/females by background characteristics

Table 21 presents the adjusted odds ratio of males and females who did not use condoms during their last sexual debut by background characteristics.

The study found among females that, age group, religion, region, education, wealth, marital status and ethnicity were statistically significant. As indicated, the prevalence of non-use of condoms was higher among females aged 15-19 years (OR=1.30), being a Muslim (OR=1.59), with no education (OR=6.22), some primary education (OR=4.15), secondary education (OR=2.80), in the poorest (OR=1.48), middle (OR=1.52), and richer (OR=1.37) income households, who could not read at all (OR=1.44), and being married (OR=1.50). Meanwhile, the prevalence of non-use of condom was lower among females in the northern (OR=0.62) region.

Among males, age group, education, marital status, and ethnicity were statistically significant in the study. As indicated, the prevalence of non-use of condoms was lower among respondents aged 20-24 years (OR=0.45), and being married (OR=0.43).

According to the study, age group, education, marital status, and ethnicity were statistically significant for both respondents. However, place of residence, and literacy was not significant among both respondents. Variations among respondents were evident particularly with religion, region, and wealth which were statistically significant for females and not for males. From the study findings, one can conclude that, the prevalence of non-use of condoms was higher among females than males, and facilitate the spread of sexually transmitted infections.

Table 21 Adjusted odd ratios of males/females who did not use condom during the last sexual debut by background characteristics in Malawi 2010

	FEMALE			MALE		
		95% C.I For EXP(B)			95% C. I For EXP (B)	
Background characteristics	**EXP (B)**	**Lower**	**Upper**	**EXP (B)**	**Lower**	**Upper**
Age group						
15 – 19	1.30**	1.08	1.56	0.45***	0.36	0.56
20 – 24®	**1.00**			**1.00**		
Residence						
Urban	0.88	0.71	1.10	0.80	0.61	1.06
Rural®	**1.00**			**1.00**		
Religion	*					
Other Christian	0.97	0.73	1.29	0.97	0.71	1.34
Catholic	0.90	0.67	1.21	0.89	0.63	1.26
CCAP	0.84	0.62	1.14	0.98	0.69	1.38
Muslim	1.59*	1.04	2.44	0.81	0.48	1.36
Others®	**1.00**			**1.00**		
Region	*					
Northern	0.62**	0.46	0.85	0.93	0.62	1.39
Central	0.87	0.70	1.09	1.25	0.96	1.64
Southern®	**1.00**			**1.00**		
Education	***			**		
No education	6.22***	3.10	12.51	0.71	0.27	1.87
Primary	4.15***	2.74	6.29	0.80	0.42	1.53
Secondary	2.80***	1.91	4.12	1.27	0.68	2.35
Higher®	**1.00**			**1.00**		
Wealth	*					
Poorest	1.48*	1.09	2.01	1.00	0.69	1.44
Poorer	1.31	0.98	1.75	0.90	0.64	1.28
Middle	1.52**	1.15	2.01	0.97	0.69	1.37
Richer	1.37*	1.07	1.76	1.25	0.93	1.68
Richest®	**1.00**			**1.00**		
Literacy						
Able to read whole sentence	1.24	0.91	1.69	1.20	0.81	1.78
Cannot read/No card/Blind/others	1.44*	1.00	2.06	0.98	0.62	1.55
Able to read part of sentence ®	**1.00**			**1.00**		
Marital status						
Married	1.50***	1.23	1.82	0.43***	0.31	0.59
Never married®						
Ethnicity	***			**		
Chewa	1.64	1.21	2.23	0.74	0.51	1.07
Lomwe	0.85	0.63	1.13	0.75	0.52	1.10
Ngoni	0.93	0.68	1.26	1.37	0.89	2.13
Tumbuka	1.44	1.02	2.02	1.10	0.75	1.63
Yao	0.54	0.37	0.79	1.22	0.74	2.03
Others®	**1.00**			**1.00**		

*Source: Malawi Demographic Health Survey 2010, ***p<0.001, ** p<0.01,* p<0.05. ® Reference category*

5.7 Non-use of condoms among males and females by residence

Table 22 below presents rural/urban males and females who did not use condoms by background characteristics.

Among rural males, age group, region, education, marital status and ethnicity were statistically significant. According to the study findings, the prevalence of non-use of condoms was lower among respondents aged 15-19 years (OR=0.43), who were married (OR=0.43), and from the Chewa ethnic group (OR=0.47). Meanwhile, the prevalence of non-use of condoms was higher among respondents in the central region (OR=1.85).

Moreover, amongst rural females, region, religion, education, literacy, marital status, and ethnicity were statistically significant. According to the study, the prevalence of non-use of condoms was lower among those in the northern region (OR=0.63), and from the Yao ethnic group (OR=0.53). Meanwhile, being a Muslim (OR=1.93), with no education (OR=4.73), and some primary education (OR=3.46), in the middle (OR=1.42), and richer (OR=1.44), households cannot read at all (OR=1.64), from the Chewa (OR=1.51), and Tumbuka (OR=1.60) ethnic groups increases the odds of not using condoms.

According to the findings among rural respondents, region, education, marital status, and ethnicity were statistically significant for both respondents. Variation was evident particularly with, age group, which was significant with males and not females, religion, which was significant with females and not with males, and literacy, which was significant with females and not with males. Meanwhile, wealth was not significant for either of the respondents in the study. From the findings within the rural areas, the prevalence of non-use of condoms was higher among females than males.

However, among urban males, age group, and marital status was statistically significant. As indicated, the prevalence of non –use of condoms was lower among urban males aged 15-19 years (OR=0.53), who were married (OR=0.36) than those in the reference categories.

Among urban females, age group, region, education, marital status, and ethnicity were statistically significant. As indicated, the prevalence of non-use of condoms was higher among those aged 15-19 years (OR=1.62), with no education (OR=8.66), some primary education (OR=3.73), and those with secondary education (OR=2.63), in the middle quintile (OR=3.28), and being married (OR=2.16). Meanwhile, the prevalence of non-use of condoms was lower among respondents in the central region (OR=0.57), and being from the Yao ethnic group (OR=0.48).

Among urban respondents, age group, and marital status were statistically significant for both respondents. Variation was evident particularly with region, education, and ethnicity, which were significant with females and not with males, while religion, wealth, and literacy were not significant for both respondents. Urban females were significantly more likely than urban males not to use condom during the last sexual debut and this increase their vulnerability to infections.

Table 22 Adjusted odd ratios of rural/urban males and females who did not use condom by background characteristics in Malawi 2010

	RURAL		URBAN	
	MALE	FEMALE	MALE	FEMALE
Background characteristics	**EXP(B) 95% C.I**	**EXP(B) 95% C.I**	**EXP(B) 95% C.I**	**EXP(B) 95% C.I**
Age group				
15-19	0.43***	1.22	0.53**	1.62**
20-24®	**1.00**	**1.00**	**1.00**	**1.00**
Region	**	**		**
Northern	0.98	0.63*	0.98	1.15
Central	1.85**	1.25	0.70	0.57**
Southern ®	**1.00**	**1.00**	**1.00**	**1.00**
Religion		**		
Other Christian	0.77	0.90	1.49	1.17
Catholic	0.71	0.87	1.18	0.89
CCAP	0.74	0.70	1.72	1.24
Muslim	0.71	1.93*	1.05	1.25
Others ®	**1.00**	**1.00**	**1.00**	**1.00**
Education	*	**		***
No education	0.65	4.73**	1.24	8.66*
Primary	0.80	3.46**	1.01	3.73***
Secondary	1.30	2.27	1.522	2.63***
Higher ®	**1.00**	**1.00**	**1.00**	**1.00**
Wealth				
Poorest	0.98	1.36	2.03	4.76
Poorer	0.91	1.21	0.74	3.17
Middle	1.01	1.42*	0.60	3.28*
Richer	1.27	1.44*	1.22	1.00
Richest ®	**1.00**	**1.00**	**1.00**	**1.00**
Literacy		*		
Able to read whole sentence	1.26	1.33	0.88	0.30
Cannot read/No card/Blind/Others	1.00	1.64*	0.87	0.24
Able to read part of sentence ®	**1.00**	**1.00**	**1.00**	**1.00**
Marital status				
Married	0.43***	1.36**	0.36*	2.16***
Never married ®	**1.00**	**1.00**	**1.00**	**1.00**
Ethnicity	***	***		*
Chewa	0.47**	1.51*	1.93	1.27
Lomwe	0.64	0.99	1.265	0.62
Ngoni	1.22	0.91	1.57	0.73
Tumbuka	0.90	1.60*	1.63	0.94
Yao	1.00	0.53*	2.28	0.48*
Others ®	**1.00**	**1.00**	**1.00**	**1.00**

*Source: Malawi Demographic Health Survey 2010. *** p<0.001, ** p<0.01, *p<0.05 ® Reference category*

5.8 Inconsistent condom use by background characteristics

Table 23 below presents the adjusted odds ratio of inconsistent use of condoms among males and females by background characteristics.

According to findings among females in the study, age group, education, religion, marital status and ethnicity were statistically significant. As indicated, the prevalence of inconsistent condom use was higher among females aged 15-19 years (OR=1.79), with primary education (OR=1.47), being Muslim (OR=2.55), Other Christian (OR=1.39), and being married (OR=3.77). Meanwhile, the prevalence was lower among females from the Yao (OR=0.42) ethnic group.

However, among males, education, wealth, and marital status were statistically significant. According to the study, inconsistent condom use was lower among males in the urban areas (OR=0.59), with primary education (OR=0.56). Meanwhile, the prevalence of inconsistent condom use was higher among females in the rich (OR=1.73) households, and being married (OR=1.97).

Respondent's educational levels and marital status were statistically significant with inconsistent condom use among both respondents. Gender variation was evident especially with age group, religious affiliation, and ethnic origin which were statistically significant with inconsistent condom use among females. Meanwhile, wealth was significant among males.

Table 23 Adjusted odd ratios of males/females who did not use condom consistently by background characteristics in Malawi 2010

Background characteristics	FEMALE			MALE		
		95% C. I For EXP (B)			95% C. I For EXP (B)	
	Odd ratios	Lower	Upper	Odd ratios	Lower	Upper
Age group						
15-19	1.79***	1.43	2.24	0.76	0.50	1.13
20-24®	**1.00**			**1.00**		
Residence						
Urban	0.74*	0.58	0.94	0.59*	0.37	0.94
Rural®	**1.00**			**1.00**		
Region						
Northern	0.70	0.46	1.04	1.55	0.81	2.97
Central	1.00	0.76	1.32	1.22	0.77	1.93
Southern®	**1.00**			**1.00**		
Education	**			*		
No education	1.39	0.65	2.99	0.62	0.19	2.07
Primary	1.47**	1.16	1.87	0.56**	0.37	0.84
Secondary/higher®	**1.00**			**1.00**		
Wealth				*		
Rich	0.77	0.58	1.01	1.73*	1.11	2.70
Average	1.06	0.76	1.48	0.86	0.49	1.52
Poor®	**1.00**			**1.00**		
Literacy						
Literate	0.69	0.48	0.99	1.00	0.58	1.72
Illiterate®	**1.00**			**1.00**		
Religion	*					
Other Christian	1.39*	1.00	1.93	1.14	0.66	1.95
Catholic	1.22	0.87	1.72	0.65	0.35	1.22
CCAP	1.21	0.85	1.71	0.70	0.37	1.28
Muslim	2.55***	1.51	4.28	0.97	0.41	2.27
Other®	**1.00**			**1.00**		
Marital status						
Married	3.77***	2.89	4.91	1.97**	1.25	3.09
Never married®	**1.00**			**1.00**		
Ethnicity	***					
Chewa	1.29	0.86	1.91	0.92	0.48	1.79
Lomwe	0.74	0.51	1.08	0.78	0.39	1.58
Ngoni	0.68	0.46	1.00	1.59	0.79	3.22
Tumbuka	1.00	0.64	1.54	1.82	0.96	3.48
Yao	0.44***	0.27	0.71	1.48	0.63	3.47
Others®	**1.00**			**1.00**		

*Source: Malawi Demographic Health Survey 2010, ***p<0.001, **p<0.01, *p<0.05, ® reference category*

5.9 Inconsistent condom use among males and females by residence

Table 24 below presents the adjusted odds ratios of rural/urban males and females who inconsistently use condoms by background characteristics.

According to findings from rural males, region, wealth and marital status were statistically significant. As indicated, the prevalence of inconsistent condom use was significantly higher among respondents in the northern (OR=2.92), and central (OR=2.25) regions, in the rich (OR=1.92), and being married (OR=2.29). Meanwhile, the prevalence was significantly lower among rural males with primary education (OR=0.63).

Among rural females, age group, region, education, religion, marital status and ethnicity were statistically significant. As indicated, the prevalence of inconsistent condom use was significantly higher among rural females aged 15-19 years (OR=1.58), with primary education (OR=1.69), being a Muslim (OR=3.10), and married (OR=2.84). Meanwhile, the prevalence of inconsistent condom use was significantly low among rural females in the northern region (OR=0.52), and being from the Yao (OR=0.33) ethnic group.

Within the rural area, region and marital status were statistically significant for both respondents. Meanwhile, the differences observed among respondents were evident with age group, education, religion and ethnicity which were significant with females and not with males, while wealth was significant with males and not with females. The prevalence of inconsistent condom use was therefore higher among rural females than their males counterparts, and this facilitate the spread of infections.

Among urban males, ethnicity, education and marital status were statistically significant, and as indicated, urban males who were married (OR=2.00), were two times more likely to use condoms inconsistently than those never married.

However, among urban females, age group, marital status and ethnicity were statistically significant. As indicated, the prevalence of inconsistent condom use was significantly higher among urban females aged 15-19 years (OR=2.23), who were other Christian (OR=1.84), and married (OR=9.07). From the findings, the prevalence of inconsistent condom use was higher among urban females than urban males.

Table 24 Adjusted odd ratios of rural/urban males and females who did not use condom consistently by background characteristics in Malawi 2010

	RURAL		URBAN	
	MALE	FEMALE	MALE	FEMALE
Background characteristics	**EXP(B) 95% C.I**	**EXP(B) 95% C.I**	**EXP(B) 95% C.I.**	**EXP (B) 95% C. I**
Age group				
15 – 19	0.69	1.58**	0.76	2.23***
20 – 24®	**1.00**	**1.00**	**1.00**	**1.00**
Region	**	**		
Northern	2.92**	0.52**	1.82	2.82
Central	2.25**	1.12	1.22	0.84
Southern®	**1.00**	**1.00**	**1.00**	**1.00**
Education		**	*	
No education	0.77	1.51	0.66	1.08
Primary	0.63*	1.69***	0.59	1.04
Secondary/high®	**1.00**	**1.00**	**1.00**	**1.00**
Wealth	**			
Rich	1.92**	0.87	1.49	0.31
Average	0.97	1.04	0.85	21.21
Poor®	**1.00**	**1.00**	**1.00**	**1.00**
Literacy				
Literate	1.13	0.67	0.98	0.83
Illiterate®	**1.00**	**1.00**	**1.00**	**1.00**
Religion		*		
Other Christian	0.90	1.18	1.18	1.84*
Catholic	0.56	1.13	0.69	1.28
CCAP	0.58	1.04	0.71	1.50
Muslims	0.90	3.10**	1.01	1.84
Others®	**1.00**	**1.00**	**1.00**	**1.00**
Marital status				
Married	2.29**	2.84***	2.00**	9.07***
Never married®	**1.00**	**1.00**	**1.00**	**1.00**
Ethnicity		***	*	*
Chewa	0.66	1.21	0.97	1.22
Lomwe	0.77	0.85	0.82	0.57
Ngoni	0.83	0.72	1.56	0.56
Tumbuka	1.15	1.35	1.74	0.54
Yao	1.60	0.33***	1.46	0.55
Others®	**1.00**	**1.00**	**1.00**	**1.00**

*Source: Malawi Demographic Health Survey 2010, ***p<0.001, **p<0.01, *p<0.05, ® Reference category*

CHAPTER VI

DISCUSSION

This study was set out to examine the determinants of youth's sexual behaviour and knowledge of reproductive tract infections (RTIs) and sexually transmitted infections (STIs) in Malawi. This chapter therefore presents a discussion of the study findings in relation to the literature. The reasons for risky sexual behaviour among youth were studied using three characteristics identified as; early age of sexual debut, non-use of condoms and multiple sexual partnerships. Although many studies have documented the sexual behaviour of youth, little emphasis has been made with regard to the differences in behaviour among males and females within the rural and urban milieu. It is based on this fact that, the present study aims at closing the gap using the hypothesis outlined in the previous chapter.

6.1 Determinants of non-use of condom

This study has shown that, the rate of condom use is generally low and non-use very high among youths in Malawi, with more males (about 82.5%) reporting condom use than females (7.4%), while rural/urban females were more likely not to use a condom than rural/urban males, thus presenting a great gender variation in the spread of RTIs/STIs. This finding is however similar to what has been reported in previous studies done in other countries. For instance, (Sabageh, et al., 2014) found that among sexually active adolescents in Nigeria, 49.7% females had ever used a condom, with 60.5% in the rural area while 39.5% were in the urban area, and 34% had used a condom for the first time. Another study, (Mhlongo, et al., 2013) also reported a lower rate of condom use of 43% among females aged 18-23 years, and a recent study in China by (Sudhinaraset, et al., 2012) reported a low prevalence of condom use of 32% at first sex among young female migrants aged 15-24 years, with 63.6% among urban non-migrants, 83.1% of rural-to-urban migrants reported not using a condom at first sex. Moreover, (Kissinger, 2014) reported a lower condom use of 37% among African American women aged 18-19 years. These observed differences can be explained by the limitations of the previous studies which were based on non-representative samples. Sabageh, et al., (2014) studied relatively young secondary school students, (Mhlongo, et al., 2013) on the other hand, studied men aged 18-32 years old, and while

(Sudhinaraset, et al., 2012) studied young migrants aged 15-24 years in Shanghai, China. The current study used cross-sectional data from the demographic health survey with a representative sample of males and females aged 15-24 years. The cross-sectional nature of the data therefore had some limitations which may affect the results. For instance, not everyone who reported condom use during the survey actually uses one, but in the study I consider such a response to be true. Therefore in-depth qualitative study is required for further research into issues related to this. The results have indicated that the prevalence of non-use of condom was significantly higher among females aged 15-19 years than males of the same age group. Thus, the prevalence of non-use of condom increases with decreasing age. This characteristic has been reported by (Tarkang, 2015) who found that 39.8% of secondary school learners used condoms during their first sexual debut and the trend decreases with age. However, further analysis is needed to establish why non-use of condoms increases with decreasing age.

Furthermore, whether marriage is a protective or risk factor for non-use of condoms among males and females has been given considerable attention in the literature. Fedor, et al., (2015) reported less unprotected sex among never and previously married individuals than their currently married counterparts. Maharaj, et al., (2012) recommend high condom use among couples in a situation where one or both partners are infected with HIV. The results from the current study indicate that, the prevalence of non-use of condom was higher among married females, and lower among married males, compared with their never married counterparts. Moreover, married females in the rural areas were more likely not to use condoms, while married males in the rural areas were less likely not to use condoms, and married females in the urban areas were about 2.2 times more likely not to use a condom when compared with never married counterparts. A possible explanation for the observed differences by gender and residence could be due to the differences in socio-cultural practices across various regions of Malawi. Although premarital sexual activities are not supported in the study area, no major control has been put in place to limit extramarital sexual activities. In a recent study of renegotiating cultural practices in Malawi, (Banda, et al., 2015) found that traditional herbs which heal ailments are repurposed to symbolise sexual acts, and any modification in cultural practices does not necessarily indicate complete abandonment of tradition, rather it renegotiates cultural practices and meanings that are associated with specific rites. Moreover, introducing condoms into a marital home will signify mistrust of partner, thus married females are more likely not to use condoms than their never married counterparts. However, the negotiating power of married youths especially females, in sub-Saharan Africa regarding condom use is very low as most males will consider their female partners as being promiscuous and no longer in love with them if they suggest the use of condoms.

Moreover, most of the citizens have heard of sexually transmitted infections, aware of their modes of transmission, and the impact on health, but very few of them have used condoms. According to the study, almost everyone has heard of STIs (99.1% males and 99.5% females). The majority, (86.1%) females and 92% males believe that a healthy person can be infected with HIV/STIs. Most young people were aware that they could contract sexually transmitted infections, and their perceived susceptibility to this health problem lead them to taking the required action in order to prevent that health problem. The current study indicates that, despite the high awareness of the virus, and the protection provided by condoms, only 17.5% males and 92.6% females reported condom use. Condom use was therefore more common among females than males. A similar study by (Maharaj, et al., 2005) found among married or cohabiting couples in South Africa that, 15% men and 18% women were using condoms consistently. In another study, (Heffron, et al., 2012) found a higher rate of HIV-1 transmission from women to men of 2.61% among those who use hormonal contraception, and 1.51% among couples who did not use hormonal contraception. However, most males in the current study did not perceive themselves to be at risk of getting pregnant or infected with STIs, and as such did not use condoms during the last sexual debut (82.5%), meanwhile most females perceived themselves to be at risk of infections, and 92.6% used condoms during the last sexual debut. In a recent study, (Kann, et al., 2012) found that, decreasing the prevalence of behaviour that contributes to HIV infection among young people will help reduce the number of infected persons. The current study indicates that, most males who reported condom use were not educated (87.3%), while most females who were not educated (97%) did not use condoms. Education was statistically significant in the study. In a similar study, (Baker, et al., 2011) found that, individuals with 12 years of education are twice as likely to use a condom as uneducated individuals, and they are less likely to be infected with HIV and other STIs than those with less education who are less likely to use condoms.

Moreover, individual's self-efficacy toward an infection will determine whether an individual controls his or her sexual life, in order to avoid sexually transmitted infections by consistently using condoms. The study findings therefore indicate that, most females (95.4%) did not use condoms consistently, while most males (95.1%) reported consistent condom use. In a recent study, (Garcia, et al., 2014) found that during most anal sexual encounters, men who have sex with other men

(MSM), 44.9% do not use condoms, and that they are less likely to report condom use with long-term partners than with casual ones. Moreover, there was self-efficacy that a woman can decide whether to have sex with her husband or not, especially if she knows her husband had sex with other females. The current study found that, 77.5% males reported that women are justified to refuse sexual intercourse with her husband if she knows her husband had sex with other females. Moreover, 90.3% males and 81.6% females had that self-efficacy of asking her partner to use a condom if she knows that her partner has HIV/RTIs/STIs. Black, et al., (2011) found a strong positive relationship between condom use self-efficacy and condom use, and weaker decision making self-confidence among adolescents. However, the decision making approach often moderates the effect of condom use self-efficacy on condom use. In another study, (Boone, et al., 2015) found that, self-efficacy to discuss safe sex with one's partner and the self-efficacy to refuse unsafe sex were related to unprotected vaginal and anal intercourse. Similarly, (Chariyeva, et al., 2013) in studying the role of self-efficacy to explain the effect of motivational interviewing time on changes in risky sexual behaviour found that, motivational interviewing time and number of provided sessions increase with a decrease in sexual risk behaviour. However, self-efficacy mediates the impact of motivational interviewing time and number of sessions. Young people need to believe that the efficacy of the advised action to reduce the risk of a particular health condition is necessary in order to reduce the spread of a specific health condition such as RTIs/STIs. They need to believe that by taking a particular action, it will help prevent a problem from occurring.

The current study indicates that, approximately, seven in every 10 males and females are familiar with ways of avoiding the transmission of sexually transmitted infections, such as not having sex at all (about 77% males and 78.8% females), using a condom each time they have sex (about 75% males and 73% females), while about eight in every 10 of them are aware that having one sexual partner will reduce the risk of encountering sexually transmitted infections (86.2% males and 86.3% females). Thus, the perceived benefit of reducing the spread of RTIs/STIs among young people was to use condoms at all times, and to limit sexual intercourse to one partner or abstaining from sexual intercourse. In a recent study of sexually abstinent Chinese students, (Tung, et al., 2013) found that those who reported higher levels of self-efficacy and more perceived benefit were more likely to be in the contemplation stage of condom use than those in the pre-contemplation. In another study, (Limaye, et al., 2012) found perceived benefits of talking about condom use is an important factor that influences the intention to discuss it with partners in Malawi. Introducing abstinence education therefore indicates a significant effect on adolescent sexuality (Chin, et al., 2012). In another study of barriers of dissonance between the desire for secondary abstinence and continued sexual activity, (Bradley, et al., 2014) found among African – American adolescent females that barriers to partners' power imbalance was a contributing factor for individuals to remain abstinent. Thus, having the knowledge of sexually transmitted infections and not using the necessary prevention measures will have little or no effect on the spread of these infections.

Perceived barriers were evident as possible hindrances to engage in preventive behaviour, including factors like inconveniences, cost, and unpleasantness. It is only after a person realizes that they have the capacity to deal with these barriers, that they would be able to take the necessary actions. These barriers with respect to the current study were the misconceptions about RTIs/STIs transmission and use of contraceptives. The current study indicates that, 4.5% males and 7.2% females agree that STI could be transmitted by sharing food with infected persons, 8.3% males and 7.2% females agree that STIs could be transmitted by supernatural beings, 8.0% males and 13.9% females agree that a healthy person cannot be infected with STIs, while 21.9% males and 21.2% females agree that mosquitoes can transmit RTIs/STIs. Although these misconceptions were very low among young people in Malawi, it has been given considerable attention in the literature as a contributing factor toward non-use of contraceptives. In a recent study of access to contraceptives in Malawi, (Skiles, et al., 2015) found that, access to the services was an important predictor to its usage, with great disparity by residence. Those that want to space or limit birth in the urban area had more access to services than those with limited access. Similarly, (Haddad, et al., 2015) found among HIV-infected women in Lilongwe that, condom use was not consistent among couples because of partner's misconceptions about its usage. In another study, (Ankomah, et al., 2013) found that, the absence of support from the husband, and lack of spousal communication, perceived barriers of side effects, was a major reason for not using contraceptives. Similarly, (Dixon, et al., 2014; Nishtar, et al., 2013) found side effects, myths, lack of information about contraception, unmet needs of contraceptives, socio-cultural and religious factors, and difficulty accessing contraception, as perceived barriers to its use. In another study, (Nielsen, et al., 2012) found lack of communication about sexual issues, contraception being regarded as a taboo, cost and availability and an individual's unfavourable attitudes towards contraception, as a perceived barrier to contraceptive use.

Whether perceived condom attributes are a protective or risk factor, receive considerable attention in the literature. According to the study young people recognize the importance of using a condom. A high proportion has a positive perception of condom attributes, with about eight in ten (89.9%)

males and six in ten (64.4%) females agreeing that they could get condoms during sexual intercourse. About six in ten (62.6%) males and five in ten (59.4%) females agree that children be taught about condoms to prevent STIs. Despite the recognition of condom attributes, most young people do not use it. As evident in the study earlier, condom use is very low among youths in Malawi. Mhlongo, et al., (2013) also reported a lower rate of condom use of 43% among youth aged 18-23 years, and a recent study in China by (Sudhinaraset, et al., 2012) reported low prevalence of condom use of 32% at first sex in China among young migrants aged 15-24 years, with 63.6% among urban non-migrants, 83.1% of rural-to-urban migrants who reported not using a condom at first sex. In a similar study, (Rupali, et al., 2012) found that, there is a lack of self-efficacy among youths in Malawi to talk about issues related to sexual activities and sexual relationships among parents and children, partners and peers. Thus, parents believe that speaking to children about sex encourages sexual activities as they will go further to try what they heard from their parents. This is due to a lack of confidence and skills in how to talk about sex and relationships. In another study, (Chernick, et al., 2014) found that the primary barrier to contraceptive use was perceived health risks, such as the effects on menstruation, weight and future fertility, mistrust of contraceptives, uncertainty about the future of contraception, and the partner's desire for pregnancy and limited access to contraceptives. Furthermore, (Sedgh, et al., 2014) found that, infrequent sex and concerns regarding side effects, was a reason for not using contraceptives. The stigma regarding the use of contraceptives such as the condom, and having trust in partners is hindering young people from using contraceptives and this facilitates the spread of sexually transmitted infections. In another study in Swaziland, (Nxumalo, et al., 2014) found that cultural practices play a role in the transmission of HIV/AIDS and other sexually transmitted infections among high school learners. Cultural and religious affiliations therefore prevent some young people from using contraceptives and this facilitates the spread of sexually transmitted infections. Thus access to services that provide a range of methods of contraceptives from which to choose, and information and counselling to help women select and effectively use an appropriate method, can be critical in helping young people with unmet needs to overcome the obstacles of contraceptive use.

Accessibility to condoms was also given considerable attention in the study. The current study found that male respondents (89.8%) were more likely to have used a condom than females (64.4%). However, (Sayles et al., 2006) have argued that the ease with which boys can obtain condoms is likely to be a factor for their high self-efficacy for condoms. In another study, (Harkabus, et al., 2012) found that, adolescents with higher alcohol usage were associated with a lower likelihood of having access to condoms. Misconceptions was very low with (about 78.1%

males and about 79% females) being aware that sexually transmitted infections (STIs) cannot be transmitted by a mosquito bite, while 92 per cent males and 86.1% females were aware that a healthy person can have STIs. This indicates the level of awareness of STIs among youths in Malawi, but this still need to be transformed into action as the majority of them do not use condoms.

Condom has often been the major indicator when researchers conduct studies of sexuality and sexual behaviours, and it is not surprising given the emphasis on the prevention strategies for promoting it usage (Sweat, et al., 2012). A study among youths in Malawi found that about 20 per cent of 15-24 year old females were using either a male or female condom, while about 11 per cent males were using either a male or female condom the last time they had sex, and this extends even to higher-risk sexual encounters such as non-marital sexual activities and even with non-cohabitating partners (Rupali, et al., 2012). However, much emphasis has been made on limiting the spread of sexually transmitted infections especially HIV/AIDS and other sexually transmitted infections with the recommendation of condoms, since it has been proven that condoms are effective in preventing unwanted pregnancies and reducing the risk of RTIs/STIs if properly and consistently used. The government of Malawi was in support of the International Conference on Population and Development (ICPD) in Cairo because it was aimed at providing reproductive health services that ensure equal access to reproductive rights for individuals and couples. Condoms were provided to men who wish to take part in the prevention of STIs, and couples who need back-up methods, and also couples whose partners have more than one sexual partner, in order to reduce the spread of RTIs/STIs. This as a result helps in reducing the spread of STIs especially HIV/AIDS (Government of Malawi, 2001 cited in Agnes Chimbiri 2007). Moreover, in the HIV prevention strategies of the UNAIDS and the Malawian Government, it was emphasized that information and education, condoms, lubricants, sterile injection equipment, voluntary counselling and testing, and antiretroviral medicines be addressed in order to prevent the spread of RTIs/STIs to uninfected persons (UNAIDS 2013). Unfortunately these condoms are not being used accordingly, thus an in-depth qualitative study is needed in order to understand why these condoms are not being used since this research did not explore reasons why they are not being used.

The study has shown that, females were more likely to contract sexually transmitted infections than males of the same age group. In this study, a number of determinants of sexual behaviours were identified that may partially explain the female's increased risk of contracting STIs. Females were significantly more likely to report non-use of condoms, were among 15-19 years to initiate sexual activities early, and in the poorest wealth quintile were more likely to have more sexual partners than their male counterparts. Low socio-economic status of women and gender inequalities has been evident in driving the epidemic by creating the perceived barriers to access services, adverse cultural practices, gender based violence and poor bargaining power for condom use or faithfulness (Global Aids Response, 2012). Other surveys demonstrate a great disparity between knowledge of STI risks and sexual behaviour and despite the youth's awareness of the risk associated with unprotected sexual activities; they still do not use contraceptives (Hoffman, et al., 2006). The study indicates that, rural females in the northern region were significantly less likely to use a condom when compared with their male counterparts. It has been evident that most females, especially in the rural areas, have less control in relationships (Audrey, et al., 2004), and the situation worsens when young females are involved in relationships with older men, and where there is more economic benefit for the females. They often do not have much say, especially with condom negotiation (Hallman, 2004). This has been attributed to the large age differences common in most relationships, the presence of violence or coercion and economic incentives to participate in risky sexual activities. Thus, the level of risk in sexual activities has been higher among females than males (Okafor, et al., 2005). Other reasons for non-use of condoms has been attributed to the fact that partners do not trust each other, misconception of the fact that a condom can get stuck in a woman's vagina, the idea that sexual anxiety is heightened when one uses a condom, and the availability of condoms itself. However, males at times claim that they are 'too big' for a condom, thus using it as an opportunity not to use it; in fact, a condom can expand larger than a human hand (Aron, 2004). Others 'felt ***safe'*** and further claimed that they do not have one, thus using it as an opportunity not to use it.

The economic status of youths is believed to play an important role in the prevalence of non-use of condoms. According to the study, the prevalence of non-use of condoms was higher among females in the poorest quintile. Rob, (2009) found that the economic status (inability to afford condoms) contributes to the female's inability to negotiate condom use during sexual activities. In another study, (Oyediran, et al., 2011) found that economic status index and media exposure were associated with sexual experience and use of condoms. Moreover, (Davidoff-Gore, et al., 2011) found that, an individual's low economic status such as lower earned income, food insufficiency, and larger material transfers from partners is an important determinant of non-use of condoms. Elmes, et al., (2014) found in Zimbabwe that some clients are prepared to pay more in order to have unprotected sex with female sex workers. Sex workers from the poorest households are more likely to have sex without condoms in order to earn more money. However, (Alister, et al., 2004) indicated that relatively rich men have a higher rate of partner change because of their greater personal autonomy. As a result, poverty is increasingly placing young individuals at greater risk of RTIs/STIs, and this increases sexually risky behaviours, especially among females who engaged in transactional sex. Adolescents, especially females, need to be empowered to protect themselves against infections. Banda, et al., (2003) found in Lilongwe that poverty may cause a woman to succumb to unreasonable sexual demands made by males and boys. Mkolokosa, (2004) found that, poverty and outdated cultural practices have altered the dreams of young girls in Malawi, as they drop out of school to get married to older males. In another study, (Munthali, et al., 2014) reported that some clients promise to pay sex workers more money if they allow them to have sex without a condom, and considering their poor economic status, they succumb to the demands of their clients in order to get more money to make a living.

Furthermore, whether education was a protective or risk factor also receive considerable attention in the literature. According to the study, the prevalence of non-use of condom was 6.2 times higher among females with no education, about 4.2 times higher among those with primary education, and about three times higher among those with secondary education than those with higher education. Huneeus, et al., (2014) found mixed findings - learners who complete primary education in public schools were more likely not to use condoms at sexual debut than those who complete primary education in private schools. A similar finding was noted by, (Emmanuel, et al., 2001) who found that, the proportion of respondents who had ever used condoms increased with educational level. Thus, the more education an individual achieves, the greater the chances of him/her using condom during sexual intercourse. However, the relationship of condom use and education is more than simply a function of increased knowledge that leads to positive health behaviour. Dalal, et al., (2014) found that victims of HIV and other STIs were in support of the fact that sexuality education be included into the school curriculum for uninfected persons to better understand the epidemic. Fang, et al., (2014) found that among Chinese males with HIV/RTIs/STIs, patients who were assigned to video group education about the effectiveness of education in changing sexual behaviour were more likely to delay sexual debut and more likely to use condoms during sexual debut. Thus, the type of educational institution is therefore influential in determining sexual behaviour, suggesting that sexual behaviour is influenced by the degree of freedom afforded to young people.

Religious background has been found to be associated with non-use of condoms among males and females in Malawi though less attention has been directed towards its association with sexual behaviour. Religion thus influences the sexual behaviour of an individual by determining whether an individual uses condom or not. Moreau, et al., (2013) found that sexually experienced adolescents who regularly practice religion were less likely to use any form of contraception. In another study, (Rakotoniana, et al., 2014) found that, church leaders and organizers could become key players in preventing the spread of HIV and other STIs if they improve their knowledge of the epidemic and extend their interactions with infected persons. Similarly, (Blignaut, et al., 2014) found that religion was an important indicator that influences sexual behaviour, and that religious organizations can play an important role in addressing HIV and other STIs risk at tertiary institutions. The current study indicates that, the prevalence of non-use of condoms was higher among Muslim females than those of other religions. Muslim females in the rural areas were more likely not to use condoms than those of other religions. Gray, (2004) found that HIV and other sexually transmitted infections were more common among Christians than Muslims due to male circumcision which is more common among Muslims than Christians. In another study, (Elia, et al., 2007) found that alcohol was a risk factor for HIV and other STIs, since alcohol consumption is prohibited by Islam but is permissible by Christianity, thus indicating why STIs may be more common among Christians than Muslims. Despite the fact that all faiths prohibit pre-marital and extra-marital sex, the emphasis in Islam indicates the degree of sanctions that may be meted against defaulters, compared to Christianity. Religion can influence the sexual behaviour of an individual and even those in partnerships within selected communities, and this will reduce infection rates on a national scale. However, acceptance of any interventions for STI odds greatly depends on the prevailing religious culture within the said community. According to the ***'Nyasa times' 2014*** Muslims are not in support of young unmarried people using condoms. They have argued that it fuels the spread of sexually transmitted infections. They suggest that, condoms should be used only for discordant couples and in situations where a mother breastfeeds for about two years.

6.2 Determinants of early sexual activities

Early sexual debut has been found to be associated with risky sexual behaviour among young people in Malawi, and has received attention in the literature. The study found that the prevalence of early sexual debut was higher among females than males. The actual age at sexual debut depends on the study. Some researchers consider 15 years, but the current study considers those who initiate sexual debut before reaching 16 years old. A study by (Peltzer, et al., 2010) found mixed results with 38.1% boys and 15.8% girls who experience sexual debut before the age of 15 years. Moreover, (Kim, et al., 2012) found in South Korea that low academic achievement, living with a step parent and perceived low level of household income were associated with early sexual debut. In another study, (Misiri, 2014) found in Malawi that those who initiate sexual activities earlier exhibit a constellation of risk factors for sexually transmitted infections, and are more likely not to use condoms at first sex, and to have had multiple and casual partners, thus, facilitating the spread of HIV and other RTIs/STIs. Alister, et al., (2004) found that traditional initiation ceremonies forced young people to initiate sexual debut at early ages as they are bound by the initiation rules to sleep with those initiating them in the course of the initiation. This facilitates the spread of sexually transmitted infections. The result from the current study indicates that, the prevalence of early sexual debut was higher among females aged 15-19 years. Augustine, et al., (2011) found that sexual motivation from friends and the influence of home videos was a contributing factor to early sexual debut among young people.

Education has been highly regarded as an important factor associated with early sexual debut among females in the literature. (Erkut, et al., 2012) found that, those who initiate sexual debut early are prone to poor sexual health outcomes, early family formation, poor economic security, incarceration and few middle school interventions. In another study, (McGrath, et al., 2009) found that education is a protective factor against early sexual activities, and that schooling had the effect of delaying sexual debut among South African youths. Similarly, (Audrey, et al., 2008) found that, South African girls are protected from the risk of HIV infection when they stay in school. More years of schooling are associated with a relatively late initiation of sex especially among females and it thus reduces premarital and recent sexual intercourse for females. Thus, girls with seven or more years of schooling initiate sex two years later than their counterparts with less than seven years of schooling. The current study indicates that, females with no education were more likely to engage in early sexual activities than those with higher education. Moreover, urban females with no education were about eight times more likely to initiate sexual activities earlier, while rural females were about 3.4 times more likely to initiate sexual activities early, and urban females with secondary education were about two times more likely to initiate sexual activities early. Thus, as school level attitudes to sex become favourable, young people tend to initiate sexual activities at a younger age, with more females than males. It has been evident that, the perception of maternal and peer approval of sexual activity are the most salient predictors of younger age of sexual initiation for males (White, et al., 2015). In Malawi, most primary and secondary schools are owned by the government and the majority of them are co-educational. Schools however provide an environment of socialization among boys and girls which at times leads to hetero-sexual contact which is early for the younger ones in school considering the fact that the recommended age for enrolling into standard one is five years. Early sexual debut has been reported to be the major cause of high dropout rate among youths based on teenage pregnancy in Malawian schools (Ngaiyaye, 2000). In order to address this problem, the government has integrated life skills, sexuality and reproductive health into the school curriculum within the senior primary levels and almost all secondary school forms in 2002. Recent assessment of the impact of the introduction of the new curriculum indicates positive significant changes in the rate of drop-outs from school on grounds of pregnancy after pupils were taught life skills and sexual reproductive health (Kalanda, 2010). This is an indication that education is an effective intervention in the control of sexual behaviour of Malawian youths. Sexual debut and HIV education is an effective method of delaying sexual debut within the sub-Saharan region as a whole. Further reports from Ghana and Malawi indicate that 'Girls in schools are more likely to want to avoid sexual intercourse in order to prevent pregnancy since pregnancy will indefinitely suspend and potentially end their schooling' (Ann, et al., 2007). Therefore, being in school may help young males and females from Malawi delay sexual debut since females will do everything possible to avoid sexual contact, hence boys will therefore have no one to have sex with.

Whether religion is a protective or risk factor for early sexual debut among males and females has been given considerable attention in the literature. (Fatusi, et al., 2008 & McGrath, et al., 2009) found that pressure from peers within the social network of the religious communities in Nigeria and South Africa may force individuals to engage in early sexual debut. In another study, (Coleman, et al., 2013), found that heterosexual messages were common among faith leaders, with high attitudes about sexuality and perceptions of religious messages about sex serving as a strong influence of sexual behaviour. Moreover, (Agardh, et al., 2011) found that, religion was an important determinant of sexual behaviour among university students in Uganda, with Protestant female students more likely to have more lifetime partners than their male counterparts. The current study found that, being a Muslim female predisposes young people to early sexual activities. However, the odds of engaging in early sexual debut among Muslim girls were higher than those in other religions. Thus, religious affiliation was significantly associated with age at first sex, and was identified as a predictor of age at first sex. Though this might vary between churches, the type of messages about sex and pressure from the various institutions and peer norms in delaying early sexual activities still remain unclear. It therefore remains clear that religious leaders are influential within religious communities and may be important partners in effecting changes within the community on issues related to sexual behaviour.

Moreover, findings from the study indicate that early sexual debut was higher among rural and urban males in the northern region, than those in the southern region. Within various regions in Malawi, different cultural practices are carried out especially among sexually active youths. Becker, et al., (2014) found a positive association of cultural practices with the likelihood of being sexually experienced, with males having a greater number of sexual partners. This facilitates the spread of sexually transmitted infections. In another study, (Mkandawire, et al., 2013) found that young men who are circumcised are more likely to experience their first sexual debut earlier than their uncircumcised counterparts. Differences in initiation rites in Malawi encourage young people to experiment sexual intercourse through the Kuchotsa fumbi (removing dust), and when they emerge from these rites, they behave like mad dogs hunting for women whom they can have sex with. During the initiation rites, they are not told of the importance of using condoms, and they become involved in unprotected sex. In the course of initiation, young girls are told to sleep with a man whom they describe as fisi (hyena) whose role is to initiate girls into sexual intercourse. This fisi can sleep with several females without using any protection, thus increasing the vulnerability of these females to STIs (Alister, et al., 2004). Moreover, these young girls, after initiation, believe that they are now mature enough to carry on sexual activities and as such they enter into this activity without knowledge of STIs. Early initiation therefore forced these young people into risky sexual practices, thereby increasing their chances of contracting HIV and other STIs.

The economic status of an individual has been given much attention in the literature as to whether it is a driver or a risk factor of sexual behaviour among youths in Malawi. Banda, (2005) found that females are more vulnerable to infections because of their poor economic background. Those who move to the urban areas in search of jobs only end up doing prostitution. In a recent study, (Pascoe, et al., 2015) found that, lower socio-economic position was associated with increased risk of depression and increased risk of risky sexual behaviour such as early sexual debut. In another study, (Dupere, et al., 2008) found that younger adolescent females who lived in poor neighbourhoods were more likely to report early sexual debut. However, (Odimegwu, et al., 2013) in his study, differs from the current study findings in that poverty was not found to a determinant of risky sexual behaviour. Nattrass, et al., (2012) found poverty and sexual behaviour to be an individual's risk in terms of gender. Poverty is therefore a contributing factor to early sexual activities, as individuals engage in these activities in order to fend for themselves. Our findings indicate that, respondents in the poorest households were less likely to initiate sexual activity early than those in the richest households, with the majority of those who initiate sexual activities much earlier in the richest quintiles. Those from the richest households are more exposed to activities that are sexually related. However, a rural-urban difference in sexual initiation is evident and portrays an interesting gender dimension. The odds of initiating sexual intercourse earlier was much higher among urban females than rural females, but higher among rural males than urban males aged 15-19 years. Alister, et al., (2004) found that, despite the fact that urban females start having sexual intercourse much earlier than their male counterparts, males initiate penetrative sex later than females in the rural areas. The great variation in gender in terms of sexual initiation between rural and urban areas has probably been a reflection of the differences in contextual and social factors that influences young people to engage in early sexual intercourse.

Moreover, ethnicity and other cultural practices were given considerable attention in the literature. Pflieger, et al., (2013) found that blacks and Hispanic women in the United States were most at risk for STIs in young adulthood. In another study, (Outlaw, et al., 2011) found that men who have sex with men (MSM) before the age of 16 years reported more exchanged sex, drug use such as marijuana and emotional problems such as substance use than those with later MSM sexual debuts. Similarly, (Carlson, et al., 2014) found that the sexual debut of black and Hispanic people varies from that of the whites, with most female-headed households being the main driver of this disparity. Moreover, (Jayakody, et al., 2011) found that black Caribbean, black African, white and mixed ethnic young men were most likely to report high risk sexual behaviours at the age of <=13 years. The results indicate that, rural males from the Chewa ethnic groups were more likely to initiate sexual activities early than those in other ethnic groups. However, different cultural backgrounds to sexuality in Malawi, and cultural traditions is said to govern most sexual attitudes of people, though some cultures may regulate their sexual behaviour. Similar results have been postulated by other researchers where-by human sexuality is regarded to have been shaped by cultural context and historical period (Traen, et al., 2007).

6.3 Determinants of multiple sexual partnerships

Multiple sexual relationships have been given considerable attention in the literature. This study has shown that, the prevalence of having multiple sexual partners was more common among females than males. The prevalence among men is lower than what other studies have reported. (Lopman, et al., 2008) reported MSP prevalence of 40% for males and 6% females, and a recent study by (Mavhu, et al., 2011) reported MSP prevalence of 37.1% for males and 7.3% for females. (Augustine, et al., 2011) emphasize that more attention be paid to the role of concurrent sexual partnerships when studying issues regarding the spread of RTIs/STIs. In another study, (Zuma, et al., 2014) found that adolescents aged 15-19 years old were more likely to report multiple sexual partners than those aged 20-24 years, thus increasing the risk for RTIs/STIs. Having multiple sexual partners therefore increases the odd of RTIs/STIs among young males and females.

Whether marriage was a protective or risk factor of multiple sexual partnerships (MSP) among males and females has received considerable attention in the literature. Kongnyuy, et al., (2006) reported lower MSP prevalence among unmarried men compared with formerly and married men in Cameroon. Chow, et al., (2013) reported that most of the never tested men who have sex with men (MSM) (80%) were never married compared to those who tested (62.2%) in the past 12 months in China. Powers, et al., (2011), reported that 86% Malawians reported 0 or 1 partners, while 5% reported multiple consecutive partnerships. In another study, (Uchudi, et al., 2012) showed mixed findings with a higher prevalence in Kenya, Lesotho and Swaziland but a lower prevalence in Mali, Niger, Senegal, Sierra Leone and Zambia. Moreover, (Chireshe & Chireshe 2011) found that marriages may not necessarily protect individuals from the risk of MSP. The results from the current study indicated that MSP prevalence was 5.7 times higher among married females and 1.5 times higher among males by gender, and approximately 6.1 times higher among rural females, and 4.2 times among urban females. The observed differences by gender and residence was statistically significant ($p<0.001$ by residence and $p<0.001$ and $p<0.01$ by gender). This could possibly be a result of differences in the socio-cultural practices across regions in the study area. Based on the result of the study, the odds of having more than one sexual partner were higher among females in the poorest quintile and 1.2 times higher for those in the poorer quintile. However, (Durevall, et al., 2012) reported mixed findings with a higher risk of HIV and other STIs among women in the middle and second richest wealth quintiles in Malawi. Van den Borne, (2005) describes the attitudes of young males and females toward sexuality as an 'effort to survive' in the face of poverty. Others have described it as a struggle against poverty, a quest for survival and consumerism as the driver for multiple sexual partnerships in Malawi (Wiseman, et al., 2009).

However, young males and females engage in multiple sexual partnerships because of dissatisfaction with their partner's sexuality, lack of communication and romance among partners, lack of skills in love making, and desire for variety in partners (Scott, et al 2011). Similarly, (Cox, et al., 2014) reported that dissatisfaction with stable relationships, financial dissatisfaction, emotional and sexual dissatisfaction was a contributing factor toward multiple sexual relationships in Tanzania. In another study, (Onoya, et al., 2014) found that having a history of STIs, being in short relationships and suspecting your current partner of infidelity, was a contributing factor towards multiple sexual relationships. Muchimba, et al., (2013) found that disinhibition behavior score (DBS) was associated with having multiple sexual partners among young adults in Malawi. However, people get involved in multiple sexual partnerships especially the females because they need to have insurance in case they lose their main sexual partner and some do so in order to find the right life partner (Alister, et al., 2004). Moreover, in partnerships where fidelity is lacking, some do so to take revenge for their partner's infidelity. In Malawi, couples have adopted a specific communication strategy so as to discourage any outside relationships, thus trying to stop accusing their partners of having outside relationships. Concurrent partnerships therefore lead to greater risk of RTIs/STIs than having the same number of sequential multiple partners because having concurrent sexual partners in a dense sexual network increases the risk of sexually transmitted infections, thus allowing the virus to spread rapidly (Ariane, et al., 2009).

In the southern region, certain religious beliefs allow individuals to have more than one sexual partner. The result obtained indicates that, young females from the northern region were 1.3 times more likely to have more sexual partners than those from the southern region. Wiseman found that within the Islamic communities of Machinga and the neighbouring districts, having more than one sexual partner is accepted by religion as long as the individual has enough resources to support more than one wife, and is in the position of loving all of them equally (Wiseman, et al., 2009). However, findings from the study indicate that married males and females were more likely to have more sexual partners than never married counterparts, with the rate much higher among females than males (5.7 vs 1.59). This is common probably because they have already secured a partner. This is however not common with never married counterparts especially the females, because having multiple sexual partners simultaneously lowers their chances of getting married. However, young people tend to engage in multiple sexual partnerships in order to have more chances in choosing who they will get marry as they grow up (Alister, et al., 2004).

6.4 Inconsistent condom use among males and females

The use of condoms among young people is determined by individual behaviour and social factors. However, perceived self-efficacy among young people is one of the factors that can influence an individual to either use a condom or not. This concept is derived from the social cognitive theory and it is a factor that could potentially lead to health-related behaviour (Bandura, 2004). Condom efficacy is therefore an individual's confidence in his or her ability to use a condom successfully during sexual intercourse (Black, et al., 2011). However, having these skills and being able to execute them into action under difficult conditions is another matter that is difficult for young people. Such efficacy therefore requires a reduction of risk and self-regulation of skills. This study has shown that inconsistent condom use was more common among females (95.4%) than males (4.9%), this facilitates the spread of RTIs/STIs, and is a major reason for female high vulnerability to infections. A similar study by (Mehra, et al., 2014) found among Ugandan students that 37.4% males and 49.2% females reported inconsistent condom use with a new sex partner. In another study (Wang, *et al.*, 2013) found in China that, 26.4% of HIV- infected adults inconsistently use condoms. However, (Ayoola, et al., 2014) reported mixed findings in Nigeria that 40.5% men who have sex with other men in the last 10 sexual encounters, use condoms consistently. In another study, (Matseke, et al., 2012) found that 63.5% of tuberculosis infected persons in South Africa do not use condoms consistently, with lower education level, high poverty, and partner's abuse of alcohol before sex, and being married as a contributing factor toward inconsistent condom use. Similarly, (Bukenya, et al., 2013) found early sexual debut before 14 years, sex work not being a profession, and continuous consumption of alcohol as a factor for inconsistent condom use among female sex workers in Uganda. Haddad, (2011) reported a higher rate of inadequate use of contraceptives and high unintended pregnancy due to partner's refusal of consistent condom use among women with HIV in Lilongwe. In another study of female sex workers in Ethiopia, (Mooney, et al., 2013) found that, work related violence was a contributing factor to unprotected sex among young people, thus facilitating the spread of sexually transmitted infections.

Wealth was also given considerable attention in the study as a contributing factor toward inconsistent condom use. Davidoff-Gore, et al., (2011) found that, lower income, food insufficiency and material transfer from partners was a determinant of inconsistent condom use. According to findings from the study, those from rich households were more likely to use condoms inconsistently. A possible explanation to this could be the fact that, rich people have greater partner change and autonomy in most relationships. As evident in the literature, having more sexual partners reduces the rate of condom use, thus facilitating the spread of STIs. Adebowale, et al., (2014) found a higher prevalence of condom use of 82.4% among Malawian women in the richest wealth quintile than (66.8%) those in the poorest quintile. In another study, (Morris, et al., 2014) found among adolescents with negative or unknown HIV status in the north west of Cameroon that majority (72%) of sexually active youths did not use condoms consistently. Kimani, et al., (2013) found in a slum settlement of Nairobi, Kenya that, the risk of STIs, especially HIV, was associated with married/divorced/widowed and being in the older age group, while (Paul, 2015) found that those with greater wealth inequality were more likely to have extramarital partners. In another study, (Durevall, et al., 2012) found no effect of individual's poverty level on inconsistent condom use. This was different from the current study findings. Moreover, cultural taboos when talking of sexually related issues among heterosexual men affect consistent use of condoms (Stutterheim, et al., 2013).

Moreover, religion was also given considerable attention in the literature whether it is a protective or risk factor for RTIs/STIs. According to the current study, Muslim females (OR=2.55) and other Christian (OR=1.39) were more likely to inconsistently use condoms. Religion is therefore an important determinant of risky sexual behaviour among young people. Agardh, et al., (2011) found among university students in Uganda that, Protestant female students were more likely to have more lifetime partners than their male counterparts. Considering that having multiple sexual partners reduces the rate of condom use, one can therefore concur that religion is a determinant of inconsistent condom use. In another study, (Agha, et al., 2006) found low levels of condom use among most religious groups in Zambia, with 20% Seventh Day Adventist, 19% Reformed Church of Zambia and 19% Jehovah Witnesses. Inconsistent condom use therefore facilitates the spread of RTIs/STIs among young people and offers little or no evidence of STIs reduction. In a study of men with non-marital partners in sub-Saharan African, (Reynold, et al., 2013) found in Swaziland and Zambia that single and non-cohabiting men who had one casual partner were less likely to use condoms consistently than married and cohabiting men.

From a general perspective, there is a lack of awareness of problems associated with STIs and their complications; also there is competition for resources in order to control other important health problems outside of the impact of RTIs/STIs, thus creating more opportunities for the virus to spread. Moreover, the reluctance of public health policy makers to deal with infections that are associated with sexual behaviour have also aided in the continued existence of this pandemic (Wafa, 2008). It is necessary that females should be aware of their vulnerability to sexually transmitted infections and the complications thereof, since from a biological perspective, they are more susceptible to infections because of the greater mucosal surface that is exposed to more pathogens during sexual intercourse (Brown, 2000). Some of the study findings did not concur with the emerging literature probably because of the cross-sectional nature of the data, and the sensitivity of some of the questions. However, a couple of limitations have been highlighted in the previous chapters, and qualitative study is therefore recommended for further investigation.

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CHAPTER VII

CONCLUSION AND RECOMMENDATIONS

Malawi is one of the countries that have high incidence rate of HIV/AIDS and other sexually transmitted infections, with the impact deeply felt among the productive age group especially young people aged 15-24 years. Despite government efforts in reducing the spread of these infections, most young people have not yet realize the impact of these infections on their health. As such they get involved in risky sexual behaviours at early ages, engage in multiple sexual relationships, and do not use condoms to protect themselves from HIV and other STIs. This facilitates the spread of these infections, thus exposing them to various diseases. This study therefore examines the determinants of youth sexual behaviours, while exploring the reasons why young people are engaged in risky sexual behaviours and their knowledge of RTIs/STIs.

Most young people in Malawi have heard of HIV/AIDS as the most dangerous and deadly form of RTIs/STIs. The survey data used for the study therefore indicate a perceived gab in the knowledge of other STIs besides HIV/AIDS among youth's. However, information provided by the survey data refer to the personal opinions of respondents, but the actual measure of their level of knowledge might be different. Thus, they are highly aware of STIs especially HIV/AIDS and this could serve as a way of avoiding further questioning. It is therefore recommended that more information be researched in order to know their level of knowledge of other sexually transmitted infections. Those who feel that they are well equipped with knowledge of sexually transmitted infections should still be informed of this epidemic. Moreover, individual's level of knowledge regarding RTIs/STIs should in time be conducted through formal estimations in order to make sure knowledge transpire to actions. All changes related to RTIs/STIs statistics as well as changes in the mutation of the virus should be updated for youths to be alert of current information surrounding STIs. Moreover, researchers presenting programmes that are related to youth's sexual education and other health related education should ensure that tiredness is not created, as this will cause carelessness towards the disease. Those providing programmes to educate youth's about sexual activities need to guard against the idea that knowledge will result in expected behaviours, otherwise the programme will be meaningless. In the implications of aspects related to the pandemic, it is recommended that it should be clearly explained to youths, and if possible a presentation should be made in order to create room for clarification of doubts.

However, awareness of the modes of transmission of these infections was very high among youths in Malawi. The mode of transmission seen within the parameters of the current study, and based on the contents of most information regarding the spread of sexually transmitted infections especially HIV/AIDS, the transmission of this pandemic may overshadow other modes of transmitting these infections. It is therefore recommended that, when introducing sexuality education to young people, emphasis should be paid on safer sexual practices, with much pertinent emphasis on the danger of using any substance that might facilitate the spread of these infections. For sexually transmitted infections such as the HIV/AIDS, it is recommended that the danger of using contaminated injections and needles be avoided as this will facilitate the spread of the virus. Young people need to be well informed of the danger of transmitting some of these infections through blood. It is further recommended that educating young people on sexual activities and health related issues about STIs should include practical information and exercises on assisting people who bleed with endangering oneself, by using surgical gloves and other fluid tight materials. This will help avoid contact with infected bloods from persons infected with these infections, thus reducing the spread of the infections.

Although much awareness was noticed among respondents, certain misconceptions were also observed with regards to the spread of these infections especially HIV/AIDS. These misconceptions are however serving as an alert to young people of possible means of transmitting these infections. Moreover, the benefits of such misconceptions could be overshadowed by the stigma that most young people have inaccurate knowledge regarding the prevention of these infections. It is therefore recommended that, in preparing sexuality education materials, specific information on ways that sexually transmitted infections cannot be transmitted should be clearly stated and emphasized so that young people can read and adhere to it. Furthermore, all possible sources of misconceptions that could possibly lead to stigmatization and discrimination against the transmission of these infections should be identified and clarified in all sexuality education tools. Irrespective of the low level of misconceptions among males and females, the introduction of these measures may reduce the level of misconceptions among young people regarding the transmission of these infections. Moreover, despite the high level of awareness of preventing the spread of these infections, most young males and females still do not use condom and those who make use of it do not use it consistently. This however creates more opportunity for the virus to spread and increases the risk of contracting STIs. Moreover, the perceived benefits of condom use to prevent STIs might be interrupted by perceived barriers to condom use, especially the unnaturalness of the device. This might determine whether or not an individual would actually use a condom to prevent STIs. It is therefore, recommended that programmes related to sexuality should stress on the relevance of correct and consistent use of condoms especially during casual relationships or when one is not certain about his status or his partners own status. Moreover, considering the fact that negotiating skills for condom use is very low, it is recommended that skills be practised through role play sessions during most sexuality education.

There is high knowledge that those who engage in unprotected sex can transmit RTIs/STIs as evident from the number of respondents who reported knowledge of STIs. However, most males and females do not really see themselves as being at risk of contracting sexually transmitted infections, since majority of them are not aware of their status. This facilitates the spread of these infections keeping the health of the population at risk. However, Malawians youths have a high knowledge regarding the value of condoms, and could get one for the prevention of STIs, but that knowledge has not yet been translated into practice as consistent use of condom remains very low especially among females than males. Very few of them have actually used it and this suggests that the rate of infections is very high among youths in Malawi. It is therefore recommended that young males and females be educated on the relevance of contraceptives in preventing the spread of these infections. Condom therefore needs to be consistently and rightly used especially by sexually active males and females in order to prevent unwanted pregnancies and the spread of STIs. Efforts need to be made among all public and private sectors in order to address the relevance of condom among sexually active youths, and areas of condom procurements, distributions and dispensing need to work together in order to put the knowledge of condom into practice. Clinicians need to dedicate some time for educating young people on how to use a condom, as this will help reduce some misconceptions among young people regarding the use of condom.

Most young people in Malawi are aware of sexual behaviours that put them at risk of contracting sexually transmitted infections, such as early sexual initiation, unprotected sexual intercourse, and multiple sexual partnerships. However, most females engaged in early sexual initiation, and this serves as an indication that they need to be informed about measures on how to prevent infections and be encouraged to consistently use condom especially the females because of their vulnerability. They need to be informed on suggesting condom use with their partners, and avoid being forced into sexual matters. In a society where females are voiceless in sexual related issues and sex is regarded as the ultimate experience among human, and being exploited by television and media especially music videos, exert immerse pressure on youths to become sexually active. Moreover, being aware of the risk factors alone might not be enough to protect these youth's from infections, but individual's perceived benefits towards these infections. It is this belief that gives a person that confidence to take the action because of the expected outcomes as explained by the Health Belief Model (HBM). It is therefore recommended that more research be conducted in order to know an effective age at which young people can start attaining sexuality education out of the family or household milieu. Besides, education regarding sexuality of youths both males and females should be made with some self-concepts that will support youths to say 'no' to unwanted sexual advances, an also facilities where individuals can report unwanted sexual advances be provided. At all levels of youth's development, life skill training need to be part of their sexuality education, with respect and appreciation between males and females should be part of their sexuality programme. In order to avoid the media exposing information of sexual activities to youths, it would be recommended that a concerted cooperative project be introduced.

Certain socio-economic and demographic variables used in the study could influence both males and females to come up with measures to avoid the risk of contracting RTIs/STIs. Variation in cultural practices within the regions in Malawi creates more opportunity for the virus to spread rapidly. Females who attend initiation rites often believe that the ceremonies signify their maturity, thus majority engage in sexual activities without proper knowledge of RTIs/STIs and its mode of transmission. They are more vulnerable to infections than males, and sexuality education should be organized in a way that favours a girl child most. It is therefore recommended that programmes towards the education of young people regarding sexuality should be done within various regions in Malawi including rural and urban areas. Traditional initiation ceremonies need to be discouraged within these regions since they fuel sexual activities.

Moreover, being married predispose one to take preventive measures against the spread of sexually transmitted infections because never married adolescent are repeatedly exposed to unprotected sex during youthful age which increases the risk of contracting STIs. Although majority of the respondents in the study were considered youths, those that were married were more likely to have more sexual partners. It is therefore recommended that policy programmes towards the control of STIs be extended to rural and remote areas since resident in such areas are more exposed to these infections. If possible strategies to encourage young males to avoid multiple sexual partnerships should be implemented. Irrespective of findings from other scholars, it is necessary that married respondents be given pertinent sexuality education regarding the consequences of having multiple sexual partners. They need to understand the principles of faithfulness and keep to single partner. It is therefore recommended that these principles be inculcated into programmes much earlier before young males and females get married.

The educational level of most respondents was very low with majority having primary education. Very few manage to higher levels, while majority never went to school (table 2). Achieving higher academic level has an influence on the number of sexual partner individual will have during his sexual life. Youths with more educational aspirations are more likely not to have more sexual partners as this will jeopardise their academics by unwanted pregnancies and STIs. It is therefore recommended that young people be assisted to achieve higher educational goals and aspirations, youth's self-concepts and self-images should be improved both intellectually, physically, psychologically and spiritually. In fact, they should be well educated and not merely learning of the impact of multiple sexual partnership on their education. The economic status of young people determines their sexual behaviours. Poverty is increasingly placing young males and females at greater risk of exposure to STIs, and this increases sexual risk behaviours especially among females who engaged in transactional sex. Those from poorest households tend to exchange sex for material goods in order to earn a living, and this facilitates the spread of sexually transmitted infections. It is therefore recommended that females and other young girls be empowered through organized programmes and campaigns related to sexuality education in order to protect themselves against infections. Programmes geared towards the reduction of STIs should also emphasize on empowering females economically and socially since economic deprivation and lack of basic necessities are some of the factors that might force young females to engage in risky sexual behaviours.

Moreover, certain cultural practices among various ethnic groups determine sexual behaviours of young people in Malawi. Older men through various cultural practices initiate young females into sexual activity (common in Tumbuka), and male relatives are forced to cleanse widows by having sex with them (common among the Sena in Nsanje) all help in spreading sexually transmitted infections. Fortunately, these practices were not common in Chewa, Ngoni and Yao ethnic groups, hence the odds of having more sexual partners was lower than those in other ethnic groups. It is therefore recommended that such cultural practices be discouraged in order to control the transmission of RTIs/STIs and organized programs towards youth's sexuality be introduced with the aim of discouraging those practices. Although the society of Malawi is not in support of premarital sex, findings from this study indicate that young males and females initiate sex at young ages. Poverty increases young people's susceptibility to sexual advances by older men. It is therefore recommended that sexuality education be introduced at the secondary level for young people to be educated on certain pertinent issues related to early sexual debut. Parents who encourage their young girl child to go for prostitution because of the poor economic status should be penalized for doing so since they are assisting in creating rooms for RTIs/STIs. For those young ones who feel that practice makes perfect, they should also be educated on the fact that practice can also be meant perfect at a much later age and even in their marital homes.

Moreover, within the urban areas, young people are exposed to activities that are sexually related, and the influence of pornographic materials, peer pressure, poverty, drug and alcohol abuse which force them to initiate sexual activity early. The variation in sexual initiation appears to be a reflection of differences in various traditional practices in socialization among young people in the regions of Malawi. For instance, in the southern region, most children are allowed to undergo initiation ceremonies where they are forced to sleep with the initiates without using any contraceptives. It is therefore recommended that such traditional ceremonies be discouraged especially in the rural areas in order to control the spread of sexually transmitted infections. For those who initiate sexual activity later, it is recommended that programmes organized to advice young people on the consequences of early sexual initiation should also reach them in order to keep them safe as a result thereof. Most females are at greater risk of STIs than males with respect to where they reside. It is therefore recommended that females be encouraged to study since education has been found to delay sexual initiation among young people. Years of schooling are associated with relatively late initiation of sexual activities and it reduces premarital and recent sexual intercourse for females. Females with seven or more years of schooling initiate sex two years later than their counterparts with less than seven years of schooling. This can be done by offering free education and bursaries to some of these young females in rural and urban areas to study. Thus, young males and females who are unlikely to succeed academically are most likely to have had an early sexual debut.

Furthermore, pressure from peers in poorest households force young females to initiate sexual activities early in order to fend for the family. Those in wealthy households and with better education have higher rates of partner change because of their greater personal autonomy and spatial mobility, and as such they initiate sexual activity earlier. It is therefore recommended that educating programmes on sexual activities be extended to poorest households in order to reduce peers pressure on young females, while those from richest households need to be educated on the consequences of initiating sexual activities earlier, and to recommend condom use for those who are not knowledgeable of condom use. Moreover, being able to read is associated with early sexual initiation. Depending on what individual males and females will read, exposure to pornographic materials such as posters, movies will accelerate young people's early initiation of sexual activity. It is therefore recommended that these young people be restricted on what to read and the consequences of reading materials that contain sexual activities. They need to be under strict control from their peers irrespective of their condition.

However, cultural ceremonies act as a factor of early sexual initiation, and when young people come out of initiation ceremonies they often behave like mad dogs hunting for women whom they can have sex with. While the ceremony is aimed at building characters of these young people, it also encourages them to initiate sexual activities earlier. Most males believe that after going through initiation rites they are certified to experiment sex since they are now considered adults. It is recommended that during the initiation ceremony young people should be told exactly how long they have to stay before initiating sexual activities. This should be introduced in the initiation rules for any one entering for initiation rites to be aware of it, and if possible the community should be informed of it during community rites. Moreover, the prevalence of non-use of condom was lower among respondents. The current age group in the study is more vulnerable to sexually transmitted infections and it is the age group that inexperience in sexual experimentation will lead to sexually transmitted infections. It is however recommended that young males and females be knowledgeable on issues related to condom use as early as possible, and when implementing sexuality education, it is recommended that the age group in need of such education be reached, and the relevance of condom use be included in school curriculum even at the secondary level. This will help reduce the level of ignorance, misconceptions, and will provide more knowledge on its importance.

Furthermore, the prevalence of non-use of condom is relatively low in the rural than urban areas and among females than males probably because most females tend to keep stable relationships longer than their male counterparts, secondly pressure from male partners and fear of introducing condom into relationships since it will indicate some level of mistrust among partners is a contributing factor for non-use of condom. It is therefore recommended that, females be justified to inform partner to use a condom if she realize that the other had unprotected sex with another woman. However, most males tend to use condom more than females during irregular relationships outside their own age range. The high prevalence of non-use of condom could be explained based on the fact that, awareness has not been established in certain regions in Malawi, and the stigma regarding its use. In order to ensure proper use of condom, knowledge of condom, awareness of its availability, decision on its use should be made universal within all regions of Malawi. Programmes geared towards rejection of certain misconceptions should be organized in order to cancel some of the myths behind condom use. The prevalence of non-use of condom was lower among Muslims females, probably because majority are not in support of condom use especially among young unmarried people, and they believe that it fuels the spread of sexually transmitted infections. It is therefore recommended that the relevance of condom be made known to every group of individuals irrespective of their religious background. Sexuality education programmes regarding condom use should not discriminate among young people in terms of religion. Individual's level of education has an influence on condom use. Young people who are more educated are more likely to use condom than those who are not educated. This is because they are aware that non-use of condom will result in unwanted pregnancies and sexually transmitted infections which will as a result affect their educational achievements. It is therefore recommended that young people be assisted to achieve higher educational goals and aspirations as this will encourage them to use contraceptives in order to avoid unwanted pregnancies and STIs. Moreover, youth self-concepts and self-images should be improved both intellectually, physically, psychologically and spiritually with regard to condom use.

The economic status of young people is a contributing factor to non-use of condom. Most rural population live in poverty and cannot afford to take care of themselves, let alone paying for a condom and they are more exposed to the risk of contracting sexually transmitted infections. Moreover, knowledge of condom, accessibility and its usage is very low among young people in the rural than urban areas. It is recommended that programmes organized towards condom use should target these rural communities, and condoms should be made free to every individual in the community. Lack of economic resources to meet the basic needs of young people is a contributing factor toward multiple sexual partnerships thus placing them at greater risk of contracting sexually transmitted infections. Policy programmes organized towards youth's sexuality should place more emphasis on youths from poor backgrounds since they are more infected than those from richest background. They need to participate in any developmental programmes within the community that is aimed at educating youths about their sexuality behaviours. This will discourage multiple sexual relationships among young females. Although findings from the study indicate that respondents were aware of certain issues related to the transmission and prevention of RTIs/STIs, there were many gaps in knowledge of other sexually transmitted infections besides HIV/AIDS. Moreover, irrespective of the high level of awareness of sexually transmitted infections among young males and females in Malawi, efforts still need to be made regarding the use of contraceptives in line with its safety, convenience and importance. However, individuals with perception of STIs could determine means of preventing it such as consistently using condom and it is believed that young males and females with their high awareness of STIs will more likely take measures towards the prevention of these infections. This will help reduce the spread of sexually transmitted infections among the young people in Malawi. However, females appear to be at higher risk of contracting sexually transmitted infections as far as this study findings are concerned when compared with their male counterparts. This is due to the variation observed in the literature within various cultural groups in Malawi. As such gender would have been an influence on individual's perception and ability to take preventive measures especially in society where gender inequality exists. Special efforts toward sexual activity education should be dedicated to females while they are still in school in order to reduce their vulnerability.

Moreover, health care service providers should educate young people on the impacts of STIs and on the importance of contraceptives in preventing the spread of this pandemic with more emphasis on females who are more vulnerable. The necessary education on RTIs/STIs should be introduced so as to encourage premarital screenings and thus help reduce the risk of spreading infections. Young males and females are at higher risk of transmitting STIs because of their risky sexual behaviour. Sexuality education needs to be made a statutory component of personal, social, and health education within schools and efforts need to be made in order to incorporate it into school curriculums. This will help educate youths to avoid early sexual debut and will also help educate them relevance of condom in sexual practices. Thus, being faithful to one uninfected partner, abstinence, consistent use of condoms and delaying sexual initiation will help curb the spread of these infections among young people in Malawi. They however need to be equipped with adequate information about sexually transmitted infections and contraceptive use in order to accurately avoid the risk of contracting these infections.

REFERENCES

Abhijeet A, Ray W. Shiraishi, Rebecca E. Bunnell (2009). Knowledge of HIV status, sexual risk behaviours and contraceptive need among people living with HIV in Kenya and Malawi, *AIDS*, 23: 1565-1573.

Adaora A. Adimora, Victor J. Schoenbach, and Irene A. Doherty (2007) Concurrent Sexual Partnerships among Men in the United State; *American Journal of Public Health*, 2230-2237.

Adebowale, S. A., Adedini, S. A., Ibisomi, L. D., & Palamuleni, M. E. (2014). Differential effect of wealth quintile on modern contraceptive use and fertility: evidence from Malawian women. *BMC Women's Health*, 14(1), 40.

Adimora, A. A., Schoenbach, V. J., Taylor, E. M., Khan, M. R., & Schwartz, R. J. (2011). Concurrent partnerships, non-monogamous partners, and substance use among women in the United States. *American Journal of Public Health*, 101(1), 128-136.

Advocates for Youth (2008). Adolescent Sexual and Reproductive Health in Sub-Sahara Africa. Available at: http://www.advocatesforyouth.org/ (Retrieved April 5, 2015).

Agardh, A., Tumwine, G., & Östergren, P. O. (2011).The impact of socio-demographic and religious factors upon sexual behavior among Ugandan university students. *PLos One*, 6(8), e23670.

Agha, S. Karlyn, A & Meekers, D (2001) The promotion of condom use in non-regular sexual partnerships in urban Mozambique, *Health Policy and Planning* 16(2): 144 – 151.

Agha, S., Hutchinson, P., & Kusanthan, T. (2006). The effects of religious affiliation on sexual initiation and condom use in Zambia. *Journal of Adolescent Health*, 38(5), 550-555.

Airhihenbuwa, CO & Obregon, R. (2000). A critical assessment of theories-models used in health communication for HIV/AIDS. *Journal of Health Communication*, 5:5-16.

Al- Ali, N & Haddad, LG (2002).The effect of the Health Belief Model in explaining exercise participation among Jordanian myocardial infarction patients. *Journal of Transcultural Nursing*, 15(2):114-121.

Alan Guttmacher Institute (AGI) (2000) Fulfilling the Promise: Public Policy and US Family Planning Clinics, New York.

Alister C. Munthali, Agnes Chimbiri & Eliya Zulu (2004) Adolescent sexual and reproductive health in Malawi: A Synthesis of Research Evidence. Occasional Report No 15. *Alan Guttmacher Institute.*

Amelia C Crampin, Judith R Glynn, Bagrey M. M, Ngwira, Frank D Mwaungulu, Jörg M Pönnighaus, David K, Warndorff & Paul E M Fine (2003). Trends and measurement of HIV prevalence in northern Malawi, *AIDS*, 17:1817-1825.

Amon E, Angelina M, Godfrey M, Khadija K, Godfrey M and Honorati M. (2011). Multiple sexual partners and condom use among 10-19 year-olds in four districts in Tanzania: What do we learn? *Public Health*, pp11:490.

Amuri, M., Mitchell, S., Cockcroft, A., & Andersson, N. (2011). Socio-economic status and HIV/AIDS stigma in Tanzania. *AIDS care*, 23(3), 378-382.

Ankomah, A., Anyanti, J., Adebayo, S., & Giwa, A. (2013). Barriers to Contraceptive Use among Married Young Adults in Nigeria: A Qualitative Study.

Ann M Moore, Kofi Awusabo-Asare, Nyovani Madise, Johannes John-Langba and Akwasi Kumi-Kyereme (2007). Coerced first sex among adolescent girls in sub-Saharan Africa: odds and context. *African Journal of Reproductive Health*, vol. 11, page 62-82.

Ariane McCabe, Andreas S., Aissatou D., Christopher H., & Annemarie B (2009) Private Sector Pharmaceutical Supply and Distribution Chains. Ghana, Mali and Malawi.

Aron, G. Buseh (2004). Patterns of Sexual behaviour among secondary school student in Swaziland, Southern Africa. *Taylor and Francis group*. Culture, Health & Sexuality Vol. 6, No.4 pp 355 – 367.

Asante, K. O., Boafo, I. M., & Nyamekye, M. (2014). Identifying Gender Differences in Ghanaian University Students' Sexual Practices, Attitudes and Knowledge Regarding HIV. *Journal* of *Psychology* 5: 9, 18.

Audinarayana, N. (2010). Sexual Behaviour and it's determinants among Young Never-Married Male Factory workers in a South Indian Knit City. *Journal of Population and Social Studies*, vol. 18 No. 2.

Audrey E. Pettifor, Diana M, Measham, Helen V. Rees, and Nancy S Padian (2004) Sexual Power and HIV Risk, South Africa, *International Conference on Women and Infectious Diseases*, Volume 10, No 11.

Audrey E. Pettifor, Helen V. Rees, Immo Kleinschmidt, Annie E. Steffenson, Catherine MacPhail, Lindiwe Hlongwa-Madikizela, Kerry Vermaak and Nancy S. Padian (2005). Young people's sexual health in South Africa: HIV odds and sexual behaviour from a nationally representative household survey. *AIDS* (19), 1525-1534.

Audrey E. Pettifor, Katie O'Brien, Catherine MacPhail, William C Miller and Helen V Rees (2009). Early Coital Debut and associated HIV Risk Factors among Young Female and Male in South Africa, *International Perspectives on Sexual and Reproductive Health*, 35(2), 82-90.

Augustine Ankomah, Fatima Mamman-D, Godpower O. Jennifer Anyanti (2011). Reasons for delaying or engaging in early sexual initiation among adolescents in Nigeria. *Adolescent Health, Medicine and Therapeutics* Vol 2, 75-84.

Ayoola, O. O., Sekoni, A. O., & Odeyemi, K. A. (2014). Transactional Sex, Condom and Lubricant use among Men who have Sex with Men in Lagos State, Nigeria. *African Journal of Reproductive Health,* 17(4), 90-98.

Baker, D. P., Leon, J., & Collins, J. M. (2011). Facts, attitudes, and health reasoning about HIV and AIDS: explaining the education effect on condom use among adults in sub-Saharan Africa. *AIDS and Behavior,* 15(7), 1319-1327.

Bakilana, A. (2005). Age at sexual debut in South Africa. *African Journal of AIDS Research*, 4(1), 1-5.

Banda & Charles (2003). Poverty enslaves young girls. *Africa news, news from Africa* 17 October, from http://www.newsfromafrica.org.

Banda C. (2005). Teen prostitution: Making ends meet in Malawi. Available from http://www.greatreporter.com/content/teen-prostitution-making-ends-meet.htm.

Banda, F., & Kunkeyani, T. E. (2015). Renegotiating cultural practices as a result of HIV in the eastern region of Malawi. *Culture, Health & Sexuality*, 17(1), 34-47.

Bandura, A. (2004). Health promotion by social cognitive means. *Health Education & Behavior,* 31(2), 143-164.

Barbara S., Mensch, Paul C., Hewett, Richard Gregory, and Stephane Helleringer (2008) Sexual Behavior and STI/HIV Status Among Adolescents in Rural Malawi: An Evaluation of the effect of Interview Mode on Reporting, Working paper No. 8, Poverty, Gender, and Youth Program, *Population Council*.

Beaujouan, É., & Ní Bhrolcháin, M. (2011). Cohabitation and marriage in Britain since the 1970s. *Population Trends*, 145, 35-59.

Becker, D., Thing, J. P., Baezconde-Garbanati, L., Schwartz, S. J., Soto, D. W., & Unger, J. B. (2014). Cultural Measures Associated with Sexual Risk Behaviours Among Latino Youth in Southern California: A Longitudinal Study. *Perspectives on Sexual and Reproductive Health*, 46(4), 193-201.

Beena Joshi, Sanjay Chauhan (2011). Determinants of youth sexual behaviour: programme implications for India. Department of Operational Research, *National Institute for Research in Reproductive Health*, J.M. Street, Parel.

Berendes, S., & Rimal, R. N. (2011). Addressing the slow uptake of HIV testing in Malawi: the role of stigma, self-efficacy, and knowledge in the Malawi BRIDGE Project. *Journal of the Association of Nurses in AIDS Care*, 22(3), 215-228.

Black, D. S., Sun, P., Rohrbach, L. A., & Sussman, S. (2011). Decision-making style and gender moderation of the self-efficacy–condom use link among adolescents and young adults: informing targeted STI/HIV prevention programs. *Archives of Pediatrics & Adolescent Medicine*, 165(4), 320-325.

Blignaut, R. J., Vergnani, T., & Jacobs, J. J. (2014). Correlates of sexual activity versus non-activity of incoming first-year students at a South African university. *African Journal of AIDS Research*, 13(1), 81-91.

Boone, M. R., Cherenack, E. M., & Wilson, P. A. (2015). Self-Efficacy for Sexual Risk Reduction and Partner HIV Status as Correlates of Sexual Risk Behavior Among HIV-Positive Adolescent Girls and Women. *AIDS Patient Care and STDs*.

Boyer, S., Eboko, F., Camara, M., Abé, C., Nguini, M. E. O., Koulla-Shiro, S., &Moatti, J. P. (2010). Scaling up access to antiretroviral treatment for HIV infection: the impact of decentralization of healthcare delivery in Cameroon. *AIDS*, 24, S5-S15.

Bradley, E. L., Elifson, K. W., Sales, J. M., & DiClemente, R. J. (2014). The Power of Partners: A Qualitative Study of the Dissonance between African-American Females' Interest in Practicing Secondary Abstinence and Continued Sexual Activity. *Health*, 2014.

Brook D.W., Morojele, N.K., Zhang, C. &Brook, J.S. (2006) South African Adolescents: Pathways to risky sexual behaviour. *AIDS Education and Prevention*, 18(3) 259 – 272.

Brookmeyer, K. (2014). Violence Exposure, STD and Sexual Health Risk Outcomes: A Nationally Representative Study from Kenya. In 2014 National STD Prevention Conference. CDC.

Brown, R.T (2000) Adolescent sexuality at the dawn of the 21st century, *Adolescent Medicine* 11(1): 19-34.

Bryan, A., kagee, A. & Broaddus, M.R. (2006)Condom Use among South African Adolescents/Developing and testing models of intentions and behaviour. *AIDS Behaviour*, 10, 387-397.

Bukenya, J., Vandepitte, J., Kwikiriza, M., Weiss, H. A., Hayes, R., &Grosskurth, H. (2013).Condom use among female sex workers in Uganda. *AIDS Care*, 25(6), 767-774.

Burns and Grove (2005).The practice of nursing research: conduct, critique and utilization; 5th edition. St Louis: *ELSEVIER*.

Buva A, Lagarde E, Carael M, Rutenberg N, Ferry B, Glynn J, (2001) Interpreting sexual behaviour data: validity issues in the multicentre study on factors determining the differential spread of HIV in four African cities. *AIDS 2001*, 15:S117-S126.

Byners, JP. (2001:50-51): Minds, Brains and Learning: Understanding the psychological and educational relevance of neuro-scientific research. New York: Guilford Press.

Cain, D., Pare, V., Kalichman, S. C., Harel, O., Mthembu, J., Carey, M. P., & Mwaba, K. (2012). HIV risks associated with patronizing alcohol serving establishments in South African Townships, Cape Town. *Prevention Science*, 13(6), 627-634.

Calazans G, Araujo TW, Venturi G, França Junior I (2005) Factors associated with condom use among youth. AIDS 2005; 19(Supl 4):S42-50.

Camlin, C. S., & Snow, R. C. (2008). Parental investment, club membership, and youth sexual risk behavior in Cape Town. *Health Education & Behavior*, 35(4), 522-540.

Campus (2005): Health Belief Model. University of Twente The Netherlands: TCW. From http://www.utwente.nl/cw/theorieenoverzicht/theory%20clusters/health%20communication/health_belief_model/.

Carlson, D. L., McNulty, T. L., Bellair, P. E., & Watts, S. (2014). Neighborhoods and racial/ethnic disparities in adolescent sexual risk behavior. *Journal of Youth and Adolescence*, 43(9), 1536-1549.

Centre for Disease Control (2004). Program operations Guidelines for STD prevention: Community and individual behaviour change interventions. From http://www.cdc.gov/std/programme.

Centres for Disease Control and Prevention (2012, February 8). Chlamydia-CDC Fact Sheet, Retrieved from http://www.cdc.gov/std/chlamydia/STDFact-Chlamydia.htm.

Chandra, A., Copen, C. E., & Mosher, W. D. (2013). Sexual behavior, sexual attraction, and sexual identity in the United States: Data from the 2006–2010 national survey of family growth.

In International handbook on the demography of sexuality (pp. 45-66). *Springer* Netherlands.

Chariyeva, Z., Golin, C. E., Earp, J. A., Maman, S., Suchindran, C., & Zimmer, C. (2013). The role of self-efficacy and motivation to explain the effect of motivational interviewing time on changes in risky sexual behavior among people living with HIV: a mediation analysis. *AIDS and Behavior*, 17(2), 813-823.

Chernick, L. S., Schnall, R., Higgins, T., Stockwell, M. S., Castaño, P. M., Santelli, J., & Dayan, P. S. (2014).Barriers to and enablers of contraceptive use among adolescent females and their interest in an emergency department based intervention. *Contraception*.

Cherry, A. L., Byers, L., & Dillon, M. (2009). A global perspective on teen pregnancy. In Maternal and child health (pp. 375-397). Springer US.

Chin, H. B., Sipe, T. A., Elder, R., Mercer, S. L., Chattopadhyay, S. K., Jacob, V., & Community Preventive Services Task Force. (2012). The effectiveness of group-based comprehensive risk-reduction and abstinence education interventions to prevent or reduce the risk of adolescent pregnancy, HIV, and STIs: two systematic reviews for the Guide to Community Preventive Services. *American Journal of Preventive Medicine*, 42(3), 272-294.

Chireshe, E., & Chireshe, R. (2011). Monogamous marriage in Zimbabwe: An insurance against HIV and AIDS? *Agenda*, 25(1), 93-101.

Chonzi E, (2000). Factors Contributing to low Utilization of Family Planning Services Among Secondary School Students in Zomba Municipality, Mzuzu; Malawi. University of Mzuzu.

Chow, E. P., Jing, J., Feng, Y., Min, D., Zhang, J., Wilson, D. P., & Zhang, L. (2013).Pattern of HIV testing and multiple sexual partnerships among men who have sex with men in China. *BMC Infectious Diseases*, 13(1), 549.

Christopher D. Pilcher, Hsiao Chuan Tien, Joseph J Eron, Pietro L. Vernazza, Szu-Yun Leu, Paul W. Stewart, Li-Ean Goh and Myron S. Cohen (2004). Brief but efficient: Acute HIV infection and the sexual transmission of HIV. *Journal of Infectious Diseases* 189(10), 1785-1792.

Christopher J. Carpenter (2010): A Meta-Analysis of the Effectiveness of Health Belief Model Variables in Predicting Behavior, *Health Communication*, Vol 25, Issue 8, Taylor & Francis.

Chronic care of HIV and non-communicable diseases – how to leverage the HIV experience. Geneva, UNAIDS, (2011) (http://www.unaids.org/en/resources/unaidspublications/2011, accessed 15 February, 2015).

Coleman, R. D. (2013). Religious Socialization: It's Impact on the Sexual Behavioral Development of Black Men who has Sex with Men in Emerging Adulthood (Doctoral dissertation, Emory University).

Colin Phelan and Julie Wren (2005) Exploring Reliability in Academic Assessment

Collins O, Airhihenbuwa, Rafael Obregon (2012). A Critical Assessment of Theories/Models used in Health Communication for HIV/AIDS. *Journal of Health Communications: International Perspectives*, Volume 2 Supplement 1.

Conserve, D., Sevilla, L., Younge, S., Mbwambo, J., & King, G. (2012). Condom use among HIV-positive sexually active adults and partner's HIV status in Dar es Salaam, Tanzania. *Journal of Health Care for the Poor and Underserved*, 23(1), 191

Cook P, Ali S and Munthali AC (2000).Starting from Strengths; Community Care for AIDS Orphans in Malawi, Centre for Social Research, Department of Psychology, University of Victoria, Canada.

Cortez, R., Saadat, S., Marinda, E., & Oluwole, O. (2015). Adolescent Sexual and Reproductive Health in Nigeria (No. 95029).The World Bank.

Cox, C. M., Babalola, S., Kennedy, C. E., Mbwambo, J., Likindikoki, S., & Kerrigan, D. (2014). Determinants of concurrent sexual partnerships within stable relationships: a qualitative study in Tanzania. *BMJ Open*, 4(2), e003680.

Dalal Koustuv, Shabnam Jahan, Wang Shu-Mei. (2014). Knowledge and perception of sexual health education and condom use among STI patients in India. *International STD Research & Reviews.* Jul-Dec; 2(2): 74-87.

Davidoff-Gore, A., Luke, N., &Wawire, S. (2011). Dimensions of poverty and inconsistent condom use among youth in urban Kenya. *AIDS Care*, 23(10), 1282-1290.

Davis, K. C., Masters, N. T., Eakins, D., Danube, C. L., George, W. H., Norris, J., & Heiman, J. R. (2014). Alcohol intoxication and condom use self-efficacy effects on women's condom use intentions. Addictive Behaviours, 39(1), 153-158.

De Beer, I. H., Gelderblom, H. C., Schellekens, O., Gaeb, E., Van Rooy, G., McNally, A., &Rinke de Wit, F. T. (2012). University students and HIV in Namibia: an HIV prevalence survey and a knowledge and attitude survey. *Journal of the International AIDS Society*, 15(1), 9.

De Cock, K. M., Mbori-Ngacha, D. and Marum, E (2002). Shadow on the continent: Public Health and HIV/AIDS in Africa in the 21st Century. *The Lancet*, Vol.360, page 67-72.

Dimbuene, Z. T., Emina, J. B., & Sankoh, O. (2014). UNAIDS ‘multiple sexual partners’ core indicator: promoting sexual networks to reduce potential biases. *Global Health Action*, 7.

Dixon, S. C., Herbert, D. L., Loxton, D., & Lucke, J. C. (2014). 'As many options as there are, there are just not enough for me': Contraceptive use and barriers to access among Australian women. *The European Journal of Contraception and Reproductive Health Care*, 19(5), 340-351.
Available: http://informahealthcare.com/doi/abs/10.3109/13625187.2014.919380

Doherty Irene A, Shiboski S, Ellen J, Adimora A, Padian N. (2006). Sexual bridging socially and overtime: A simulation model exploring the relative effects of mixing and concurrency on viral sexually transmitted infection. *Sexually Transmitted Diseases*, 33(6), 368-373.

Doku, D. (2012). Substance use and risky sexual behaviours among sexually experienced Ghanaian youth. *BMC Public Health*, 12(1), 571.

Dorina, Onoya, Khangelani Zuma, Nompumelelo Zungu, Olive Shisana, Vuyelwa Mehlomakhulu (2014). Determinants of Multiple sexual partnerships in South Africa 2014, *Journal of Public Health*, pp.1-10, [downloaded 5 February 2015].

Dunkle K, Jewkes R, Brown H, Gray G, McIntyre J & Harlow S (2004) Transactional sex among women in Soweto, South Africa: Prevalence, risk factors and association with HIV infection. *Social Science & Medicine*, 59(8), 1581-1592.

Dupere, V., Lacourse, E., Willms, J. D., Leventhal, T., & Tremblay, R. E. (2008). Neighborhood poverty and early transition to sexual activity in young adolescents: A developmental ecological approach. Child Development, 79(5), 1463-1476.

Durevall, D., & Lindskog, A. (2012). Economic inequality and HIV in Malawi. World Development, 40(7), 1435-1451.

Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J., & Wechsler, H. (2012). Youth risk behavior surveillance-United States, 2011. Morbidity and mortality weekly report. Surveillance summaries (Washington, DC: 2002), 61(4), 1-162.

Elia J Mmbanga, A Hussain, Germana H Leyna, Kagoma S Mnyika, Noel E Sam, Knut-Inge Klepp (2007) Odds and Risk factors for HIV-1 infection in rural Kilimanjaro region of Tanzania; Implications for prevention and treatment, *BMC Public Health* 7, 58.

Elmes, J., Nhongo, K., Ward, H., Hallett, T., Nyamukapa, C., White, P. J., & Gregson, S. (2014). The Price of Sex: Condom Use and the Determinants of the Price of Sex Among Female Sex Workers in Eastern Zimbabwe. *Journal of Infectious Diseases*, 210 (suppl 2), S569-S578.

Elvis T, (2009): Knowledge, Attitudes and Perceptions Regarding HIV/AIDS and sexual behaviour among senior secondary school learners in Kumba, Cameroon. University of South Africa.

Emmanuel Lagarde, Michel Carael, Judith R. Glynn (2001): Educational level is associated with condom use within non-spousal partnerships in four cities of sub-Saharan Africa. *AIDS Official Journal of the International AIDS Society*. Vol 15, No 11.

Erkut, S., Grossman, J. M., Frye, A. A., Ceder, I., Charmaraman, L., & Tracy, A. J. (2012). Can Sex Education Delay Early Sexual Debut? *The Journal of Early Adolescence*, 0272431612449386.

Esther S. Seloilwe (2005). Factors that influence the spread of HIV/AIDS among students of the University of Botswana, *Journal of the Association of Nurses in AIDS care*. Volume 16, number 3, page 3-10.

Eveline G and Cameron B (2006) Epidemiology of HIV/AIDS in adults in Malawi, Center for Reproductive Health, *Malawi Medical Journal*, Volume 18, issue 3, page 99-121.

Exavery, A., Kanté, A. M., Jackson, E., Noronha, J., Sikustahili, G., Tani, K., & Phillips, J. F. (2012). Role of condom negotiation on condom use among women of reproductive age in three districts in Tanzania. *BMC Public Health*, 12(1), 1097.

Exavery, A., Lutambi, A. M., Mubyazi, G. M., Kweka, K., Mbaruku, G., &Masanja, H. (2011). Multiple sexual partners and condom use among 10-19 year-olds in four districts in Tanzania: What do we learn? *BMC Public Health*, 11(1), 490.

Fang, K., Xue, L., & Han, Y. (2014).The effectiveness of education intervention in changing sex behavior and promoting condom use among male STDs patients in Shanghai. Chinese *Journal of Family Planning*, (1), 30-34.

Fatusi and Blum (2008): Predictors of early sexual initiation among a nationally representative sample of Nigerian adolescents. *BMC Public Health*, 2008; 8:136.

Fedor, T. M., Kohler, H. P., & Behrman, J. R. (2015). The Impact of Married Individuals Learning HIV Status in Malawi: Divorce, Number of Sexual Partners, and Condom Use with Spouses. *Demography*, 1-22.

Foster, V., Clark, P. C., Holstad, M. M., & Burgess, E. (2012). Factors associated with risky sexual behaviours in older adults. *Journal of the Association of Nurses in AIDS Care*, 23(6), 487-499.

Furlong, A. (2012). Youth studies: An introduction. Routledge, pp2-3 ISBN 978-0-415-56476-2.

Fylkesnes K, Musonda R, Sichone M, Ndhlovu Z, Tembo F, Monze M.(2001). Declining HIV prevalence and risk behaviours in ZAMBIA: Evidence from Surveillance and population based surveys. *AIDS* 2001, 15:907-916.

G. Anita Heeren, Andrew Mandeya, John B. Jemmott, Raymond T. Chiruka, Show Marange, Jesca M. Batidzirai, Arnold R. Gwaze, Joanne C. Tyler, and Janet Hsu (2014). Multiple Partners and Condom Use among Students at a South African University, *Journal of Evidence-Based Social Work*, 11:5, 437-444 (Accessed 5 February 2015).

García, M. C., Duong, Q. L., Mercer, L. C. E., Meyer, S. B., Koppenhaver, T., & Ward, P. R. (2014). Patterns and risk factors of inconsistent condom use among men who have sex with men in Viet Nam: Results from an Internet-based cross-sectional survey. *Global Public Health*, 9(10), 1225-1238.

Ghimire, L., Smith, W. C. S., van Teijlingen, E. R., Dahal, R., &Luitel, N. P. (2011). Reasons for non-use of condoms and self-efficacy among female sex workers: a qualitative study in Nepal. *BMC Women's Health*, 11(1), 42.

Glasier, A., Gülmezoglu, A. M., Schmid, G. P., Moreno, C. G., & Van Look, P. F. (2006). Sexual and reproductive health: a matter of life and death. The Lancet, 368(9547), 1595-1607.

Global Aids Response Progress report (2012): Malawi Country Report for 2010 and 2011.

Gloyd S, Chai S, Mercer MA (2001) Antenatal syphilis in sub-Saharan Africa: missed opportunities for mortality reduction. *Health Policy Plan* 2001; 16:29-34.

Gorbach, Pamina M, Drumright, Lydia N., Holmes, King K (2005) Discord, discordance, and concurrency: Comparing individual and partnership-level analysis of new partnerships of young adults at risk of STIs. *Sexually Transmitted Diseases* 32(1), 7-12.

Gouws, E. (2014). Trends in HIV prevalence and sexual behaviour among young people aged 15-24 years in countries most affected by HIV. *Sexually Transmitted Infections*, 86 (Suppl 2), ii72-ii83.

Government of Malawi, 2001 cited in Agnes M Chimbiri 2007: The condom is an intruder in Marriage: Evidence from rural Malawi, *ELSEVIER*, volume 64, Issue 5, pages 1102-1115.

Graham, M.E. (2002). Health Beliefs and self-breast examination in black female. *Journal of Cultural Diversity*, 9(2), 49 – 54.

Gray, P.B (2004). HIV and Islam: Is HIV odds lower among Muslims? *Social Science and Medicine* 58, 1751– 6.

Greenwood, J., Kircher, P., Santos, C., & Tertilt, M. (2013). An equilibrium model of the African HIV/AIDS epidemic (No. w18953). *National Bureau of Economic Research*.

Groenewold, G. Bruijn & Bils-Borrow, R. (2006). Migration of the Health Belief Model (HBM): effects of psychology and migrant network characteristics on emigration intentions on five countries in West Africa and the Mediterranean region. *Population Association of America*.

Guo, W., Wu, Z., Qiu, Y., Chen, G., & Zheng, X. (2012). The timing of sexual debut among Chinese youth. *International Perspectives on Sexual and Reproductive Health*, 196-204.

Guttmacher Institute. Facts on the Sexual and Reproductive Health of Adolescent Women in the Developing World. New York: Guttmacher Institute, 2010. http://www.guttmacher.org/pubs/FBAdolescents-SRH.pdf (accessed 8 April 2015).

Guzzo, K. B. (2014). New Partners, More Kids Multiple-Partner Fertility in the United States. The ANNALS of the American Academy of Political and Social Science, 654(1), 66-86.

Haddad, L. (2011). 2 Approval Sheet Family Planning for Women with HIV on Antiretroviral therapy in Lilongwe, Malawi.

Haddad, L. B., Feldacker, C., Jamieson, D. J., Tweya, H., Cwiak, C., Chaweza, T., & Phiri, S. (2015). Pregnancy Prevention and Condom Use Practices among HIV-Infected Women on Antiretroviral Therapy Seeking Family Planning in Lilongwe, Malawi. *PloS one*, 10(3), e0121039.

Hallman, K (2004). Socio-economic disadvantage and unsafe sexual behaviours among young women and men in South Africa, Working Paper no 190, Policy Research Division, *Population Council*.

Hanson, JA & Benedict, JA (2002:25). Use of the Health Belief Model to examine older adults' food handling behaviour. *Journal of Nutrition Education and Behaviour* 34(2):25-26.

Harkabus, L. C., Harman, J. J., & Puntenney, J. M (2012). Condom Accessibility The Moderating Effects of Alcohol Use and Erotophobia in the Information–Motivation–Behavioral Skills Model. *Health Promotion Practice*, 1524839912465420.

Heffron, R., Donnell, D., Rees, H., Celum, C., Mugo, N., Were, E., & Partners in Prevention HSV/HIV Transmission Study Team. (2012). Use of hormonal contraceptives and risk of HIV-1 transmission: a prospective cohort study. *The Lancet Infectious Diseases*, 12(1), 19-26.

Henshaw S & Feivelson D. (2000) Teenage abortion and pregnancy statistics by state, *Family Planning Perspectives*, 32(6):272-280.

Henshaw SK, (2001). US teenage pregnancy statistics: With comparative statistics for female aged 20-24, New York: AGI, 2001.

Hoffman S, O’Sullivan, LF Harrison, A Dolezal, C, Monroe-Wise, A (2006). HIV risk behaviours and context of sexual coercion in young adult’s sexual interactions: results from a diary study in rural South Africa. Sexually Transmitted Diseases 33:52-58.

House, W., & Zimalirana, G. (2014). Rapid Population Growth and its Implication for Malawi. *Malawi Medical Journal*, 8(2), 46-54.

Huang, Y., Abler, L., Pan, S., Henderson, G. E., Wang, X., Yao, X., & Parish, W. L. (2014). Population-based sexual behavior surveys in China: Liuzhou compared with other prefectural cities. *AIDS and Behavior*, 18(2), 118-125.

Huneeus A., Deardorff, J., Lahiff, M., & Guendelman, S. (2014). Type of primary education is associated with condom use at sexual debut among Chilean adolescents. *Sexually Transmitted Diseases,* 41(5), 306-311

Hutton, H. E., McCaul, M. E., Chander, G., Jenckes, M. W., Nollen, C., Sharp, V. L., & Erbelding, E. J. (2013). Alcohol use, anal sex, and other risky sexual behaviours among HIV-infected women and men. *AIDS and Behavior*, 17(5), 1694-1704.

Integrated health systems: what and why? Geneva, World Health Organization, 2008 (http://www.who.int/healthsystems/technical_brief_final.pdf, accessed 15 October 2011).

Inter press, (2014). Early sexual debut for young girls in Malawi contributes to country’s HIV odds. Kaiser Family Foundation.

Islam, N., & Laugen, C. (2015).Gender differences in depression and condom use among sexually active Canadians. *Journal of affective disorders*, 174, 511-515.

Jacqueline E. Darroch, Susheela Singh, Jennifer J. Frost (2001). Differences in Teenage pregnancy rates among five developed countries: The roles of sexual activity and contraceptive use. *Family Planning Perspectives*, Vol 33, No.6, pp244-250+281, *Guttmacher Institute*.

Janine L. Barden-O'Fallon (2004): Factors Associated with HIV/AIDS Knowledge and Risk Perception in Rural Malawi. *AIDS and Behaviour* Vol. 8, No. 2, June 2004.

Jayakody, A., Sinha, S., Tyler, K., Khadr, S. N., Clark, C., Klineberg, E., & Viner, R. M. (2011). Early sexual risk among black and minority ethnicity teenagers: a mixed methods study. *Journal of Adolescent Health*, 48(5), 499-506.

Jenkins RA, Manopaiboon C, Samuel AP, Jeeyapant S, Carey JW, Kilmarx PH, (2002). Condom use among vocational school students in Chiang Rai, *Thailand AIDS Edu Orev*, 14(3): 228-45.

Jennifer J. Frost, Rachel K. Jones, Vanessa Woog, Susheela Singh, Jacqueline E. Darroch (2001). Teenage Sexual and Reproductive Behaviour in Developed Countries report for the United States, ALAN Guttmacher Institute, New York & Washington.

Johnson, A. M., Mercer, C. H., Erens, B., Copas, A. J., McManus, S., Wellings, K., & Field, J. (2001). Sexual behaviour in Britain: partnerships, practices, and HIV risk behaviours. The *Lancet*, 358(9296), 1835-1842.

Joint United Nations Programme on HIV/AIDS (UNAIDS 2004); Report on the Global AIDS Epidemic; 4th Global Report, Geneva, Retrieved 15/08/2013 http://data.unaids.org/GlobalReports/Bangkok2004/unaidsbangkokpress/gar2004html/GAR2004_00_en.htm.

Joint United Nations Programme on HIV/AIDS (UNAIDS 2005); AIDS epidemic update: December 2005. Geneva, Retrieved, 10/10/2013 http://search.unaids.org/search.asp?lg=en&search=2004%20report%20on%20aids%20epidemic.

Joint United Nations Programme on HIV/AIDS (UNAIDS 2009): AIDS epidemic update. Retrieved 03/06/2014 http://www.unaids.org/sites/default/files/media_asset/jc1700_epi_update_2009_en_0.pdf.

Joint United Nations Programme on HIV/AIDS (UNAIDS 2010) Global Report on the AIDS Epidemic. Retrieved 10/06/2014 http://search.unaids.org/search.asp?lg=en&search=2010%20report%20on%20the%20global%20aids%20epidemic.

Joint United Nations Programme on HIV/AIDS (UNAIDS, 2012); Global Report on AIDS epidemic. Accessed; http://www.unaids.org/sites/default/files/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120_UNAIDS_Global_Report_2012_with_annexes_en.pdf

Joint United Nations Programme on HIV/AIDS (UNAIDS 2013). Available;http://www.unaids.org/sites/default/files/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/UNAIDS_Global_Report_2013_en.pdf

Jones, J., Mosher, W., & Daniels, K. (2012). Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995. *National Health Statistics Reports*, 60, 1-25.

Jørgensen, M. J., Maindal, H. T., Christensen, K. S., Olesen, F., & Andersen, B. (2015). Sexual behaviour among young Danes aged 15–29 years: a cross-sectional study of core indicators. *Sexually Transmitted Infections*, sextrans-2014.

Josina Z Machel (2001). Unsafe sexual behaviour among school girls in Mozambique: a matter of gender and class. *Reproductive Health Matters*, vol. 9, No. 17.

Juan A Galvez-Buccollini, Suzanne DeLea, Phabiola M Herrera, Robert H Gilman and Valerie Paz-Soldan (2009). Sexual behaviour and drug consumption among young adults in a shantytown in Lima, Peru, *BMC Public Health* 2009, 9:23.

Kachingwe SI, E Umar, P Mandalazi, D Jere, and Chizimba E (2001) Voluntary Counselling and confidential testing-Baseline study report, Lilongwe, Malawi, UNFPA 2001.

Kalanda, BF (2010). Life skills and reproductive health education changes behaviour in students and teachers: Evidence from Malawi. *Educational Research and Reviews* Vol 5 no.4, page 169-174.

Kaler, A (2004).The moral lens of population control: Condom and controversies in southern Malawi. *Studies in Family Planning* 35:105-115.

Kalichman SC, Ntseane D, Nthomang k, Mosarwa S, Odireleng Phorano, Leickness C Simbayi (2007): Recent multiple sexual partners and HIV transmission risks among people living with HIV/AIDS in Botswana. *Sexually Transmitted Infections*, 83: 371–5).

Kamndaya, M., Vearey, J., Thomas, L., Kabiru, C. W., & Kazembe, L. N. (2015). The role of material deprivation and consumerism in the decisions to engage in transactional sex among young people in the urban slums of Blantyre, Malawi. *Global Public Health*, (ahead-of-print), 1-14.

Kann, L., Lowry, R., Eaton, D., & Wechsler, H. (2012). Trends in HIV-related risk behaviours among high school students--United States, 1991-2011. MMWR. Morbidity and mortality weekly report, 61(29), 556-560.

Kelly, K & Parker, P (2000) Communities of practice: Contextual mediators of youth response to HIV/AIDS. Pretoria: Department of Health (Sentinel Site Monitoring and Evaluation Project for the Beyond Awareness Campaign).

Kigombola, A., Gotora, G. (2005). Knowledge, attitudes and practices on HIV/AIDS transmission and prevention in Rural Kisarawe DMSJ 14:48-51.

Killam, W. P., Tambatamba, B. C., Chintu, N., Rouse, D., Stringer, E., Bweupe, M., & Stringer, J. S. (2010). Antiretroviral therapy in antenatal care to increase treatment initiation in HIV-infected pregnant women: a stepped-wedge evaluation. *AIDS*, 24(1), 85-91.

Killarney, j., & Papini, D. R. (2013). Adolescent Pregnancy and Parenthood: Implications for Development. Life-Span Developmental Psychology: Non-normative Life Events, 69.

Kim, J., & Lee, J. E. (2012). Early sexual debut and condom non-use among adolescents in South Korea. *Sexual Health*, 9(5), 459-465.

Kimani, J. K., Ettarh, R., Ziraba, A. K., &Yatich, N. (2013). Marital status and risk of HIV infection in slum settlements of Nairobi, Kenya: results from a cross-sectional survey. *African Journal of Reproductive Health*, 17(1), 103-113.

Kimberly A Power, Irving F Hoffman, Azra C Ghani, Mina C Hosseinipour, Christopher D Pilcher, Mathew A Price, Audrey E Pettifor, David A Chilongozi, Francis E A Martinson, Myron S Cohen and William C Miller (2011). Sexual partnership patterns in Malawi: Implications for HIV/STI Transmission, *Sexually Transmitted Diseases*, 38(7): 657-666]

Kissinger, P. (2014, June). The Evolution of Partnerships and Condom Use Among Young African American Women. In 2014 National STD Prevention Conference. CDC.

Kofi Awusabo-Asare, Anne Biddlecom, Akwasi Kumi-Kyereme, Kate Paterson (2006). Adolescent sexual and reproductive health in Ghana: Results from the 2004 National Survey of Adolescents, *Reproductive Health Research*, Guttmacher Institute.

Kongnyuy, E. J., Wiysonge, C. S., Mbu, R. E., Nana, P., & Kouam, L. (2006). Wealth and sexual behaviour among men in Cameroon. *BMC International Health and Human Rights*, 6(1), 11.

Kunnuji, M. (2014). Basic deprivation and involvement in risky sexual behaviour among out-of-school young people in a Lagos slum. *Culture, Health & Sexuality*, 16(7), 727-740.

Lagarde E, Auvert B, Caraël M, Laourou M, Ferry B, Akam E, Sukwa T, Morison L, Maury B, Chege J, N'Doye I, Buve A (2001).Concurrent sexual partnerships and HIV prevalence in urban Communities of sub-Saharan Africa, *AIDs*, 15(7), 877-884.

Lam, C. B., & Lefkowitz, E. S. (2013). Risky sexual behaviours in emerging adults: Longitudinal changes and within-person variations. *Archives of Sexual Behavior*, 42(4), 523-532.

Leclerc-Madlala S (2003). Transactional sex and the pursuit of modernity, Social Dynamics, 29(2), 213-233.

Lesedi, C., Hoque, M. E., & Ntuli-Ngcobo, B. (2011). Youth's perception towards sexual and reproductive health services at Family Welfare Association centres in Botswana. *Journal of Social Science*, 28(2), 137-143.

Li, J., Li, S., Yan, H., Xu, D., Xiao, H., Cao, Y., & Mao, Z. (2014). Early Sex Initiation and Subsequent Unsafe Sexual Behaviours and Sex-Related Risks Among Female Undergraduates in Wuhan, China. Asia-Pacific *Journal of Public Health*, 1010539514549186

Liberty Eaton, Alan J. Flisher & Leif E Aaro, (2003) "Unsafe sexual behaviour in South African Youth" *Social Science and Medicine* 56:149-165.

Limaye, R. J., Rimal, R. N., Mkandawire, G., Roberts, P., Dothi, W., & Brown, J. (2012). Talking about sex in Malawi: toward a better understanding of interpersonal communication for HIV prevention. *Journal of Public Health Research*, 1(2), 117.

Linda Tawfik, Susan Cotts Watkins (2007). Sex in Geneva, Sex in Lilongwe, and Sex in Balaka. *Social Science and Medicine* 64 (2007) 1090-1101.

Liu, A., Kilmarx, P., Jenkins, R. A., Manopaiboon, C., Mock, P. A., Jeeyapunt, S., & van Griensven, F. (2006). Sexual initiation, substance use, and sexual behavior and knowledge among vocational students in northern Thailand. *International family Planning Perspectives*, 126-135.

Lopman, B., Nyamukapa, C., Mushati, P., Mupambireyi, Z., Mason, P., Garnett, G. P., & Gregson, S. (2008). HIV incidence in 3 years of follow-up of a Zimbabwe cohort—1998–2000 to 2001–03: contributions of proximate and underlying determinants to transmission. *International Journal of Epidemiology*, 37(1), 88-105

Luke N (2002) Confronting the sugar daddy stereotype: Age and economic asymmetries and risky sexual behavior in Urban Kenya. *International Family Planning Perspectives* 31(1), 6-14.

M. J. Maida, C. Costello Daly, I. Hoffman, M.S. Cohen, M Kumwenda & P.L. Vernazza (2001) Prevalence of Hepatitis C infection in Malawi and lack of association with sexually transmitted diseases, Lilongwe Central Hospital, *European Journal of Epidemiology*, 16: 1183-1184, 2000.

Macphail & Campbell (2001) 'I think condoms are good, but aai, I hate those thing'. Condom use among adolescents and young people in South Africa Township. *Social Science and Medicine* 52(1):1613 – 1627.

McGrath et al (2009). Age at first sex in rural South Africa. *Sexually Transmitted Infections*, Vol.85, pg i49-55.

Mah & Halperin (2008) Concurrent Sexual Partnerships and the HIV epidemic in Africa: Evidence to move forward. *AIDS and Behaviour*, EPUB July 22, 2008.

Mah, T. L., & Halperin, D. T. (2010). Concurrent sexual partnerships and the HIV epidemics in Africa: evidence to move forward. AIDS and Behavior, 14(1), 11-16.

Mah, T. L., & Maughan-Brown, B. (2013). Social and cultural contexts of concurrency in a township in Cape Town, South Africa. *Culture, Health & Sexuality*, 15(2), 135-147

Mahapatra, B., Lowndes, C. M., Mohanty, S. K., Gurav, K., Ramesh, B. M., Moses, S., & Alary, M. (2013). Factors associated with risky sexual practices among female sex workers in Karnataka, India. *PloS One*, 8(4), e62167

Maharaj, P. & Munthree, C (2007) Coerced first sexual intercourse and selected Reproductive Health outcomes Among Female in KwaZulu Natal, South Africa. *Journal of Biosocial Science*, 39, 231-244.

Maharaj, P. & Cleland, J (2004) Condom use within marital and cohabitating partnership in KwaZulu Natal, South Africa, *Study of Family Planning*, 35, 116-124

Maharaj, P., & Cleland, J. (2005). Risk perception and condom use among married or cohabiting couples in KwaZulu-Natal, South Africa. *International Family Planning Perspectives*, 24-29.

Maharaj, P., Neema, S., Cleland, J., Busza, J., & Shah, I. (2012). Condom use within marriage: an assessment of changes in South Africa and Uganda. *AIDS Care*, 24(4), 444-450.

Maida, M. J., Daly, C. C., Hoffman, I., Cohen, M. S., Kumwenda, M., & Vernazza, P. L. (2000). Prevalence of hepatitis C infection in Malawi and lack of association with sexually transmitted diseases. *European Journal of Epidemiology*, 16(12), 1183-1184.

Malik, K. (2013). Human development report 2013. The rise of the south: Human progress in a diverse world. (March 15, 2013). UNDP-HDRO Human Development Reports.

Maluwa-Banda D (2001). Baseline Survey Report on the sexual and reproductive health programme for out-of-school young people, Lilongwe, Malawi: Department of Youth, National Youth Council of Malawi and United Nations Population Fund (UNFPA).

Maluwa-Banda D and Lunguzi J, (2002) Baseline survey report on meeting development and participation rights of adolescent girls in Malawi, Lilongwe, Malawi; UNFPA.

Mandalazi, P., Banda, C., & Umar, E. (2013). Street children's vulnerability to HIV and sexually transmitted infections in Malawian cities. *Malawi Medical Journal*, 25(1), 1–4.

Manlove, J., Cook, E., Karpilow, Q., Thomas, A., & Fish, H. (2014). Male Involvement in Family Planning: The Estimated Influence of Improvements in.

Maria J. Wawer, Ronald H. Gray, Nelson K. Sewankambo, David Serwadda, Xianbin Li, Oliver Laeyendecker, (2005). Rates of HIV-1 Transmission per Coital Act, by Stage of HIV-1 Infection, in Rakai, Uganda, *Journal of Infectious Diseases* 2005; 191:1403-9.

Marisen, M (2014) Condom use in relation to the HIV/AIDS pandemic among adolescents: the case of some selected schools in Zomba, Malawi. Educational Research, Vol. 5(7) pp. 251-256, DOI: http:/dx.doi.org/10.14303/er.2014.115Available online@ http://www.interesjournals.org/ER

Matseke, G., Peltzer, K., Louw, J., Naidoo, P., Mchunu, G., &Tutshana, B. (2012). Inconsistent condom use among public primary care patients with tuberculosis in South Africa. *The Scientific World Journal*, 2012.

Matthew A Price, William C. Miller, Cornelia Kaydos-Daniels, Irving F. Hoffman, David Chilongozi, Francis E. Martinson, David N, Jimmy Malanda and Myron C (2004); Trichomoniasis in Men and HIV Infection: Data from 2 Outpatient Clinics at Lilongwe Central Hospital, Malawi. *The Journal of Infectious Diseases*, 190(8): 1448-1455

Mavhu, W., Langhaug, L., Pascoe, S., Dirawo, J., Hart, G., & Cowan, F. (2011). A novel tool to assess community norms and attitudes to multiple and concurrent sexual partnering in rural Zimbabwe: participatory attitudinal ranking. *AIDS Care*, 23(1), 52-59.

Mbah CJ (2003). Sexual behavior and the risks of HIV/AIDS and other STDs among young people in sub-Saharan Africa: A review. *Research Review* 2003: NS 19.1: 15-25.

Meekers, D Klein & Foyet (2001:8) Patterns of HIV risk behaviours and condom use among youth in Yaoundé and Douala, Cameroon. Working paper, Washington DC: Population Services International, No.46.

Mehra, D., Östergren, P. O., Ekman, B., & Agardh, A. (2014). Inconsistent condom use among Ugandan university students from a gender perspective: a cross-sectional study. *Global Health Action*, 7.

Mhlongo, S., Dietrich, J., Otwombe, K. N., Robertson, G., Coates, T. J., & Gray, G. (2013). Factors associated with not testing for HIV and consistent condom use among men in Soweto, South Africa. *PLoS One*, 8(5), e62637

Michelle, P. (2007). Sex, Money, and Premarital partnerships in Southern Malawi, Social Science & Medicine, University of Pennsylvania, Philadelphia, USA. Vol. 65, page 2383 - 2393

Michelle, R. (2008). Trends in teen sexual behaviour and condom use, components of statistics, Canada catalogue, *Health Reports*.

Mikhail, BI. (2001:162). Transcultural adaptation: Health Belief Model scales. *Journal of Nursing Scholarship* 33(2):159-165.

Mishra V, Hong R, Assche SB, Barrere B (2009b). The role of partner reduction and partner faithfulness in HIV prevention in sub-Saharan Africa: Evidence from Cameroon, Rwanda, Uganda and Zimbabwe. DHS working papers number 61. Calverton, Maryland: Macro International Inc.

Misiri, H. (2014). Risk factors of early sexual debut among men and women-a strong predictor of HIV and sexual risk in Malawi.

Mkandawire, P., Luginaah, I., Dixon, J., Armah, F., & Arku, G. (2013). Circumcision Status and Time to First Sex among Never-Married Young Men in Malawi: Evidence from the Demographic and Health Survey. *AIDS and Behavior*, 17(6), 2123-2135.

Mkandawire, P., Tenkorang, E., & Luginaah, I. N. (2013).Orphan status and time to first sex among adolescents in northern Malawi. *AIDS and Behavior*, 17(3), 939-950.

Mkolokosa (2004) Female, girls and HIV/AIDS: Making interventions to stop the sourge. The Nation, World AIDS Day Supplement.

Mooney, A., Kidanu, A., Bradley, H. M., Kumoji, E. K., Kennedy, C. E., & Kerrigan, D. (2013). Work-related violence and inconsistent condom use with non-paying partners among female sex workers in Adama City, Ethiopia. *BMC Public Health*, 13(1), 771.

Moore S (2005). Viral structure, replication, tropism, pathogenesis and natural history: HIV/AIDS in South Africa: Cambridge University Press.

Moreau, C., Trussell, J., & Bajos, N. (2013). Religiosity, religious affiliation, and patterns of sexual activity and contraceptive use in France. *The European Journal of Contraception and Reproductive Health Care*, 18(3), 168-180.

Morojele, N. K., Kachieng'a, M. A., Mokoko, E., Nkoko, M. A., Parry, C. D., Nkowane, A. M., & Saxena, S. (2006). Alcohol use and sexual behaviour among risky drinkers and bar and shebeen patrons in Gauteng province, South Africa. *Social Science & Medicine*, 62(1), 217-227.

Morris, L., Kouya, F., Kwalar, R., Pilapil, M., Saito, K., Palmer, N., & Jao, J. (2014). Factors associated with inconsistent condom use in adolescents with negative or unknown HIV status in Northwest Cameroon. *AIDS Care*, 26(11), 1440-1445.

Morris, M, Goodreau, S, and Moody, J (2007) Sexual networks, Concurrency, and STD/HIV, Sexually Transmitted Diseases, New York, McGraw-Hill.

Msapato KM, KM Kumwenda, BZ Chirwa, AM Chalira, and CP Mzembe (2000). Study of knowledge and aspects of attitudes of school teenagers in Mzimba District about HIV/AIDS, Lilongwe Malawi.

Muchimba, M., Burton, M., Yeatman, S., Chilungo, A., Haberstick, B. C., Young, S. E., & McQueen, M. B. (2013). Behavioral Disinhibition and Sexual Risk Behavior among Adolescents and Young Adults in Malawi. *PLoS One,* 8(9), e73574.

Munthali A (2002). No end in sight: Evidence for continued transmission of HIV/AIDS in rural Malawi, paper presented at the annual ASA conference, Rhodes University, Grahams town, September 2002.

Mugo Fridah, W. (2011). Sampling in research.

Munthali, A. C., Mvula, P. M., & Maluwa-Banda, D. (2014). Knowledge, Attitudes and Practices about HIV Testing and Counselling Among Adolescent Girls in Some Selected Secondary Schools in Malawi. *African Journal of Reproductive Health*, 17(4), 60-68.

Mwangi, L. W. (2014). Factors influencing early sexual debut among 15-24 year old female youth in coast province, Kenya (Doctoral dissertation, University of Nairobi).

Narring F, Wydler H, Michaud PA (2000). First Sexual Intercourse and Contraception: a cross-sectional survey on the sexuality of 16-20 years old in Switzerland. Schweiz Med Wochenschr, 130(40):1389-98.

National AIDS Commission, National HIV/AIDS Policy: A call to renewed Action, Lilongwe, Malawi: National AIDS Commission, 2003.

National Family Planning Association of Malawi (2002) Preventing STI/HIV/AIDS Among Young People Aged 10-24, Lilongwe, Malawi.

National Institute of Statistics (NIS) and ORC Macro (2004): Cameroon Demographic and Health Survey 2004, Calverton Maryland USA: NIS and ORC Macro 2004.

National statistical office and ORC Macro, Malawi Demographic and Health Survey (2000), Zomba, Malawi and Calverton, MD, USA.

National statistical office and ORC Macro, Malawi Demographic and Health Survey (2010), Zomba, Malawi and Calverton, MD, USA.

National Youth Council of Malawi (NYCOM) (2000). Assessment of youth friendly health services in Blantyre, Lilongwe, Mchinji, Kasungu and Mzimba Districts, Lilongwe, Malawi.

Nattrass, N., Maughan-Brown, B., Seekings, J., & Whiteside, A. (2012). Poverty, sexual behaviour, gender and HIV infection among young black men and women in Cape Town, South Africa. *African Journal of AIDS Research*, 11(4), 307-317

Ngaiyaye, R. (2000). Sexuality and Reproductive Health Education for primary schools in Malawi: Baseline Report. Lilongwe, Malawi: Ministry of Education Sports and Culture.

Nielsen, K. K., Nielsen, S. M., Butler, R., & Lazarus, J. V. (2012). Key barriers to the use of modern contraceptives among women in Albania: a qualitative study. *Reproductive Health Matters*, 20(40), 158-165.

Nishtar, N. A., Sami, N., Alim, S., Pradhan, N., & Hasnain, F. U. (2013). Determinants of contraceptives use amongst youth: an exploratory study with family planning service providers in Karachi Pakistan. *Global Journal of Health Science*, 5(3), p1

Nnko S, Boerma JT, Urassa M, Mwaluko G, Zaba B (2004). Secretive females or swaggering males? An assessment of the quality of sexual partnership reporting in rural Tanzania, *Social Science Medicine*, volume59, page 299-310.

Nxumalo, K. N., Okeke, C. I. O., & Mammen, K. J. (2014). Cultural Beliefs and Practices towards HIV/AIDS amongst High School Learners in Swaziland. *Studies on Ethno-Medicine*, 8(2), 135-146.

Odimegwu, C., & Adedini, S. A. (2013). Do family structure and poverty affect sexual risk behaviours of undergraduate students in Nigeria? African *Journal of Reproductive Health*, 17(4).

Okafor I, Obi SN (2005). Sexual risk behaviour among undergraduate students in Enugu, Nigeria. *Journal of Obstetrics and Gynecology* 25: 592-595.

Olusheyi O Lawoyin and Ruth M Kanthula (2010). Factors that influence attitudes and sexual behaviour among constituency youth workers in Oshana Region, Namibia Oshana Health Regional Office, Oshakati, Namibia.

Omoighe, Omoro Faye; Castel, Amanda D.; and Bingenheimer, Jeffrey, (2011). "Factors Associated with Early Sexual Debut among Ghanaian Women from the Manya – Krobo District, – Ghana," GW Research Days 2013. Paper 3.

Onega, LL (2000). Educational theories, models, and principles applied to community and public health nursing, 271-275.

Onoya, D., Zuma, K., Zungu, N., Shisana, O., & Mehlomakhulu, V. (2014). Determinants of multiple sexual partnerships in South Africa. *Journal of Public Health*, fdu010.

Outlaw, A. Y., Phillips, G., Hightow-Weidman, L. B., Fields, S. D., Hidalgo, J., Halpern-Felsher, B., & Green-Jones, and The Young MSM of Color SPNS Initiative Study Group, M. (2011). Age of MSM sexual debut and risk factors: results from a multisite study of racial/ethnic minority YMSM living with HIV. *AIDS Patient Care and STDs*, 25(S1), S23-S29.

Oyediran, K. A., Feyisetan, O. I., & Akpan, T. (2011). Predictors of condom-use among young never-married males in Nigeria. *Journal of Health, Population and Nutrition*, 273-285.

Pascoe, S. J., Langhaug, L. F., Mavhu, W., Hargreaves, J., Jaffar, S., Hayes, R., & Cowan, F. M. (2015). Poverty, Food Insufficiency and HIV Infection and Sexual Behaviour among Young Rural Zimbabwean Women. *PLoS One*, 10(1), e0115290.

Paul, H B (2015). An Association between neighbourhood wealth inequality and HIV prevalence in sub-Saharan Africa. Journal of Biosocial Science, 47, pp 311-328 doi:10.1017/S0021932013000709

Peltzer (2001:39). Knowledge and Practice of condom use among first year students at the University of the North, South Africa. *Curationis* 24(1)53-57.

Peltzer, K. (2010). Early sexual debut and associated factors among in school adolescents in eight African countries. *Acta Paediatrica*, 99(8), 1242-1247.

Petersen, J. L., & Hyde, J. S. (2011). Gender differences in sexual attitudes and behaviors: A review of meta-analytic results and large datasets. *Journal of Sex Research*, 48(2-3), 149-165.

Pflieger, J. C., Cook, E. C., Niccolai, L. M., & Connell, C. M. (2013). Racial/ethnic differences in patterns of sexual risk behavior and rates of sexually transmitted infections among female young adults. *American Journal of Public Health*, 103(5), 903-909.

Pilgrim, N. A., Ahmed, S., Gray, R. H., Sekasanvu, J., Lutalo, T., Nalugoda, F., & Wawer, M. J. (2014). Family structure effects on early sexual debut among adolescent girls in Rakai, Uganda. *Vulnerable Children and Youth Studies*, 9(3), 193-205.

Powers, K. A., Hoffman, I. F., Ghani, A. C., Hosseinipour, M. C., Pilcher, C. D., Price, M. A., & Miller, W. C. (2011). Sexual partnership patterns in Malawi: implications for HIV/STI transmission. *Sexually Transmitted Diseases*, 38(7), 657.

Przybyla, S., Golin, C., Widman, L., Grodensky, C., Earp, J. A., & Suchindran, C. (2014). Examining the Role of Serostatus Disclosure on Unprotected Sex Among People Living with HIV. *AIDS Patient Care and STDs*, 28(12), 677-684.

Puja Seth, Gina M Wingood, Ralph J DiClemente, LaShun S Robinson (2011). Alcohol use as a Marker for Risky Sexual Behaviours and Biologically Confirmed Sexually Transmitted Infections Among Young Adult African-American Women's Health Issues, *ELSEVIER* Vol 21, Issue 2 page 130-135.

Quinn (2000).The principles and practice of nursing education; 4th edition Cheltenham: Nelson Thomas.

Rakotoniana, J. S., Jean de Dieu, M. R., & Barennes, H. (2014). Can Churches Play a Role in Combating the HIV/AIDS Epidemic? A Study of the Attitudes of Christian Religious Leaders in Madagascar. *PLoS One*, 9(5), e97131.

ReCAPP (2005:2). Resource Centre for Adolescent Pregnancy Prevention Theories and approaches: *Health Belief Model.*

Reddy PA, Meyer-Weitz (2000) Determinants of condom use behaviour among STD clinic attendees in South Africa. *International Journal of STD and AIDS* 11(8):521-30.

Rehman T, K McKemey, C Garforth, R Huggins, CM Yates, RJ Cook, RB Tranter, JR Park and Dorward (2003) Theory of Reasoned Action and its Integration with Economic modelling in Linking farmers' attitudes and adoption behavior – an illustration from the Analysis of the uptake of livestock technologies in the south west of England. International farm management Congress, The University of Reading, England.

Reynolds, H. W., Luseno, W. K., & Speizer, I. S. (2013). Consistent condom use among men with non-marital partners in four sub-Saharan African countries. *AIDS care*, 25(5), 592-600.

Rob Stephenson (2009). Community Influences on young people's sexual behaviour in 3 African countries, *American Journal of Public Health*, 2009, 99(1): 102-109.

Roberts, R., Sanders, T., Myers, E., & Smith, D. (2010). Participation in sex work: students' views. *Sex Education*, 10(2), 145-156.

Rostosky S S, Regnerus MD, Wright MLC (2003) Coital debut: the role of religiosity and sex attitudes in the add health survey. *Journal Sexual Response*, 40(4):358-67.

Rowland, D. L., Adamski, B. A., Neal, C. J., Myers, A. L., & Burnett, A. L. (2015). Self-efficacy as a relevant construct in understanding sexual response and dysfunction. *Journal of Sex & Marital Therapy*, 41(1), 60-71.

Rupali J Limaye, Rimal RN, Mkandawire G, Roberts P, Dothi W and Brown J (2012) Talking about sex in Malawi; toward a better understanding of interpersonal communication for HIV prevention, Vol 1 no 17 page 93. *Journal of Public Health Research* 1(2): 117-125.

Rutstein SO, Shah IH (2004). In fecundity, infertility, and childlessness in developing countries DHS Comparative Reports No 9 Calverton, MD: ORC Macro and Geneva: World Health Organization, 2004.

Sabageh, A. O., Fatusi, A. O., Sabageh, D., & Babatunde, O. A. (2014). Condom use: prevalence among rural and urban sexually active adolescents in Osun state, Nigeria. *Science*, 2(4), 270-274.

Sanders, J., Moreland, S., & Goliber, T. (2012). Conference Agenda.

Sayles, J. N., Pettifor, A Wong, MD MacPhail, C Lee, S.J & Hendriksen, E (2006). Factors associated with self-efficacy for condom use and sexual negotiation among South African youth. 43(2)

Schmid G. (2004) Economic and programmatic aspects of congenital syphilis prevention, Bull *World Health Organization* 2004; 82: 1-8

Sedgh, G., & Hussain, R. (2014). Reasons for contraceptive non-use among women having unmet need for contraception in developing countries. *Studies in Family Planning*, 45(2), 151-169.

Setswe, G., Ramlagan, S., Mbelle, N., Davids, A., Zungu, N., & Pezi, S. (2014). The Role of Parents and Peers in Young People Initiating Sexual Debut in South Africa. *Journal of Health Behavior and Public Health*, 4(1), 1-8.

Sharma, Meera and Mufune, P (2011) Parental Guidance and Children Sexual Behaviour in Namibia: A Case Study in Windhoek. *African Journal of Education and Technology*, volume 1 number 1 page 75-89.

Sheng L, Cao WK (2008). HIV/AIDS epidemiology and prevention in China, *Chin Med J* (Engl) 121(13): 1230-1236.

Shiraz University of Medicine Sciences, Shiraz, Iran (2009) from www.sums.ac.ir Situation. *Journal of Experimental Social Psychology*, 5: 400-416.

Shisana, O., Rehle, T., Simbayi, L. C., Zuma, K., Jooste, S., Zungu, N., & Ramlagan, S. (2014). South African national HIV prevalence, incidence and behaviour survey, 2012. Cape Town. *Human Sciences Research Council (HSRC) Press*, 2014:1-153

Skiles, M. P., Cunningham, M., Inglis, A., Wilkes, B., Hatch, B., Bock, A., & Barden-O'Fallon, J. (2015). The Effect of Access to Contraceptive Services on Injectable Use and Demand for Family Planning in Malawi. *International Perspectives on Sexual and Reproductive Health*, 41(1), 20-30.

Stöckl, H., Kalra, N., Jacobi, J., & Watts, C. (2013). Is Early Sexual Debut a Risk Factor for HIV Infection Among Women in Sub-Saharan Africa? A Systematic Review. *American Journal of Reproductive Immunology*, 69(s1), 27-40.

Stutterheim, S. E., Bertens, M. G., Mevissen, F. E., & Schaalma, H. P. (2013). Factors contributing to inconsistent condom use among heterosexual men in Curacao. Culture, *Health & Sexuality*, 15(4), 420-433.

Sudhinaraset, M., Astone, N., & Blum, R. W. (2012). Migration and unprotected sex in Shanghai, China: correlates of condom use and contraceptive consistency across migrant and non-migrant youth. *Journal of Adolescent Health*, 50(3), S68-S74.

Sweat, M. D., Denison, J., Kennedy, C., Tedrow, V., & O'Reilly, K. (2012). Effects of condom social marketing on condom use in developing countries: a systematic review and meta-analysis, 1990-2010. *Bulletin of the World Health Organization*, 90(8), 613-622A.

Tarkang, E. E. (2015). Sexual risk behaviours of high school female learners in Mbonge subdivision of rural Cameroon. *Pan African Medical Journal*, 20(49).

Tassiopoulos, K., Moscicki, A. B., Mellins, C., Kacanek, D., Malee, K., Allison, S., & Seage, G. R. (2013). Sexual risk behavior among youth with perinatal HIV infection in the United States: predictors and implications for intervention development. *Clinical infectious diseases*, 56(2), 283-290.

Tonya R. Thurman, Lisanne Brown, Linda Richter, Pranitha Maharaji, Robert Magnani (2006). Sexual risk Behaviour among South African Adolescents: Is Orphans Status a Factor? *AIDS Behaviour*, 10, 627-635.

Torpey, K., Kabaso, M., Kasonde, P., Dirks, R., Bweupe, M., Thompson, C., & Mukadi, Y. D. (2010). Increasing the uptake of prevention of mother-to-child transmission of HIV services in a resource-limited setting. *BMC Health Services Research*, 10(1), 29.

Traen and Samuelsen (2007). Sweat 16 and never been kissed? Experience from a longitudinal Norwegian study Electronic, *Journal of Human Sexuality*, volume 10, April 2, 2007, 2007:10

Trafimow, D. and Finaly, K. A. (2002). The prediction of attitudes from beliefs and evaluations: the logic of double negative. *British Journal of Social Psychology* 41:77-86.

Tung, W. C., Hu, J., Efird, J. T., Su, W., & Yu, L. (2013). HIV knowledge and condom intention among sexually abstinent Chinese students. *International Nursing Review*, 60(3), 366-373.

Uchudi, J., Magadi, M., & Mostazir, M. (2012). A multilevel analysis of the determinants of high-risk sexual behaviour in sub-Saharan Africa. *Journal of Biosocial Science*, 44(03), 289-311.

UNGASS. Malawi HIV and AIDS Monitoring and Evaluation Report: 2008–2009. Geneva, Switzerland: UNGASS, 2010.

United Nations Children Fund (UNICEF 2012); Statistics Report of Malawi. Retrieved 15/09/2014, from http://www.unicef.org/infobycountry/malawi_statistics.html

United Nations Joint Programme on HIV/AIDS (UNAIDS), Global Report: UNAIDS Report on the Global AIDS Epidemic: 2010, December 2010, ISBN 978-92-9173-871-7, available at: http://www.refworld.org/docid/4cfca9c62.html [accessed 7 April 2015]

Valerie A. Clarke, Hildegarde L, Amanda W, Michelle M (2000): Unrealistic Optimism and the Health Belief Model, *Journal of Behavioural Medicine*, Vol. 23, No. 4.

Valois, R. F., Zullig, K. J., Kammermann, S. K., & Kershner, S. (2013). Relationships between adolescent sexual risk behaviours and emotional self-efficacy. *American Journal of Sexuality Education*, 8(1-2), 36-55.

Van den Borne (2005). Trying to Survive in times of Poverty and Aids: Female and Multiple Partner sex in Malawi Amsterdam: Het Spinhuis.

Varga, C. A. (2001). The forgotten 50%: A review of sexual and reproductive health research and programs focused on boys and young male in sub-Saharan Africa. *African journal of Reproductive Health* 5, 175-195.

Vera Paiva, Gabriela C., Gustavo Venturi Rita Dias (2008). Age and condom use at first sexual intercourse of Brazilian adolescents. *Rev Saude Publica* 2008; 42.

Victor M, Stephen J. Rogerson, Jesse J. Kwiek, Paul E. Wilson, Danny M, Malcolm E. Molyneux, Deborah D. Kamwendo (2006). Maternal syphilis infection is associated with increased risk of mother-to-child transmission of HIV in Malawi. *AIDS 2006*, 20:1869-1877.

Vinod Mishra, Simona Bignami-Van Assche (2009). Concurrent sexual partnership and HIV infection: Evidence from National Population-Based surveys, (UNAIDS). Macro-International Inc; Calverton Maryland, USA.

Vundule, C., Maforah, F., Jordaan, E. & Jewkes, R (2001)Relationship dynamics and teenage pregnancy in South Africa, *Social Science & Medicine*, 52(5), 733-744.

Wafa M. Fageeh (2008).Awareness of Sexually Transmitted Diseases among Adolescents in Saudi Arabia, King Abdulaziz University Jeddah, Saudi Arabia Vol. 15, No 1, pg 77-90.

Wang, X. B., Tucker, J. D., Yang, L., Zheng, H., Zhang, F., Cohen, M. S., & Cai, W. (2013). Unsafe sex and STI prevalence among HIV-infected adults in Guangzhou, China: Opportunities to deamplify sexual HIV transmission. *AIDS and Behavior*, 17(3), 1137-1143.

Weinstock H, Berman S, Cates Jr W (2004) Sexually transmitted diseases among America youth: incidence and prevalence estimates, 2000. Perspective Sexual Reproductive Health 2004; 36: 6-10.

Wellings K, (2001). Sexual behaviour in Britain: Early heterosexual experience, *Lancet*, Vol 358, 1843-1850.

White, C. N., & Warner, L. A. (2015). Influence of Family and School-Level Factors on Age of Sexual Initiation. *Journal of Adolescent Health*, 56(2), 231-237

Wildsmith, E., Manlove, J., & Steward-Streng, N. (2015). Relationship Characteristics and Contraceptive Use Among Dating and Cohabiting Young Adult Couples. *Perspectives on Sexual and Reproductive Health*. Vol 47(1):27–36]

Wirtz, A. L., Schwartz, S., Ketende, S., Anato, S., Nadedjo, F. D., Ouedraogo, H. G., & Baral, S. (2015). Sexual violence, condom negotiation, and condom use in the context of sex work: results from two West African countries. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 68, S171-S179.

Wiseman C & Steven C. (2009) Multiple and Concurrent Sexual Partnerships in Malawi A formative Qualitative Study. The Summit Consulting Group.

Wojcicki J M (2002) “She drank his money”: Survival Sex and the Problem of violence in taverns in Gauteng Province, *South Africa. Medical Anthropology*, 101, 1277-1284.

World Health Organization (2001) Global odds and incidence of selected curable sexually transmitted infections overview and estimates Geneva.

World Health Organization (2007) Management of sexually transmitted infections using syndromic management approach Guidelines to service providers, Ministry of Health, Malawi National Aids Commission

World Health Organization 2006: AIDS Epidemic Update, Retrieved 10/05/2014 Accessed http://www.who.int/hiv/pub/epidemiology/epiupdate2006/en/.

Yan, H., Chen, W., Wu, H., Bi, Y., Zhang, M., Li, S., & Braun, K. L. (2009). Multiple sex partner behavior in female undergraduate students in China: A multi-campus survey. *BMC Public Health*, 9(1), 305

Yingying, H., Smith, K., & Suiming, P. (2011). Changes and correlates in multiple sexual partnerships among Chinese adult women–population-based surveys in 2000 and 2006. *AIDS Care*, 23(sup1), 96-104.

Yode, M., & LeGrand, T. (2012). Association between age at first sexual relation and some indicators of sexual behaviour among adolescents: original research paper. *African Journal of Reproductive Health*, 16(2), 173-188.

Zhou D (2010). Determinants of risky sexual behaviour among young adults of South Africa. Wits Institutional Repository. Accessed http://mobile.wiredspace.wits.ac.za/handle/10539/10660

Zhu TF, Wang CH, Lin P, He N 2005: High risk populations and HIV-I infection in China, cell Res 2005, 15:852-857.

Zuma, K., Setswe, G., Ketye, Y., Mzolo, T., Rehle, T., & Mbelle, N. (2014). Age at sexual debut: a determinant of multiple partnerships among South African youth. *African Journal of Reproductive Health*, 14(2), 47-54.

Zou, H., Prestage, G., Fairley, C. K., Grulich, A. E., Garland, S. M., Hocking, J. S., ... & Chen, M. Y. (2014). Sexual behaviors and risk for sexually transmitted infections among teenage men who have sex with men. *Journal of Adolescent Health*, 55(2), 247-253.

APPENDICES

Female Respondents

Early sexual debut by background characteristics

```
LOGISTIC REGRESSION VARIABLES Age_firstintercourse
  /METHOD=ENTER V013 V025 V024 V106 V190 Lit_acy relig_ion marital_status
ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V025)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 13:10:05
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Early sexul activity.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	5199
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Age_firstintercourse /METHOD=ENTER V013 V025 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V025)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.37
	Elapsed Time	00:00:00.41

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	5199	100.0
	Missing Cases	0	.0
	Total	5199	100.0
Unselected Cases		0	.0
Total		5199	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
At or after 16 years	0
Before 16 years	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	(2)
ethnicity1	chewa	1509	1.000	.000
	Lomwe	879	.000	1.000
	ngoni	704	.000	.000
	tumbuka	551	.000	.000
	Yao	570	.000	.000
	other	986	.000	.000
Wealth index	Poorest	974	1.000	.000
	Poorer	987	.000	1.000
	Middle	1011	.000	.000
	Richer	1080	.000	.000
	Richest	1147	.000	.000
religion	other christian	1964	1.000	.000
	Catholic	1116	.000	1.000
	CCAP	937	.000	.000
	Muslim	599	.000	.000
	Other	583	.000	.000
Highest educational level	No education	180	1.000	.000
	Primary	3820	.000	1.000
	Secondary	1151	.000	.000
	Higher	48	.000	.000
Region	Northern	933	1.000	.000
	Central	1698	.000	1.000
	Southern	2568	.000	.000
Type of place of residence	Urban	756	1.000	
	Rural	4443	.000	
Literacy	Able to read whole sentence	4162	1.000	
	Cannot read/No card/Blind/Others	1037	.000	
Marital status	Married/living together	1281	1.000	
	Never married/widowed/not living together/divorced	3918	.000	
Age 5-year groups	15-19	3872	1.000	
	20-24	1327	.000	

Categorical Variables Codings

		Parameter coding		
		(3)	(4)	(5)
ethnicity1	chewa	.000	.000	.000
	Lomwe	.000	.000	.000
	ngoni	1.000	.000	.000
	tumbuka	.000	1.000	.000
	Yao	.000	.000	1.000
	other	.000	.000	.000
Wealth index	Poorest	.000	.000	
	Poorer	.000	.000	
	Middle	1.000	.000	
	Richer	.000	1.000	
	Richest	.000	.000	
religion	other christian	.000	.000	
	Catholic	.000	.000	
	CCAP	1.000	.000	
	Muslim	.000	1.000	
	Other	.000	.000	
Highest educational level	No education	.000		
	Primary	.000		
	Secondary	1.000		
	Higher	.000		
Region	Northern			
	Central			
	Southern			
Type of place of residence	Urban			
	Rural			
Literacy	Able to read whole sentence			
	Cannot read/No card/Blind/Others			
Marital status	Married/living together			
	Never married/widowed/not living together/divorced			
Age 5-year groups	15-19			
	20-24			

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Age at first intercourse – At or after 16 years	Predicted: Age at first intercourse – Before 16 years
Step 0	Age at first intercourse	At or after 16 years	3079	0
		Before 16 years	2138	0
	Overall Percentage			

Classification Table[a,b]

Observed			Predicted: Percentage Correct
Step 0	Age at first intercourse	At or after 16 years	100.0
		Before 16 years	.0
	Overall Percentage		59.0

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.365	.028	168.061	1	.000	.694

			Score	df	Sig.
Step 0	Variables	V013(1)	1138.573	1	.000
		V025(1)	15.532	1	.000
		V024	219.445	2	.000
		V024(1)	1.627	1	.202
		V024(2)	188.432	1	.000
		V106	217.484	3	.000
		V106(1)	85.911	1	.000
		V106(2)	56.902	1	.000
		V106(3)	126.953	1	.000
		V190	140.041	4	.000
		V190(1)	13.458	1	.000
		V190(2)	52.143	1	.000
		V190(3)	1.096	1	.295
		V190(4)	.069	1	.793
		Lit_acy(1)	160.336	1	.000
		relig_ion	294.958	4	.000
		relig_ion(1)	41.989	1	.000
		relig_ion(2)	43.295	1	.000
		relig_ion(3)	127.925	1	.000
		relig_ion(4)	151.247	1	.000
		marital_status(1)	2541.382	1	.000
		ethn_cit	260.049	5	.000
		ethn_cit(1)	152.802	1	.000
		ethn_cit(2)	24.135	1	.000
		ethn_cit(3)	.068	1	.795
		ethn_cit(4)	18.264	1	.000
		ethn_cit(5)	130.234	1	.000
	Overall Statistics		2694.987	22	.000

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	3367.336	22	.000
	Block	3367.336	22	.000
	Model	3367.336	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	3694.030[a]	.476	.641

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Observed			Predicted: Age at first intercourse — At or after 16 years	Predicted: Age at first intercourse — Before 16 years
Step 1	Age at first intercourse	At or after 16 years	3050	29
		Before 16 years	711	1427
	Overall Percentage			

Classification Table[a]

Observed			Predicted: Percentage Correct
Step 1	Age at first intercourse	At or after 16 years	99.1
		Before 16 years	66.7
	Overall Percentage		85.8

a. The cut value is .500

		B	S.E.	Wald	df	Sig.
Step 1[a]	V013(1)	-1.307	.116	126.076	1	.000
	V025(1)	-.027	.134	.040	1	.842
	V024			11.647	2	.003
	V024(1)	-.214	.194	1.217	1	.270
	V024(2)	-.408	.121	11.416	1	.001
	V106			13.246	3	.004
	V106(1)	1.329	.473	7.887	1	.005
	V106(2)	1.189	.398	8.945	1	.003
	V106(3)	.889	.389	5.218	1	.022
	V190			20.729	4	.000
	V190(1)	.553	.155	12.755	1	.000
	V190(2)	.462	.154	8.986	1	.003
	V190(3)	.124	.154	.651	1	.420
	V190(4)	.124	.146	.721	1	.396
	Lit_acy(1)	-.166	.120	1.929	1	.165
	relig_ion			12.387	4	.015
	relig_ion(1)	.130	.150	.755	1	.385
	relig_ion(2)	.021	.158	.018	1	.893
	relig_ion(3)	-.242	.169	2.046	1	.153
	relig_ion(4)	.425	.236	3.242	1	.072
	marital_status(1)	21.788	1059.465	.000	1	.984
	ethn_cit			35.454	5	.000
	ethn_cit(1)	-.501	.160	9.788	1	.002
	ethn_cit(2)	.027	.148	.034	1	.855
	ethn_cit(3)	.236	.165	2.040	1	.153
	ethn_cit(4)	-.454	.217	4.400	1	.036
	ethn_cit(5)	-.143	.230	.385	1	.535
	Constant	-1.087	.431	6.371	1	.012

Variables in the Equation

		Exp(B)	95% C.I.for EXP(B)	
			Lower	Upper
Step 1[a]	V013(1)	.271	.215	.340
	V025(1)	.974	.749	1.266
	V024			
	V024(1)	.807	.551	1.181
	V024(2)	.665	.525	.842
	V106			
	V106(1)	3.777	1.494	9.550
	V106(2)	3.285	1.507	7.163
	V106(3)	2.432	1.135	5.212
	V190			
	V190(1)	1.738	1.283	2.354
	V190(2)	1.588	1.174	2.149
	V190(3)	1.132	.838	1.530
	V190(4)	1.132	.851	1.505
	Lit_acy(1)	.847	.670	1.071
	relig_ion			
	relig_ion(1)	1.139	.849	1.528
	relig_ion(2)	1.022	.749	1.393
	relig_ion(3)	.785	.563	1.094
	relig_ion(4)	1.530	.963	2.431
	marital_status(1)	.544	.000	.
	ethn_cit			
	ethn_cit(1)	.606	.442	.829
	ethn_cit(2)	1.027	.769	1.373
	ethn_cit(3)	1.266	.916	1.750
	ethn_cit(4)	.635	.415	.971
	ethn_cit(5)	.867	.553	1.360
	Constant	.337		

a. Variable(s) entered on step 1: V013, V025, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

Early sexual debut by residence (Rural)

```
USE ALL.
COMPUTE filter_$=(V025 = 2).
VARIABLE LABELS filter_$ 'V025 = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Age_firstintercourse
  /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 13:13:10
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Early sexul activity.sav
	Active Dataset	DataSet1
	Filter	V025 = 2 (FILTER)
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	4443
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Age_firstintercourse /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.20
	Elapsed Time	00:00:00.21

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	4443	100.0
	Missing Cases	0	.0
	Total	4443	100.0
Unselected Cases		0	.0
Total		4443	100.0

Dependent Variable Encoding

Original Value	Internal Value
At or after 16 years	0
Before 16 years	1

a. If weight is in effect, see classification table for the total number of cases.

		Frequency	Parameter coding		
			(1)	(2)	(3)
ethnicity1	chewa	1347	1.000	.000	.000
	Lomwe	749	.000	1.000	.000
	ngoni	573	.000	.000	1.000
	tumbuka	457	.000	.000	.000
	Yao	484	.000	.000	.000
	other	833	.000	.000	.000
Wealth index	Poorest	952	1.000	.000	.000
	Poorer	958	.000	1.000	.000
	Middle	971	.000	.000	1.000
	Richer	969	.000	.000	.000
	Richest	593	.000	.000	.000
religion	other christian	1711	1.000	.000	.000
	Catholic	955	.000	1.000	.000
	CCAP	763	.000	.000	1.000
	Muslim	521	.000	.000	.000
	Other	493	.000	.000	.000
Highest educational level	No education	166	1.000	.000	.000
	Primary	3482	.000	1.000	.000
	Secondary	783	.000	.000	1.000
	Higher	12	.000	.000	.000
Region	Northern	791	1.000	.000	
	Central	1489	.000	1.000	
	Southern	2163	.000	.000	
Literacy	Able to read whole sentence	3488	1.000		
	Cannot read/No card/Blind/Others	955	.000		
Marital status	Married/living together	1136	1.000		
	Never married/widowed/not living together/divorced	3307	.000		
Age 5-year groups	15-19	3336	1.000		
	20-24	1107	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
ethnicity1	Chewa	.000	.000
	Lomwe	.000	.000
	Ngoni	.000	.000
	Tumbuka	1.000	.000
	Yao	.000	1.000
	other	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
religion	other christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Other	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/No card/Blind/Others		
Marital status	Married/living together		
	Never married/widowed/not living together/divorced		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Age at first intercourse: At or after 16 years	Predicted: Age at first intercourse: Before 16 years	
Step 0	Age at first intercourse	At or after 16 years	2410	0	
		Before 16 years	1768	0	
	Overall Percentage				

Classification Table[a,b]

Observed			Predicted: Percentage Correct
Step 0	Age at first intercourse	At or after 16 years	100.0
		Before 16 years	.0
	Overall Percentage		57.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.310	.031	97.915	1	.000	.734

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	1044.967	1	.000
		V024	283.716	2	.000
		V024(1)	2.915	1	.088
		V024(2)	238.012	1	.000
		V106	156.228	3	.000
		V106(1)	79.673	1	.000
		V106(2)	17.742	1	.000
		V106(3)	91.633	1	.000
		V190	84.150	4	.000
		V190(1)	8.625	1	.003
		V190(2)	33.822	1	.000
		V190(3)	.001	1	.970
		V190(4)	8.061	1	.005
		Lit_acy(1)	111.216	1	.000
		relig_ion	220.106	4	.000
		relig_ion(1)	18.755	1	.000
		relig_ion(2)	32.900	1	.000
		relig_ion(3)	91.613	1	.000
		relig_ion(4)	125.721	1	.000
		marital_status(1)	2020.508	1	.000
		ethn_cit	257.681	5	.000
		ethn_cit(1)	160.630	1	.000
		ethn_cit(2)	32.978	1	.000
		ethn_cit(3)	.019	1	.891
		ethn_cit(4)	11.734	1	.001
		ethn_cit(5)	123.152	1	.000
	Overall Statistics		2173.231	21	.000

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	2765.944	21	.000
	Block	2765.944	21	.000
	Model	2765.944	21	.000

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2926.178[a]	.484	.651

Observed			Predicted: Age at first intercourse — At or after 16 years	Predicted: Age at first intercourse — Before 16 years
Step 1	Age at first intercourse	At or after 16 years	2365	45
		Before 16 years	565	1202
	Overall Percentage			

Classification Table[a]

Observed			Predicted: Percentage Correct
Step 1	Age at first intercourse	At or after 16 years	98.1
		Before 16 years	68.0
	Overall Percentage		85.4

a. The cut value is .500

		B	S.E.	Wald	df	Sig.
Step 1[a]	V013(1)	-1.533	.135	128.233	1	.000
	V024			25.133	2	.000
	V024(1)	-.226	.226	1.007	1	.316
	V024(2)	-.738	.147	25.133	1	.000
	V106			9.433	3	.024
	V106(1)	.502	.719	.487	1	.485
	V106(2)	.309	.665	.216	1	.642
	V106(3)	-.101	.662	.023	1	.878
	V190			18.760	4	.001
	V190(1)	.460	.167	7.545	1	.006
	V190(2)	.319	.168	3.611	1	.057
	V190(3)	.008	.170	.002	1	.961
	V190(4)	-.053	.165	.103	1	.748
	Lit_acy(1)	-.180	.127	1.992	1	.158
	relig_ion			6.554	4	.161
	relig_ion(1)	.157	.177	.784	1	.376
	relig_ion(2)	.221	.186	1.408	1	.235
	relig_ion(3)	-.036	.198	.033	1	.856
	relig_ion(4)	.510	.271	3.538	1	.060
	marital_status(1)	21.660	1151.609	.000	1	.985
	ethn_cit			23.398	5	.000
	ethn_cit(1)	-.106	.191	.311	1	.577
	ethn_cit(2)	.308	.173	3.183	1	.074
	ethn_cit(3)	.569	.200	8.072	1	.004
	ethn_cit(4)	-.164	.248	.439	1	.508
	ethn_cit(5)	.202	.267	.570	1	.450
	Constant	-.142	.686	.043	1	.836

Variables in the Equation

		Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	V013(1)	.216	.165	.281
	V024			
	V024(1)	.797	.512	1.241
	V024(2)	.478	.358	.638
	V106			
	V106(1)	1.652	.403	6.765
	V106(2)	1.362	.370	5.016
	V106(3)	.904	.247	3.307
	V190			
	V190(1)	1.584	1.141	2.199
	V190(2)	1.375	.990	1.910
	V190(3)	1.008	.723	1.406
	V190(4)	.948	.687	1.309
	Lit_acy(1)	.835	.651	1.072
	relig_ion			
	relig_ion(1)	1.170	.827	1.655
	relig_ion(2)	1.247	.866	1.794
	relig_ion(3)	.965	.655	1.421
	relig_ion(4)	1.665	.979	2.833
	marital_status(1)	3.800	.000	.
	ethn_cit			
	ethn_cit(1)	.899	.618	1.307
	ethn_cit(2)	1.360	.970	1.908
	ethn_cit(3)	1.767	1.193	2.618
	ethn_cit(4)	.848	.522	1.380
	ethn_cit(5)	1.224	.725	2.066
	Constant	.868		

a. Variable(s) entered on step 1: V013, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

Early sexual debut by residence (Urban)

```
USE ALL.
COMPUTE filter_$=(V025 = 1).
VARIABLE LABELS filter_$ 'V025 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Age_firstintercourse
  /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 13:12:17
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Early sexul activity.sav
	Active Dataset	DataSet1
	Filter	V025 = 1 (FILTER)
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	756
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Age_firstintercourse /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.13
	Elapsed Time	00:00:00.13

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	756	100.0
	Missing Cases	0	.0
	Total	756	100.0
Unselected Cases		0	.0
Total		756	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
At or after 16 years	0
Before 16 years	1

		Frequency	Parameter coding		
			(1)	(2)	(3)
ethnicity1	Chewa	162	1.000	.000	.000
	Lomwe	130	.000	1.000	.000
	Ngoni	131	.000	.000	1.000
	Tumbuka	94	.000	.000	.000
	Yao	86	.000	.000	.000
	other	153	.000	.000	.000
Wealth index	Poorest	22	1.000	.000	.000
	Poorer	29	.000	1.000	.000
	Middle	40	.000	.000	1.000
	Richer	111	.000	.000	.000
	Richest	554	.000	.000	.000
religion	other christian	253	1.000	.000	.000
	Catholic	161	.000	1.000	.000
	CCAP	174	.000	.000	1.000
	Muslim	78	.000	.000	.000
	Other	90	.000	.000	.000
Highest educational level	No education	14	1.000	.000	.000
	Primary	338	.000	1.000	.000
	Secondary	368	.000	.000	1.000
	Higher	36	.000	.000	.000
Region	Northern	142	1.000	.000	
	Central	209	.000	1.000	
	Southern	405	.000	.000	
Literacy	Able to read whole sentence	674	1.000		
	Cannot read/No card/Blind/Others	82	.000		
Marital status	Married/living together	145	1.000		
	Never married/widowed/not living together/divorced	611	.000		
Age 5-year groups	15-19	536	1.000		
	20-24	220	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
ethnicity1	Chewa	.000	.000
	Lomwe	.000	.000
	Ngoni	.000	.000
	Tumbuka	1.000	.000
	Yao	.000	1.000
	other	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
religion	other christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Other	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/No card/Blind/Others		
Marital status	Married/living together		
	Never married/widowed/not living together/divorced		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Age at first intercourse: At or after 16 years	Predicted: Age at first intercourse: Before 16 years
Step 0	Age at first intercourse	At or after 16 years	669	0
		Before 16 years	370	0
	Overall Percentage			

Classification Table[a,b]

Observed			Predicted: Percentage Correct
Step 0	Age at first intercourse	At or after 16 years	100.0
		Before 16 years	.0
	Overall Percentage		64.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.593	.065	83.777	1	.000	.553

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	126.539	1	.000
		V024	.258	2	.879
		V024(1)	.062	1	.803
		V024(2)	.136	1	.712
		V106	54.219	3	.000
		V106(1)	4.191	1	.041
		V106(2)	37.267	1	.000
		V106(3)	22.850	1	.000
		V190	77.425	4	.000
		V190(1)	.032	1	.858
		V190(2)	18.456	1	.000
		V190(3)	2.603	1	.107
		V190(4)	47.469	1	.000
		Lit_acy(1)	47.769	1	.000
		relig_ion	80.207	4	.000
		relig_ion(1)	32.200	1	.000
		relig_ion(2)	9.896	1	.002
		relig_ion(3)	35.021	1	.000
		relig_ion(4)	23.891	1	.000
		marital_status(1)	517.878	1	.000
		ethn_cit	26.548	5	.000
		ethn_cit(1)	6.739	1	.009
		ethn_cit(2)	.050	1	.824
		ethn_cit(3)	1.697	1	.193
		ethn_cit(4)	10.280	1	.001
		ethn_cit(5)	11.000	1	.001
	Overall Statistics		562.879	21	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	675.359	21	.000
	Block	675.359	21	.000
	Model	675.359	21	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	678.167[a]	.478	.656

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Classification Table[a]

Observed			Predicted: Age at first intercourse — At or after 16 years	Predicted: Age at first intercourse — Before 16 years
Step 1	Age at first intercourse	At or after 16 years	662	7
		Before 16 years	127	243
	Overall Percentage			

Classification Table[a]

Observed			Predicted: Percentage Correct
Step 1	Age at first intercourse	At or after 16 years	98.9
		Before 16 years	65.7
	Overall Percentage		87.1

a. The cut value is .500

Variables not in the Equation

		B	S.E.	Wald	df	Sig.
Step 1[a]	V013(1)	-.695	.259	7.196	1	.007
	V024			6.694	2	.035
	V024(1)	-.619	.484	1.640	1	.200
	V024(2)	.463	.233	3.963	1	.047
	V106			4.588	3	.205
	V106(1)	-.252	1.465	.030	1	.863
	V106(2)	.962	.562	2.929	1	.087
	V106(3)	1.026	.527	3.789	1	.052
	V190			16.043	4	.003
	V190(1)	.437	.725	.364	1	.546
	V190(2)	1.910	.531	12.948	1	.000
	V190(3)	.698	.454	2.360	1	.124
	V190(4)	.677	.331	4.183	1	.041
	Lit_acy(1)	-.195	.425	.210	1	.647
	relig_ion			15.909	4	.003
	relig_ion(1)	.106	.300	.125	1	.723
	relig_ion(2)	-.576	.333	2.986	1	.084
	relig_ion(3)	-.957	.368	6.781	1	.009
	relig_ion(4)	-.718	.618	1.352	1	.245
	marital_status(1)	22.666	2557.282	.000	1	.993
	ethn_cit			26.091	5	.000
	ethn_cit(1)	-1.426	.322	19.596	1	.000
	ethn_cit(2)	-.949	.316	9.026	1	.003
	ethn_cit(3)	-.495	.308	2.594	1	.107
	ethn_cit(4)	-1.475	.614	5.775	1	.016
	ethn_cit(5)	-.979	.539	3.301	1	.069
	Constant	-.920	.704	1.707	1	.191

Variables in the Equation

		Exp(B)	95% C.I.for EXP(B)	
			Lower	Upper
Step 1[a]	V013(1)	.499	.301	.829
	V024			
	V024(1)	.538	.209	1.389
	V024(2)	1.589	1.007	2.506
	V106			
	V106(1)	.777	.044	13.719
	V106(2)	2.617	.870	7.877
	V106(3)	2.791	.993	7.844
	V190			
	V190(1)	1.548	.374	6.408
	V190(2)	6.754	2.386	19.117
	V190(3)	2.010	.825	4.896
	V190(4)	1.968	1.029	3.767
	Lit_acy(1)	.823	.358	1.892
	relig_ion			
	relig_ion(1)	1.112	.617	2.003
	relig_ion(2)	.562	.293	1.080
	relig_ion(3)	.384	.187	.789
	relig_ion(4)	.488	.145	1.636
	marital_status(1)	1.736	.000	.
	ethn_cit			
	ethn_cit(1)	.240	.128	.452
	ethn_cit(2)	.387	.208	.719
	ethn_cit(3)	.609	.333	1.113
	ethn_cit(4)	.229	.069	.762
	ethn_cit(5)	.376	.131	1.080
	Constant	.399		

a. Variable(s) entered on step 1: V013, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

Inconsistent condom use by background characteristics

```
  FILE='C:\Users\user\Desktop\Malawi 2010_female\Female Data_Inconsistent.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
LOGISTIC REGRESSION VARIABLES condom_useconsist
  /METHOD=ENTER V013 V025 V024 Edu_level wealth_inconsist Literacy_consist
relig_ion marital_status
    ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V025)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (Edu_level)=Indicator
  /CONTRAST (wealth_inconsist)=Indicator
  /CONTRAST (Literacy_consist)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 13:19:07
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Female Data_Inconsistent.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	662
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES condom_useconsist /METHOD=ENTER V013 V025 V024 Edu_level wealth_inconsist Literacy_consist relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V025)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (Edu_level)=Indicator /CONTRAST (wealth_inconsist)=Indicator /CONTRAST (Literacy_consist)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.04

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	662	100.0
	Missing Cases	0	.0
	Total	662	100.0
Unselected Cases		0	.0
Total		662	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	Parameter coding (2)
ethnicity1	chewa	130	1.000	.000
	Lomwe	115	.000	1.000
	ngoni	110	.000	.000
	tumbuka	94	.000	.000
	Yao	77	.000	.000
	other	136	.000	.000
religion	other christian	238	1.000	.000
	Catholic	150	.000	1.000
	CCAP	139	.000	.000
	Muslim	54	.000	.000
	Other	81	.000	.000
Region	Northern	175	1.000	.000
	Central	173	.000	1.000
	Southern	314	.000	.000
Highest educa	No Education	14	1.000	.000
	Primary	376	.000	1.000
	Secondary/Higher	272	.000	.000
Wealth_c	Richer	344	1.000	.000
	Average	113	.000	1.000
	Poorer	205	.000	.000
Literacy	Literate	567	1.000	
	Illiterate	95	.000	
Type of place of residence	Urban	154	1.000	
	Rural	508	.000	
Marital status	Married/living together	264	1.000	
	Never married/widowed/not living together/divorced	398	.000	
Age 5-year groups	15-19	333	1.000	
	20-24	329	.000	

Categorical Variables Codings

		Parameter coding		
		(3)	(4)	(5)
ethnicity1	chewa	.000	.000	.000
	Lomwe	.000	.000	.000
	ngoni	1.000	.000	.000
	tumbuka	.000	1.000	.000
	Yao	.000	.000	1.000
	other	.000	.000	.000
religion	other christian	.000	.000	
	Catholic	.000	.000	
	CCAP	1.000	.000	
	Muslim	.000	1.000	
	Other	.000	.000	
Region	Northern			
	Central			
	Southern			
Highest educa	No Education			
	Primary			
	Secondary/Higher			
Wealth_c	Richer			
	Average			
	Poorer			
Literacy	Literate			
	Illiterate			
Type of place of residence	Urban			
	Rural			
Marital status	Married/living together			
	Never married/widowed/not living together/divorced			
Age 5-year groups	15-19			
	20-24			

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Percentage Correct
Step 0	Condom use consistent	Yes	435	0	100.0
		No	240	0	.0
	Overall Percentage				64.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.594	.080	54.581	1	.000	.552

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	2.914	1	.088
		V025(1)	1.652	1	.199
		V024	1.027	2	.599
		V024(1)	.676	1	.411
		V024(2)	.092	1	.762
		Edu_level	6.918	2	.031
		Edu_level(1)	.164	1	.685
		Edu_level(2)	6.918	1	.009
		wealth_inconsist	11.026	2	.004
		wealth_inconsist(1)	11.023	1	.001
		wealth_inconsist(2)	2.966	1	.085
		Literacy_consist(1)	6.522	1	.011
		relig_ion	13.627	4	.009
		relig_ion(1)	4.165	1	.041
		relig_ion(2)	.497	1	.481
		relig_ion(3)	.040	1	.841
		relig_ion(4)	1.652	1	.199
		marital_status(1)	104.827	1	.000
		ethn_cit	7.901	5	.162
		ethn_cit(1)	.004	1	.948
		ethn_cit(2)	.157	1	.692
		ethn_cit(3)	3.413	1	.065
		ethn_cit(4)	.764	1	.382
		ethn_cit(5)	.003	1	.958
	Overall Statistics		124.553	19	.000

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	127.950	19	.000
	Block	127.950	19	.000
	Model	127.950	19	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	751.381[a]	.173	.237

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			Condom use consistent		Percentage Correct
	Observed		Yes	No	
Step 1	Condom use consistent	Yes	366	69	84.1
		No	115	125	52.0
	Overall Percentage				72.7

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	.213	.198	1.157	1	.282	1.238
	V025(1)	.106	.248	.182	1	.670	1.112
	V024			1.530	2	.465	
	V024(1)	-.421	.357	1.388	1	.239	.657
	V024(2)	.002	.253	.000	1	.992	1.002
	Edu_level			3.855	2	.145	
	Edu_level(1)	-1.326	.749	3.137	1	.077	.265
	Edu_level(2)	-.329	.235	1.955	1	.162	.720
	wealth_inconsist			1.285	2	.526	
	wealth_inconsist(1)	-.301	.271	1.227	1	.268	.740
	wealth_inconsist(2)	-.091	.292	.097	1	.755	.913
	Literacy_consist(1)	-.037	.304	.015	1	.903	.964
	relig_ion			6.155	4	.188	
	relig_ion(1)	.668	.368	3.289	1	.070	1.951
	relig_ion(2)	.432	.375	1.325	1	.250	1.540
	relig_ion(3)	.720	.381	3.572	1	.059	2.055
	relig_ion(4)	1.045	.506	4.268	1	.039	2.844
	marital_status(1)	1.960	.219	79.867	1	.000	7.099
	ethn_cit			6.316	5	.277	
	ethn_cit(1)	-.419	.349	1.440	1	.230	.658
	ethn_cit(2)	-.292	.330	.784	1	.376	.747
	ethn_cit(3)	-.495	.343	2.089	1	.148	.609
	ethn_cit(4)	-.867	.378	5.252	1	.022	.420
	ethn_cit(5)	-.596	.443	1.814	1	.178	.551
	Constant	-1.254	.570	4.832	1	.028	.285

a. Variable(s) entered on step 1: V013, V025, V024, Edu_level, wealth_inconsist, Literacy_consist, relig_ion, marital_status, ethn_cit.

Inconsistent condom use by residence (Rural)

```
USE ALL.
COMPUTE filter_$=(V025 = 2).
VARIABLE LABELS filter_$ 'V025 = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES condom_useconsist
  /METHOD=ENTER V013 V024 Edu_level wealth_inconsist Literacy_consist relig_ion
marital_status
    ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (Edu_level)=Indicator
  /CONTRAST (wealth_inconsist)=Indicator
  /CONTRAST (Literacy_consist)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 13:22:06
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Female Data_Inconsistent.sav
	Active Dataset	DataSet1
	Filter	V025 = 2 (FILTER)
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	508
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES condom_useconsist /METHOD=ENTER V013 V024 Edu_level wealth_inconsist Literacy_consist relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (Edu_level)=Indicator /CONTRAST (wealth_inconsist)=Indicator /CONTRAST (Literacy_consist)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.05

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	508	100.0
	Missing Cases	0	.0
	Total	508	100.0
Unselected Cases		0	.0
Total		508	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

		Frequency	Parameter coding		
			(1)	(2)	(3)
ethnicity1	chewa	104	1.000	.000	.000
	Lomwe	85	.000	1.000	.000
	ngoni	70	.000	.000	1.000
	tumbuka	77	.000	.000	.000
	Yao	56	.000	.000	.000
	other	116	.000	.000	.000
religion	other christian	195	1.000	.000	.000
	Catholic	110	.000	1.000	.000
	CCAP	106	.000	.000	1.000
	Muslim	42	.000	.000	.000
	Other	55	.000	.000	.000
Region	Northern	159	1.000	.000	
	Central	123	.000	1.000	
	Southern	226	.000	.000	
Highest educa	No Education	11	1.000	.000	
	Primary	338	.000	1.000	
	Secondary/Higher	159	.000	.000	
Wealth_c	Richer	198	1.000	.000	
	Average	109	.000	1.000	
	Poorer	201	.000	.000	
Literacy	Literate	424	1.000		
	Illiterate	84	.000		
Marital status	Married/living together	232	1.000		
	Never married/widowed/not living together/divorced	276	.000		
Age 5-year groups	15-19	259	1.000		
	20-24	249	.000		

Categorical Variables

		Parameter coding	
		(4)	(5)
ethnicity1	chewa	.000	.000
	Lomwe	.000	.000
	ngoni	.000	.000
	tumbuka	1.000	.000
	Yao	.000	1.000
	other	.000	.000
religion	other christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Other	.000	
Region	Northern		
	Central		
	Southern		
Highest educa	No Education		
	Primary		
	Secondary/Higher		
Wealth_c	Richer		
	Average		
	Poorer		
Literacy	Literate		
	Illiterate		
Marital status	Married/living together		
	Never married/widowed/not living together/divorced		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Percentage Correct
Step 0	Condom use consistent	Yes	283	0	100.0
		No	168	0	.0
	Overall Percentage				62.8

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.522	.097	28.663	1	.000	.594

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	.805	1	.370
		V024	3.845	2	.146
		V024(1)	.034	1	.853
		V024(2)	3.603	1	.058
		Edu_level	8.440	2	.015
		Edu_level(1)	.282	1	.595
		Edu_level(2)	8.420	1	.004
		wealth_inconsist	7.673	2	.022
		wealth_inconsist(1)	7.603	1	.006
		wealth_inconsist(2)	.899	1	.343
		Literacy_consist(1)	2.385	1	.122
		relig_ion	4.793	4	.309
		relig_ion(1)	1.692	1	.193
		relig_ion(2)	.523	1	.470
		relig_ion(3)	.074	1	.785
		relig_ion(4)	.094	1	.760
		marital_status(1)	49.119	1	.000
		ethn_cit	8.218	5	.145
		ethn_cit(1)	1.254	1	.263
		ethn_cit(2)	2.063	1	.151
		ethn_cit(3)	1.249	1	.264
		ethn_cit(4)	.256	1	.613
		ethn_cit(5)	.901	1	.343
	Overall Statistics		66.471	18	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	69.214	18	.000
	Block	69.214	18	.000
	Model	69.214	18	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	526.027[a]	.142	.194

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted		
			Condom use consistent		Percentage Correct
			Yes	No	
Step 1	Condom use consistent	Yes	238	45	84.3
		No	90	78	46.4
	Overall Percentage				70.2

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	.226	.236	.918	1	.338	1.253
	V024			4.873	2	.087	
	V024(1)	-.773	.406	3.629	1	.057	.462
	V024(2)	-.580	.357	2.640	1	.104	.560
	Edu_level			2.674	2	.263	
	Edu_level(1)	-1.024	.791	1.677	1	.195	.359
	Edu_level(2)	.128	.279	.211	1	.646	1.137
	wealth_inconsist			.636	2	.728	
	wealth_inconsist(1)	-.223	.283	.624	1	.429	.800
	wealth_inconsist(2)	-.076	.296	.066	1	.797	.927
	Literacy_consist(1)	-.162	.335	.235	1	.628	.850
	relig_ion			3.749	4	.441	
	relig_ion(1)	.213	.453	.221	1	.638	1.237
	relig_ion(2)	.286	.467	.376	1	.540	1.331
	relig_ion(3)	.537	.468	1.315	1	.252	1.711
	relig_ion(4)	.953	.609	2.444	1	.118	2.593
	marital_status(1)	1.567	.256	37.467	1	.000	4.794
	ethn_cit			3.740	5	.587	
	ethn_cit(1)	-.383	.433	.783	1	.376	.682
	ethn_cit(2)	-.327	.391	.701	1	.402	.721
	ethn_cit(3)	-.339	.420	.653	1	.419	.712
	ethn_cit(4)	-.470	.428	1.205	1	.272	.625
	ethn_cit(5)	-.935	.539	3.013	1	.083	.393
	Constant	-.831	.659	1.590	1	.207	.436

a. Variable(s) entered on step 1: V013, V024, Edu_level, wealth_inconsist, Literacy_consist, relig_ion, marital_status, ethn_cit.

Inconsistent condom use by residence (Urban)

```
USE ALL.
COMPUTE filter_$=(V025 = 1).
VARIABLE LABELS filter_$ 'V025 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES condom_useconsist
  /METHOD=ENTER V013 V024 Edu_level wealth_inconsist Literacy_consist relig_ion
marital_status
    ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (Edu_level)=Indicator
  /CONTRAST (wealth_inconsist)=Indicator
  /CONTRAST (Literacy_consist)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 13:21:07
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Female Data_Inconsistent.sav
	Active Dataset	DataSet1
	Filter	V025 = 1 (FILTER)
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	154
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES condom_useconsist /METHOD=ENTER V013 V024 Edu_level wealth_inconsist Literacy_consist relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (Edu_level)=Indicator /CONTRAST (wealth_inconsist)=Indicator /CONTRAST (Literacy_consist)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.03

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	154	100.0
	Missing Cases	0	.0
	Total	154	100.0
Unselected Cases		0	.0
Total		154	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

		Frequency	Parameter coding		
			(1)	(2)	(3)
ethnicity1	chewa	26	1.000	.000	.000
	Lomwe	30	.000	1.000	.000
	ngoni	40	.000	.000	1.000
	tumbuka	17	.000	.000	.000
	Yao	21	.000	.000	.000
	other	20	.000	.000	.000
religion	other christian	43	1.000	.000	.000
	Catholic	40	.000	1.000	.000
	CCAP	33	.000	.000	1.000
	Muslim	12	.000	.000	.000
	Other	26	.000	.000	.000
Region	Northern	16	1.000	.000	
	Central	50	.000	1.000	
	Southern	88	.000	.000	
Highest educa	No Education	3	1.000	.000	
	Primary	38	.000	1.000	
	Secondary/Higher	113	.000	.000	
Wealth_c	Richer	146	1.000	.000	
	Average	4	.000	1.000	
	Poorer	4	.000	.000	
Literacy	Literate	143	1.000		
	Illiterate	11	.000		
Marital status	Married/living together	32	1.000		
	Never married/widowed/not living together/divorced	122	.000		
Age 5-year groups	15-19	74	1.000		
	20-24	80	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
ethnicity1	chewa	.000	.000
	Lomwe	.000	.000
	ngoni	.000	.000
	tumbuka	1.000	.000
	Yao	.000	1.000
	other	.000	.000
religion	other christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Other	.000	
Region	Northern		
	Central		
	Southern		
Highest educa	No Education		
	Primary		
	Secondary/Higher		
Wealth_c	Richer		
	Average		
	Poorer		
Literacy	Literate		
	Illiterate		
Marital status	Married/living together		
	Never married/widowed/not living together/divorced		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted		
			Condom use consistent		Percentage Correct
			Yes	No	
Step 0	Condom use consistent	Yes	152	0	100.0
		No	72	0	.0
	Overall Percentage				67.8

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.744	.143	27.126	1	.000	.475

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	3.645	1	.056
		V024	15.278	2	.000
		V024(1)	1.581	1	.209
		V024(2)	11.785	1	.001
		Edu_level	.046	2	.977
		Edu_level(1)	.001	1	.975
		Edu_level(2)	.046	1	.830
		wealth_inconsist	6.329	2	.042
		wealth_inconsist(1)	3.657	1	.056
		wealth_inconsist(2)	6.329	1	.012
		Literacy_consist(1)	5.406	1	.020
		relig_ion	10.884	4	.028
		relig_ion(1)	2.362	1	.124
		relig_ion(2)	.012	1	.914
		relig_ion(3)	.701	1	.403
		relig_ion(4)	3.319	1	.068
		marital_status(1)	64.631	1	.000
		ethn_cit	7.608	5	.179
		ethn_cit(1)	2.334	1	.127
		ethn_cit(2)	1.448	1	.229
		ethn_cit(3)	1.843	1	.175
		ethn_cit(4)	1.195	1	.274
		ethn_cit(5)	2.109	1	.146
	Overall Statistics		93.871	18	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	107.701	18	.000
	Block	107.701	18	.000
	Model	107.701	18	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	174.725[a]	.381	.532

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Percentage Correct
Step 1	Condom use consistent	Yes	138	14	90.7
		No	25	48	65.9
	Overall Percentage				82.7

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	.089	.440	.041	1	.839	1.094
	V024			6.257	2	.044	
	V024(1)	1.291	1.168	1.222	1	.269	3.636
	V024(2)	1.171	.476	6.046	1	.014	3.226
	Edu_level			9.124	2	.010	
	Edu_level(1)	.134	2.148	.004	1	.950	1.143
	Edu_level(2)	-1.955	.652	8.983	1	.003	.141
	wealth_inconsist			4.603	2	.100	
	wealth_inconsist(1)	-1.985	1.873	1.124	1	.289	.137
	wealth_inconsist(2)	4.569	3.762	1.475	1	.225	96.426
	Literacy_consist(1)	.060	.800	.006	1	.940	1.062
	relig_ion			12.011	4	.017	
	relig_ion(1)	2.208	.847	6.795	1	.009	9.098
	relig_ion(2)	.586	.872	.452	1	.502	1.796
	relig_ion(3)	1.348	.903	2.227	1	.136	3.848
	relig_ion(4)	.647	1.109	.340	1	.560	1.909
	marital_status(1)	3.643	.626	33.845	1	.000	38.217
	ethn_cit			9.508	5	.090	
	ethn_cit(1)	-.473	.731	.418	1	.518	.623
	ethn_cit(2)	-.474	.783	.367	1	.545	.622
	ethn_cit(3)	-1.085	.743	2.132	1	.144	.338
	ethn_cit(4)	-3.302	1.148	8.277	1	.004	.037
	ethn_cit(5)	-.195	.892	.048	1	.827	.823
	Constant	-.741	2.012	.136	1	.713	.477

Variable(s) entered on step 1: V013, V024, Edu_level, wealth_inconsist, Literacy_consist, relig_ion, marital_status, ethn_cit.

Multiple sexual partnerships by background characteristics

```
LOGISTIC REGRESSION VARIABLES Multiple_partner
  /METHOD=ENTER V013 V025 V024 V106 V190 Lit_acy relig_ion marital_status
ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V025)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 12:43:13
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Multiple partner.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	6309
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Multiple_partner /METHOD=ENTER V013 V025 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V025)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.30
	Elapsed Time	00:00:00.34

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	6309	100.0
	Missing Cases	0	.0
	Total	6309	100.0
Unselected Cases		0	.0
Total		6309	100.0

If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
One partner	0
Multiple partner	1

Categorical Variables Codings

		Frequency	Parameter coding	
			(1)	(2)
ethnicity1	chewa	1800	1.000	.000
	Lomwe	1049	.000	1.000
	ngoni	829	.000	.000
	tumbuka	677	.000	.000
	Yao	769	.000	.000
	other	1185	.000	.000
Wealth index	Poorest	1251	1.000	.000
	Poorer	1363	.000	1.000
	Middle	1423	.000	.000
	Richer	1189	.000	.000
	Richest	1083	.000	.000
religion	other christian	2622	1.000	.000
	Catholic	1252	.000	1.000
	CCAP	968	.000	.000
	Muslim	765	.000	.000
	Other	702	.000	.000
Highest educational level	No education	382	1.000	.000
	Primary	4526	.000	1.000
	Secondary	1328	.000	.000
	Higher	73	.000	.000
Region	Northern	1160	1.000	.000
	Central	2060	.000	1.000
	Southern	3089	.000	.000
Type of place of residence	Urban	824	1.000	
	Rural	5485	.000	
Literacy	Able to read whole sentence	4665	1.000	
	Cannot read/No card/Blind/Others	1644	.000	
Marital status	Married/living together	4474	1.000	
	Never married/widowed/not living together/divorced	1835	.000	
Age 5-year groups	15-19	2196	1.000	
	20-24	4113	.000	

		Parameter coding		
		(3)	(4)	(5)
ethnicity1	chewa	.000	.000	.000
	Lomwe	.000	.000	.000
	ngoni	1.000	.000	.000
	tumbuka	.000	1.000	.000
	Yao	.000	.000	1.000
	other	.000	.000	.000
Wealth index	Poorest	.000	.000	
	Poorer	.000	.000	
	Middle	1.000	.000	
	Richer	.000	1.000	
	Richest	.000	.000	
religion	other christian	.000	.000	
	Catholic	.000	.000	
	CCAP	1.000	.000	
	Muslim	.000	1.000	
	Other	.000	.000	
Highest educational level	No education	.000		
	Primary	.000		
	Secondary	1.000		
	Higher	.000		
Region	Northern			
	Central			
	Southern			
Type of place of residence	Urban			
	Rural			
Literacy	Able to read whole sentence			
	Cannot read/No card/Blind/Others			
Marital status	Married/living together			
	Never married/widowed/not living together/divorced			
Age 5-year groups	15-19			
	20-24			

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Multiple partner: One partner	Predicted: Multiple partner: Multiple partner	Predicted: Percentage Correct
Step 0	Multiple partner	One partner	4179	0	100.0
		Multiple partner	2290	0	.0
	Overall Percentage				64.6

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.601	.026	535.063	1	.000	.548

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	29.489	1	.000
		V025(1)	30.872	1	.000
		V024	201.010	2	.000
		V024(1)	23.167	1	.000
		V024(2)	126.183	1	.000
		V106	6.318	3	.097
		V106(1)	.863	1	.353
		V106(2)	.287	1	.592
		V106(3)	2.832	1	.092
		V190	13.385	4	.010
		V190(1)	.876	1	.349
		V190(2)	1.140	1	.286
		V190(3)	4.883	1	.027
		V190(4)	1.983	1	.159
		Lit_acy(1)	1.351	1	.245
		relig_ion	94.858	4	.000
		relig_ion(1)	.150	1	.698
		relig_ion(2)	12.273	1	.000
		relig_ion(3)	21.790	1	.000
		relig_ion(4)	77.737	1	.000
		marital_status(1)	9.096	1	.003
		ethn_cit	189.357	5	.000
		ethn_cit(1)	83.527	1	.000
		ethn_cit(2)	25.807	1	.000
		ethn_cit(3)	4.363	1	.037
		ethn_cit(4)	26.105	1	.000
		ethn_cit(5)	97.921	1	.000
	Overall Statistics		358.220	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	362.736	22	.000
	Block	362.736	22	.000
	Model	362.736	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	8046.511[a]	.055	.075

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Multiple partner – One partner	Predicted: Multiple partner – Multiple partner	Predicted: Percentage Correct
Step 1	Multiple partner	One partner	3825	354	91.5
		Multiple partner	1823	467	20.4
	Overall Percentage				66.3

a. The cut value is .500

Variables not in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	-.440	.061	52.116	1	.000	.644
	V025(1)	.336	.082	16.884	1	.000	1.400
	V024			70.757	2	.000	
	V024(1)	-.315	.120	6.865	1	.009	.730
	V024(2)	-.649	.077	70.293	1	.000	.522
	V106			11.005	3	.012	
	V106(1)	.092	.258	.128	1	.721	1.097
	V106(2)	.134	.228	.347	1	.556	1.144
	V106(3)	-.119	.224	.285	1	.593	.887
	V190			3.610	4	.461	
	V190(1)	-.079	.105	.570	1	.450	.924
	V190(2)	-.067	.101	.438	1	.508	.935
	V190(3)	-.142	.099	2.075	1	.150	.868
	V190(4)	.013	.093	.021	1	.886	1.013
	Lit_acy(1)	-.047	.072	.424	1	.515	.954
	relig_ion			7.685	4	.104	
	relig_ion(1)	.136	.097	1.966	1	.161	1.146
	relig_ion(2)	.010	.107	.009	1	.923	1.010
	relig_ion(3)	-.018	.113	.024	1	.876	.983
	relig_ion(4)	.243	.137	3.122	1	.077	1.275
	marital_status(1)	-.265	.065	16.832	1	.000	.767
	ethn_cit			31.887	5	.000	
	ethn_cit(1)	.133	.104	1.633	1	.201	1.142
	ethn_cit(2)	.282	.099	8.070	1	.005	1.325
	ethn_cit(3)	.455	.111	16.916	1	.000	1.576
	ethn_cit(4)	-.087	.136	.410	1	.522	.916
	ethn_cit(5)	.494	.131	14.184	1	.000	1.639
	Constant	-.342	.254	1.816	1	.178	.710

Variables not in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	V013(1)	.571	.726
	V025(1)	1.192	1.643
	V024		
	V024(1)	.576	.924
	V024(2)	.449	.608
	V106		
	V106(1)	.661	1.819
	V106(2)	.731	1.790
	V106(3)	.572	1.376
	V190		
	V190(1)	.752	1.135
	V190(2)	.767	1.140
	V190(3)	.715	1.053
	V190(4)	.845	1.215
	Lit_acy(1)	.829	1.099
	relig_ion		
	relig_ion(1)	.947	1.387
	relig_ion(2)	.819	1.247
	relig_ion(3)	.787	1.227
	relig_ion(4)	.974	1.668
	marital_status(1)	.676	.871
	ethn_cit		
	ethn_cit(1)	.931	1.401
	ethn_cit(2)	1.091	1.610
	ethn_cit(3)	1.269	1.957
	ethn_cit(4)	.702	1.197
	ethn_cit(5)	1.267	2.119
	Constant		

a. Variable(s) entered on step 1: V013, V025, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

Multiple sexual partnerships by residence (rural)

```
USE ALL.
COMPUTE filter_$=(V025 = 2).
VARIABLE LABELS filter_$ 'V025 = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Multiple_partner
  /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 12:48:01
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Multiple partner.sav
	Active Dataset	DataSet1
	Filter	V025 = 2 (FILTER)
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	5485
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Multiple_partner /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.20
	Elapsed Time	00:00:00.21

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	5485	100.0
	Missing Cases	0	.0
	Total	5485	100.0
Unselected Cases		0	.0
Total		5485	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
One partner	0
Multiple partner	1

		Frequency	Parameter coding (1)	(2)	(3)
ethnicity1	chewa	1634	1.000	.000	.000
	Lomwe	894	.000	1.000	.000
	ngoni	682	.000	.000	1.000
	tumbuka	582	.000	.000	.000
	Yao	656	.000	.000	.000
	other	1037	.000	.000	.000
Wealth index	Poorest	1226	1.000	.000	.000
	Poorer	1323	.000	1.000	.000
	Middle	1360	.000	.000	1.000
	Richer	1014	.000	.000	.000
	Richest	562	.000	.000	.000
religion	other christian	2308	1.000	.000	.000
	Catholic	1098	.000	1.000	.000
	CCAP	803	.000	.000	1.000
	Muslim	677	.000	.000	.000
	Other	599	.000	.000	.000
Highest educational level	No education	358	1.000	.000	.000
	Primary	4153	.000	1.000	.000
	Secondary	949	.000	.000	1.000
	Higher	25	.000	.000	.000
Region	Northern	1017	1.000	.000	
	Central	1821	.000	1.000	
	Southern	2647	.000	.000	
Literacy	Able to read whole sentence	3964	1.000		
	Cannot read/No card/Blind/Others	1521	.000		
Marital status	Married/living together	3985	1.000		
	Never married/widowed/not living together/divorced	1500	.000		
Age 5-year groups	15-19	1926	1.000		
	20-24	3559	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
ethnicity1	Chewa	.000	.000
	Lomwe	.000	.000
	Ngoni	.000	.000
	Tumbuka	1.000	.000
	Yao	.000	1.000
	other	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Religion	other christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Other	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/No card/Blind/Others		
Marital status	Married/living together		
	Never married/widowed/not living together/divorced		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Multiple partner - One partner	Predicted: Multiple partner - Multiple partner	Percentage Correct
Step 0	Multiple partner	One partner	3482	0	100.0
		Multiple partner	1780	0	.0
	Overall Percentage				66.2

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.671	.029	530.737	1	.000	.511

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	28.505	1	.000
		V024	170.257	2	.000
		V024(1)	18.695	1	.000
		V024(2)	105.588	1	.000
		V106	10.428	3	.015
		V106(1)	2.047	1	.153
		V106(2)	3.183	1	.074
		V106(3)	9.307	1	.002
		V190	1.801	4	.772
		V190(1)	.525	1	.469
		V190(2)	.225	1	.636
		V190(3)	.727	1	.394
		V190(4)	.086	1	.769
		Lit_acy(1)	4.279	1	.039
		relig_ion	115.961	4	.000
		relig_ion(1)	.168	1	.682
		relig_ion(2)	15.037	1	.000
		relig_ion(3)	21.141	1	.000
		relig_ion(4)	100.822	1	.000
		marital_status(1)	5.208	1	.022
		ethn_cit	178.781	5	.000
		ethn_cit(1)	72.939	1	.000
		ethn_cit(2)	27.861	1	.000
		ethn_cit(3)	.521	1	.471
		ethn_cit(4)	25.620	1	.000
		ethn_cit(5)	98.155	1	.000
	Overall Statistics		296.413	21	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	299.218	21	.000
	Block	299.218	21	.000
	Model	299.218	21	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	6434.196[a]	.055	.077

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted		
			Multiple partner		Percentage Correct
			One partner	Multiple partner	
Step 1	Multiple partner	One partner	3263	219	93.7
		Multiple partner	1478	301	16.9
	Overall Percentage				67.7

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	-.490	.068	51.343	1	.000	.612
	V024			43.905	2	.000	
	V024(1)	-.250	.137	3.339	1	.068	.778
	V024(2)	-.616	.093	43.880	1	.000	.540
	V106			8.028	3	.045	
	V106(1)	.350	.486	.517	1	.472	1.418
	V106(2)	.436	.469	.861	1	.353	1.546
	V106(3)	.192	.469	.167	1	.683	1.211
	V190			1.170	4	.883	
	V190(1)	-.007	.121	.003	1	.955	.993
	V190(2)	-.005	.118	.002	1	.965	.995
	V190(3)	-.082	.116	.491	1	.483	.922
	V190(4)	-.003	.118	.001	1	.979	.997
	Lit_acy(1)	-.039	.078	.247	1	.619	.962
	relig_ion			11.700	4	.020	
	relig_ion(1)	.055	.111	.244	1	.622	1.056
	relig_ion(2)	-.060	.122	.245	1	.620	.942
	relig_ion(3)	-.075	.130	.334	1	.564	.928
	relig_ion(4)	.409	.162	6.358	1	.012	1.506
	marital_status(1)	-.277	.073	14.407	1	.000	.758
	ethn_cit			23.210	5	.000	
	ethn_cit(1)	.068	.119	.326	1	.568	1.070
	ethn_cit(2)	.311	.111	7.769	1	.005	1.364
	ethn_cit(3)	.407	.129	9.951	1	.002	1.502
	ethn_cit(4)	-.189	.157	1.453	1	.228	.828
	ethn_cit(5)	.340	.156	4.756	1	.029	1.405
	Constant	-.602	.479	1.581	1	.209	.548

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	V013(1)	.536	.700
	V024		
	V024(1)	.595	1.018
	V024(2)	.450	.648
	V106		
	V106(1)	.547	3.677
	V106(2)	.616	3.880
	V106(3)	.483	3.039
	V190		
	V190(1)	.784	1.258
	V190(2)	.790	1.253
	V190(3)	.734	1.158
	V190(4)	.791	1.257
	Lit_acy(1)	.827	1.120
	relig_ion		
	relig_ion(1)	.850	1.312
	relig_ion(2)	.742	1.195
	relig_ion(3)	.719	1.197
	relig_ion(4)	1.095	2.069
	marital_status(1)	.657	.875
	ethn_cit		
	ethn_cit(1)	.848	1.350
	ethn_cit(2)	1.097	1.698
	ethn_cit(3)	1.167	1.934
	ethn_cit(4)	.609	1.126
	ethn_cit(5)	1.035	1.906
	Constant		

Variable(s) entered on step 1: V013, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

Multiple sexual partnerships by residence (Urban)

```
USE ALL.
COMPUTE filter_$=(V025 = 1).
VARIABLE LABELS filter_$ 'V025 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Multiple_partner
  /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 12:44:59
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Multiple partner.sav
	Active Dataset	DataSet1
	Filter	V025 = 1 (FILTER)
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	824
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Multiple_partner /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.14
	Elapsed Time	00:00:00.15

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	824	100.0
	Missing Cases	0	.0
	Total	824	100.0
Unselected Cases		0	.0
Total		824	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
One partner	0
Multiple partner	1

Categorical Variables Codings

		Frequency	Parameter coding		
			(1)	(2)	(3)
ethnicity1	Chewa	166	1.000	.000	.000
	Lomwe	155	.000	1.000	.000
	Ngoni	147	.000	.000	1.000
	Tumbuka	95	.000	.000	.000
	Yao	113	.000	.000	.000
	other	148	.000	.000	.000
Wealth index	Poorest	25	1.000	.000	.000
	Poorer	40	.000	1.000	.000
	Middle	63	.000	.000	1.000
	Richer	175	.000	.000	.000
	Richest	521	.000	.000	.000
religion	other christian	314	1.000	.000	.000
	Catholic	154	.000	1.000	.000
	CCAP	165	.000	.000	1.000
	Muslim	88	.000	.000	.000
	Other	103	.000	.000	.000
Highest educational level	No education	24	1.000	.000	.000
	Primary	373	.000	1.000	.000
	Secondary	379	.000	.000	1.000
	Higher	48	.000	.000	.000
Region	Northern	143	1.000	.000	
	Central	239	.000	1.000	
	Southern	442	.000	.000	
Literacy	Able to read whole sentence	701	1.000		
	Cannot read/No card/Blind/Others	123	.000		
Marital status	Married/living together	489	1.000		
	Never married/widowed/not living together/divorced	335	.000		
Age 5-year groups	15-19	270	1.000		
	20-24	554	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
ethnicity1	Chewa	.000	.000
	Lomwe	.000	.000
	Ngoni	.000	.000
	Tumbuka	1.000	.000
	Yao	.000	1.000
	other	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
religion	other christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Other	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/No card/Blind/Others		
Marital status	Married/living together		
	Never married/widowed/not living together/divorced		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Multiple partner: One partner	Predicted: Multiple partner: Multiple partner	Predicted: Percentage Correct
Step 0	Multiple partner	One partner	697	0	100.0
		Multiple partner	511	0	.0
	Overall Percentage				57.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.311	.058	28.426	1	.000	.733

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	1.615	1	.204
		V024	28.295	2	.000
		V024(1)	.805	1	.370
		V024(2)	24.159	1	.000
		V106	2.129	3	.546
		V106(1)	.001	1	.974
		V106(2)	.669	1	.413
		V106(3)	1.623	1	.203
		V190	18.304	4	.001
		V190(1)	8.049	1	.005
		V190(2)	3.680	1	.055
		V190(3)	3.295	1	.069
		V190(4)	4.510	1	.034
		Lit_acy(1)	.083	1	.773
		relig_ion	5.806	4	.214
		relig_ion(1)	3.945	1	.047
		relig_ion(2)	.091	1	.763
		relig_ion(3)	2.960	1	.085
		relig_ion(4)	.098	1	.754
		marital_status(1)	1.291	1	.256
		ethn_cit	14.982	5	.010
		ethn_cit(1)	6.415	1	.011
		ethn_cit(2)	.244	1	.621
		ethn_cit(3)	4.191	1	.041
		ethn_cit(4)	.446	1	.504
		ethn_cit(5)	4.988	1	.026
	Overall Statistics		71.764	21	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	73.917	21	.000
	Block	73.917	21	.000
	Model	73.917	21	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1571.631[a]	.059	.080

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Multiple partner: One partner	Predicted: Multiple partner: Multiple partner	Predicted: Percentage Correct
Step 1	Multiple partner	One partner	574	122	82.4
		Multiple partner	303	208	40.8
	Overall Percentage				64.8

a. The cut value is .500

Variables not in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	-.247	.140	3.123	1	.077	.781
	V024			20.474	2	.000	
	V024(1)	-.302	.290	1.085	1	.298	.739
	V024(2)	-.661	.146	20.415	1	.000	.516
	V106			5.455	3	.141	
	V106(1)	.408	.498	.670	1	.413	1.503
	V106(2)	.149	.291	.262	1	.609	1.161
	V106(3)	-.185	.269	.473	1	.492	.831
	V190			19.185	4	.001	
	V190(1)	-1.305	.467	7.820	1	.005	.271
	V190(2)	-.833	.340	6.000	1	.014	.435
	V190(3)	-.556	.255	4.733	1	.030	.574
	V190(4)	.143	.161	.794	1	.373	1.154
	Lit_acy(1)	-.015	.202	.006	1	.939	.985
	relig_ion			11.602	4	.021	
	relig_ion(1)	.399	.207	3.725	1	.054	1.491
	relig_ion(2)	.287	.232	1.531	1	.216	1.333
	relig_ion(3)	.085	.235	.131	1	.718	1.089
	relig_ion(4)	-.280	.273	1.049	1	.306	.756
	marital_status(1)	-.200	.142	1.976	1	.160	.819
	ethn_cit			12.674	5	.027	
	ethn_cit(1)	.417	.234	3.173	1	.075	1.517
	ethn_cit(2)	.188	.225	.700	1	.403	1.207
	ethn_cit(3)	.568	.231	6.053	1	.014	1.764
	ethn_cit(4)	.208	.292	.508	1	.476	1.232
	ethn_cit(5)	.779	.263	8.764	1	.003	2.180
	Constant	-.285	.398	.514	1	.473	.752

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	V013(1)	.593	1.027
	V024		
	V024(1)	.418	1.306
	V024(2)	.388	.688
	V106		
	V106(1)	.566	3.989
	V106(2)	.656	2.055
	V106(3)	.491	1.407
	V190		
	V190(1)	.109	.677
	V190(2)	.223	.847
	V190(3)	.348	.946
	V190(4)	.842	1.580
	Lit_acy(1)	.663	1.463
	relig_ion		
	relig_ion(1)	.994	2.236
	relig_ion(2)	.846	2.100
	relig_ion(3)	.687	1.725
	relig_ion(4)	.443	1.291
	marital_status(1)	.620	1.082
	ethn_cit		
	ethn_cit(1)	.959	2.399
	ethn_cit(2)	.776	1.877
	ethn_cit(3)	1.122	2.773
	ethn_cit(4)	.695	2.184
	ethn_cit(5)	1.301	3.651
	Constant		

a. Variable(s) entered on step 1: V013, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

Non-use of condom by background characteristics

```
LOGISTIC REGRESSION VARIABLES Last_condom
  /METHOD=ENTER V013 V025 V024 V106 V190 Lit_acy relig_ion marital_status
ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V025)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 12:21:42
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Last intercourse use condom.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	Wt
	Split File	<none>
	N of Rows in Working Data File	5483
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Last_condom /METHOD=ENTER V013 V025 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V025)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.22
	Elapsed Time	00:00:00.23

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	5483	100.0
	Missing Cases	0	.0
	Total	5483	100.0
Unselected Cases		0	.0
Total		5483	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

		Frequency	Parameter coding (1)	(2)
ethnicity1	Chewa	1619	1.000	.000
	Lomwe	911	.000	1.000
	Ngoni	701	.000	.000
	Tumbuka	582	.000	.000
	Yao	663	.000	.000
	other	1007	.000	.000
Wealth index	Poorest	1099	1.000	.000
	Poorer	1212	.000	1.000
	Middle	1261	.000	.000
	Richer	1021	.000	.000
	Richest	890	.000	.000
religion	other christian	2309	1.000	.000
	Catholic	1096	.000	1.000
	CCAP	817	.000	.000
	Muslim	655	.000	.000
	Other	606	.000	.000
Highest educational level	No education	349	1.000	.000
	Primary	4017	.000	1.000
	Secondary	1055	.000	.000
	Higher	62	.000	.000
Region	Northern	994	1.000	.000
	Central	1822	.000	1.000
	Southern	2667	.000	.000
Type of place of residence	Urban	704	1.000	
	Rural	4779	.000	
Literacy	Able to read whole sentence	4002	1.000	
	Cannot read/No card/Blind/Others	1481	.000	
Marital status	Married/living together	4312	1.000	
	Never married/widowed/not living together/divorced	1171	.000	
Age 5-year groups	15-19	1806	1.000	
	20-24	3677	.000	

Categorical Variables Codings

		Parameter coding		
		(3)	(4)	(5)
ethnicity1	Chewa	.000	.000	.000
	Lomwe	.000	.000	.000
	Ngoni	1.000	.000	.000
	Tumbuka	.000	1.000	.000
	Yao	.000	.000	1.000
	Other	.000	.000	.000
Wealth index	Poorest	.000	.000	
	Poorer	.000	.000	
	Middle	1.000	.000	
	Richer	.000	1.000	
	Richest	.000	.000	
religion	other christian	.000	.000	
	Catholic	.000	.000	
	CCAP	1.000	.000	
	Muslim	.000	1.000	
	Other	.000	.000	
Highest educational level	No education	.000		
	Primary	.000		
	Secondary	1.000		
	Higher	.000		
Region	Northern			
	Central			
	Southern			
Type of place of residence	Urban			
	Rural			
Literacy	Able to read whole sentence			
	Cannot read/No card/Blind/Others			
Marital status	Married/living together			
	Never married/widowed/not living together/divorced			
Age 5-year groups	15-19			
	20-24			

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted		
			Last intercourse condom		Percentage Correct
			Yes	No	
Step 0	Last intercourse condom	Yes	0	711	.0
		No	0	4941	100.0
	Overall Percentage				87.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	1.939	.040	2335.814	1	.000	6.949

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	125.474	1	.000
		V025(1)	89.910	1	.000
		V024	12.001	2	.002
		V024(1)	7.779	1	.005
		V024(2)	7.889	1	.005
		V106	349.561	3	.000
		V106(1)	30.746	1	.000
		V106(2)	116.415	1	.000
		V106(3)	137.825	1	.000
		V190	237.368	4	.000
		V190(1)	25.942	1	.000
		V190(2)	22.217	1	.000
		V190(3)	19.781	1	.000
		V190(4)	.660	1	.417
		Lit_acy(1)	79.394	1	.000
		relig_ion	43.583	4	.000
		relig_ion(1)	16.414	1	.000
		relig_ion(2)	4.207	1	.040
		relig_ion(3)	27.558	1	.000
		relig_ion(4)	7.648	1	.006
		marital_status(1)	842.930	1	.000
		ethn_cit	48.433	5	.000
		ethn_cit(1)	42.732	1	.000
		ethn_cit(2)	4.651	1	.031
		ethn_cit(3)	13.329	1	.000
		ethn_cit(4)	3.278	1	.070
		ethn_cit(5)	.170	1	.680
	Overall Statistics		1116.292	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	936.541	22	.000
	Block	936.541	22	.000
	Model	936.541	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	3339.920[a]	.153	.288

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			Last intercourse condom		Percentage Correct
	Observed		Yes	No	
Step 1	Last intercourse condom	Yes	155	556	21.8
		No	98	4843	98.0
	Overall Percentage				88.4

a. The cut value is .500

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	-.498	.097	26.435	1	.000	.607
	V025(1)	-.098	.127	.598	1	.439	.907
	V024			10.285	2	.006	
	V024(1)	-.545	.184	8.777	1	.003	.580
	V024(2)	-.257	.131	3.851	1	.050	.774
	V106			39.423	3	.000	
	V106(1)	2.039	.415	24.152	1	.000	7.681
	V106(2)	1.698	.291	34.071	1	.000	5.465
	V106(3)	1.266	.279	20.539	1	.000	3.547
	V190			24.768	4	.000	
	V190(1)	.799	.174	21.185	1	.000	2.224
	V190(2)	.467	.163	8.261	1	.004	1.595
	V190(3)	.576	.157	13.476	1	.000	1.779
	V190(4)	.480	.142	11.406	1	.001	1.616
	Lit_acy(1)	-.230	.140	2.705	1	.100	.794
	relig_ion			14.244	4	.007	
	relig_ion(1)	-.110	.166	.439	1	.507	.896
	relig_ion(2)	-.195	.176	1.220	1	.269	.823
	relig_ion(3)	-.312	.180	2.991	1	.084	.732
	relig_ion(4)	.536	.242	4.905	1	.027	1.710
	marital_status(1)	1.932	.097	394.200	1	.000	6.903
	ethn_cit			22.970	5	.000	
	ethn_cit(1)	.536	.180	8.899	1	.003	1.709
	ethn_cit(2)	-.020	.170	.014	1	.907	.980
	ethn_cit(3)	.180	.184	.964	1	.326	1.198
	ethn_cit(4)	.239	.201	1.416	1	.234	1.270
	ethn_cit(5)	-.441	.225	3.829	1	.050	.644
	Constant	-.750	.357	4.408	1	.036	.472

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	V013(1)	.502	.735
	V025(1)	.707	1.162
	V024		
	V024(1)	.404	.832
	V024(2)	.599	1.000
	V106		
	V106(1)	3.407	17.320
	V106(2)	3.090	9.666
	V106(3)	2.052	6.134
	V190		
	V190(1)	1.582	3.126
	V190(2)	1.160	2.194
	V190(3)	1.308	2.420
	V190(4)	1.223	2.136
	Lit_acy(1)	.604	1.045
	relig_ion		
	relig_ion(1)	.646	1.241
	relig_ion(2)	.583	1.163
	relig_ion(3)	.514	1.042
	relig_ion(4)	1.064	2.749
	marital_status(1)	5.704	8.354
	ethn_cit		
	ethn_cit(1)	1.202	2.429
	ethn_cit(2)	.703	1.368
	ethn_cit(3)	.836	1.717
	ethn_cit(4)	.857	1.883
	ethn_cit(5)	.414	1.001
	Constant		

a. Variable(s) entered on step 1: V013, V025, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

Non-use of condom by residence (Rural)

```
USE ALL.
COMPUTE filter_$=(V025 = 2).
VARIABLE LABELS filter_$ 'V025 = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Last_condom
  /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 12:27:28
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Last intercourse use condom.sav
	Active Dataset	DataSet1
	Filter	V025 = 2 (FILTER)
	Weight	Wt
	Split File	<none>
	N of Rows in Working Data File	4779
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Last_condom /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.17
	Elapsed Time	00:00:00.19

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	4779	100.0
	Missing Cases	0	.0
	Total	4779	100.0
Unselected Cases		0	.0
Total		4779	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

		Frequency	Parameter coding		
			(1)	(2)	(3)
ethnicity1	Chewa	1467	1.000	.000	.000
	Lomwe	779	.000	1.000	.000
	Ngoni	574	.000	.000	1.000
	Tumbuka	502	.000	.000	.000
	Yao	566	.000	.000	.000
	other	891	.000	.000	.000
Wealth index	Poorest	1076	1.000	.000	.000
	Poorer	1173	.000	1.000	.000
	Middle	1206	.000	.000	1.000
	Richer	865	.000	.000	.000
	Richest	459	.000	.000	.000
religion	Other christian	2033	1.000	.000	.000
	Catholic	966	.000	1.000	.000
	CCAP	680	.000	.000	1.000
	Muslim	576	.000	.000	.000
	Other	524	.000	.000	.000
Highest educational level	No education	325	1.000	.000	.000
	Primary	3686	.000	1.000	.000
	Secondary	748	.000	.000	1.000
	Higher	20	.000	.000	.000
Region	Northern	875	1.000	.000	
	Central	1606	.000	1.000	
	Southern	2298	.000	.000	
Literacy	Able to read whole sentence	3409	1.000		
	Cannot read/No card/Blind/Others	1370	.000		
Marital status	Married/living together	3832	1.000		
	Never married/widowed/not living together/divorced	947	.000		
Age 5-year groups	15-19	1591	1.000		
	20-24	3188	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
ethnicity1	Chewa	.000	.000
	Lomwe	.000	.000
	Ngoni	.000	.000
	Tumbuka	1.000	.000
	Yao	.000	1.000
	Other	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
religion	other christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Other	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/No card/Blind/Others		
Marital status	Married/living together		
	Never married/widowed/not living together/divorced		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Last intercourse condom Yes	Predicted: Last intercourse condom No	Percentage Correct
Step 0	Last intercourse condom	Yes	0	486	.0
		No	0	4110	100.0
	Overall Percentage				89.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	2.135	.048	1980.875	1	.000	8.455

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	101.829	1	.000
		V024	31.830	2	.000
		V024(1)	24.713	1	.000
		V024(2)	16.919	1	.000
		V106	117.474	3	.000
		V106(1)	19.355	1	.000
		V106(2)	32.052	1	.000
		V106(3)	85.455	1	.000
		V190	80.242	4	.000
		V190(1)	8.868	1	.003
		V190(2)	4.908	1	.027
		V190(3)	3.350	1	.067
		V190(4)	1.034	1	.309
		Lit_acy(1)	47.949	1	.000
		relig_ion	33.725	4	.000
		relig_ion(1)	3.706	1	.054
		relig_ion(2)	.309	1	.578
		relig_ion(3)	28.335	1	.000
		relig_ion(4)	8.001	1	.005
		marital_status(1)	501.618	1	.000
		ethn_cit	31.945	5	.000
		ethn_cit(1)	25.873	1	.000
		ethn_cit(2)	1.769	1	.183
		ethn_cit(3)	4.294	1	.038
		ethn_cit(4)	5.010	1	.025
		ethn_cit(5)	.329	1	.566
	Overall Statistics		650.115	21	.000

Block 1: Method = Enter

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2559.892[a]	.111	.227

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	542.845	21	.000
	Block	542.845	21	.000
	Model	542.845	21	.000

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted: Last intercourse condom Yes	Predicted: Last intercourse condom No	Predicted: Percentage Correct
Step 1	Last intercourse condom	Yes	47	439	9.7
		No	39	4070	99.0
	Overall Percentage				89.6

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	-.495	.111	19.837	1	.000	.610
	V024			6.355	2	.042	
	V024(1)	-.511	.209	5.946	1	.015	.600
	V024(2)	-.012	.171	.005	1	.942	.988
	V106			17.754	3	.000	
	V106(1)	1.461	.625	5.455	1	.020	4.309
	V106(2)	1.214	.543	4.992	1	.025	3.367
	V106(3)	.691	.541	1.636	1	.201	1.997
	V190			9.573	4	.048	
	V190(1)	.556	.191	8.501	1	.004	1.744
	V190(2)	.241	.182	1.767	1	.184	1.273
	V190(3)	.372	.178	4.388	1	.036	1.451
	V190(4)	.330	.176	3.495	1	.062	1.390
	Lit_acy(1)	-.321	.154	4.367	1	.037	.725
	relig_ion			18.654	4	.001	
	relig_ion(1)	-.316	.201	2.476	1	.116	.729
	relig_ion(2)	-.189	.213	.785	1	.376	.828
	relig_ion(3)	-.557	.216	6.643	1	.010	.573
	relig_ion(4)	.565	.301	3.524	1	.061	1.760
	marital_status(1)	1.833	.113	263.258	1	.000	6.255
	ethn_cit			11.195	5	.048	
	ethn_cit(1)	.455	.210	4.698	1	.030	1.577
	ethn_cit(2)	.140	.195	.515	1	.473	1.150
	ethn_cit(3)	.096	.219	.190	1	.663	1.100
	ethn_cit(4)	.321	.230	1.951	1	.162	1.378
	ethn_cit(5)	-.309	.273	1.276	1	.259	.734
	Constant	.052	.578	.008	1	.928	1.053

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	V013(1)	.491	.758
	V024		
	V024(1)	.398	.905
	V024(2)	.707	1.381
	V106		
	V106(1)	1.265	14.679
	V106(2)	1.161	9.768
	V106(3)	.692	5.761
	V190		
	V190(1)	1.200	2.534
	V190(2)	.892	1.817
	V190(3)	1.024	2.054
	V190(4)	.984	1.964
	Lit_acy(1)	.537	.980
	relig_ion		
	relig_ion(1)	.492	1.081
	relig_ion(2)	.545	1.258
	relig_ion(3)	.375	.875
	relig_ion(4)	.975	3.174
	marital_status(1)	5.012	7.805
	ethn_cit		
	ethn_cit(1)	1.045	2.380
	ethn_cit(2)	.785	1.685
	ethn_cit(3)	.716	1.692
	ethn_cit(4)	.879	2.163
	ethn_cit(5)	.430	1.255
	Constant		

a. Variable(s) entered on step 1: V013, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

Non-use of condom by residence (Urban)

```
GET
  FILE='C:\Users\user\Desktop\Malawi 2010_female\Last intercourse use
condom.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
USE ALL.
COMPUTE filter_$=(V025 = 1).
VARIABLE LABELS filter_$ 'V025 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Last_condom
  /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit
  /CONTRAST (V013)=Indicator
  /CONTRAST (V024)=Indicator
  /CONTRAST (V106)=Indicator
  /CONTRAST (V190)=Indicator
  /CONTRAST (Lit_acy)=Indicator
  /CONTRAST (relig_ion)=Indicator
  /CONTRAST (marital_status)=Indicator
  /CONTRAST (ethn_cit)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		15-JUL-2015 12:26:14
Comments		
Input	Data	C:\Users\user\Desktop\Malawi 2010_female\Last intercourse use condom.sav
	Active Dataset	DataSet1
	Filter	V025 = 1 (FILTER)
	Weight	wt
	Split File	<none>
	N of Rows in Working Data File	704
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Last_condom /METHOD=ENTER V013 V024 V106 V190 Lit_acy relig_ion marital_status ethn_cit /CONTRAST (V013)=Indicator /CONTRAST (V024)=Indicator /CONTRAST (V106)=Indicator /CONTRAST (V190)=Indicator /CONTRAST (Lit_acy)=Indicator /CONTRAST (relig_ion)=Indicator /CONTRAST (marital_status)=Indicator /CONTRAST (ethn_cit)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.14
	Elapsed Time	00:00:00.13

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	704	100.0
	Missing Cases	0	.0
	Total	704	100.0
Unselected Cases		0	.0
Total		704	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	(2)	(3)
ethnicity1	Chewa	152	1.000	.000	.000
	Lomwe	132	.000	1.000	.000
	Ngoni	127	.000	.000	1.000
	Tumbuka	80	.000	.000	.000
	Yao	97	.000	.000	.000
	other	116	.000	.000	.000
Wealth index	Poorest	23	1.000	.000	.000
	Poorer	39	.000	1.000	.000
	Middle	55	.000	.000	1.000
	Richer	156	.000	.000	.000
	Richest	431	.000	.000	.000
religion	other christian	276	1.000	.000	.000
	Catholic	130	.000	1.000	.000
	CCAP	137	.000	.000	1.000
	Muslim	79	.000	.000	.000
	Other	82	.000	.000	.000
Highest educational level	No education	24	1.000	.000	.000
	Primary	331	.000	1.000	.000
	Secondary	307	.000	.000	1.000
	Higher	42	.000	.000	.000
Region	Northern	119	1.000	.000	
	Central	216	.000	1.000	
	Southern	369	.000	.000	
Literacy	Able to read whole sentence	593	1.000		
	Cannot read/No card/Blind/Others	111	.000		
Marital status	Married/living together	480	1.000		
	Never married/widowed/not living together/divorced	224	.000		
Age 5-year groups	15-19	215	1.000		
	20-24	489	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
ethnicity1	Chewa	.000	.000
	Lomwe	.000	.000
	Ngoni	.000	.000
	Tumbuka	1.000	.000
	Yao	.000	1.000
	Other	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
religion	other christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Other	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/No card/Blind/Others		
Marital status	Married/living together		
	Never married/widowed/not living together/divorced		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Last intercourse condom Yes	Predicted: Last intercourse condom No	Percentage Correct
Step 0	Last intercourse condom	Yes	0	225	.0
		No	0	831	100.0
	Overall Percentage				78.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	1.306	.075	302.153	1	.000	3.693

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	V013(1)	32.218	1	.000
		V024	3.685	2	.158
		V024(1)	3.681	1	.055
		V024(2)	.254	1	.615
		V106	117.345	3	.000
		V106(1)	7.154	1	.007
		V106(2)	47.496	1	.000
		V106(3)	12.657	1	.000
		V190	60.845	4	.000
		V190(1)	6.604	1	.010
		V190(2)	10.563	1	.001
		V190(3)	14.740	1	.000
		V190(4)	12.813	1	.000
		Lit_acy(1)	18.199	1	.000
		relig_ion	27.370	4	.000
		relig_ion(1)	17.962	1	.000
		relig_ion(2)	13.559	1	.000
		relig_ion(3)	.742	1	.389
		relig_ion(4)	.768	1	.381
		marital_status(1)	286.837	1	.000
		ethn_cit	15.305	5	.009
		ethn_cit(1)	10.819	1	.001
		ethn_cit(2)	1.436	1	.231
		ethn_cit(3)	4.065	1	.044
		ethn_cit(4)	.225	1	.635
		ethn_cit(5)	1.825	1	.177
	Overall Statistics		369.858	21	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	374.137	21	.000
	Block	374.137	21	.000
	Model	374.137	21	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	719.646[a]	.298	.463

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table

	Observed		Predicted		
			Last intercourse condom		Percentage Correct
			Yes	No	
Step 1	Last intercourse condom	Yes	117	108	52.0
		No	57	774	93.2
	Overall Percentage				84.4

The cut value is .500

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	V013(1)	-.445	.213	4.376	1	.036	.641
	V024			5.767	2	.056	
	V024(1)	-.072	.524	.019	1	.891	.930
	V024(2)	-.534	.224	5.705	1	.017	.586
	V106			17.457	3	.001	
	V106(1)	2.780	1.121	6.145	1	.013	16.114
	V106(2)	1.599	.417	14.713	1	.000	4.950
	V106(3)	1.408	.373	14.244	1	.000	4.089
	V190			23.453	4	.000	
	V190(1)	2.926	1.103	7.037	1	.008	18.657
	V190(2)	2.146	.909	5.572	1	.018	8.551
	V190(3)	1.848	.614	9.070	1	.003	6.346
	V190(4)	.708	.270	6.895	1	.009	2.030
	Lit_acy(1)	.399	.362	1.213	1	.271	1.491
	relig_ion			12.590	4	.013	
	relig_ion(1)	.487	.336	2.099	1	.147	1.627
	relig_ion(2)	-.422	.360	1.371	1	.242	.656
	relig_ion(3)	.405	.367	1.222	1	.269	1.499
	relig_ion(4)	.443	.440	1.017	1	.313	1.558
	marital_status(1)	2.547	.216	138.964	1	.000	12.765
	ethn_cit			11.923	5	.036	
	ethn_cit(1)	.422	.388	1.183	1	.277	1.525
	ethn_cit(2)	-.258	.377	.469	1	.493	.773
	ethn_cit(3)	.181	.383	.223	1	.637	1.199
	ethn_cit(4)	-.110	.480	.052	1	.819	.896
	ethn_cit(5)	-.805	.435	3.424	1	.064	.447
	Constant	-1.949	.654	8.885	1	.003	.142

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	V013(1)	.422	.972
	V024		
	V024(1)	.333	2.597
	V024(2)	.378	.909
	V106		
	V106(1)	1.790	145.102
	V106(2)	2.186	11.209
	V106(3)	1.968	8.496
	V190		
	V190(1)	2.147	162.095
	V190(2)	1.439	50.802
	V190(3)	1.906	21.121
	V190(4)	1.197	3.443
	Lit_acy(1)	.733	3.033
	relig_ion		
	relig_ion(1)	.842	3.145
	relig_ion(2)	.324	1.329
	relig_ion(3)	.731	3.076
	relig_ion(4)	.658	3.687
	marital_status(1)	8.358	19.494
	ethn_cit		
	ethn_cit(1)	.713	3.264
	ethn_cit(2)	.369	1.617
	ethn_cit(3)	.565	2.542
	ethn_cit(4)	.350	2.297
	ethn_cit(5)	.191	1.049
	Constant		

a. Variable(s) entered on step 1: V013, V024, V106, V190, Lit_acy, relig_ion, marital_status, ethn_cit.

MALE RESPONDENTS

Early sexual debut by background characteristics

```
LOGISTIC REGRESSION VARIABLES Age_firstsex
  /METHOD=ENTER MV013 MV025 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (MV025)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 16:26:13
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Early sexual debut.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	1371
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Age_firstsex /METHOD=ENTER MV013 MV025 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (MV025)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.16
	Elapsed Time	00:00:00.19

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	1371	100.0
	Missing Cases	0	.0
	Total	1371	100.0
Unselected Cases		0	.0
Total		1371	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
16 and above	0
Before 16	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	(2)	(3)	(4)
Ethnicity	Chewa	391	1.000	.000	.000	.000
	Lomwe	241	.000	1.000	.000	.000
	Tumbuka	117	.000	.000	1.000	.000
	Ngoni	184	.000	.000	.000	1.000
	Yao	163	.000	.000	.000	.000
	Others	275	.000	.000	.000	.000
Religion	Other Christian	483	1.000	.000	.000	.000
	Catholic	272	.000	1.000	.000	.000
	CCAP	239	.000	.000	1.000	.000
	Muslim	177	.000	.000	.000	1.000
	Others	200	.000	.000	.000	.000
Wealth index	Poorest	232	1.000	.000	.000	.000
	Poorer	288	.000	1.000	.000	.000
	Middle	276	.000	.000	1.000	.000
	Richer	289	.000	.000	.000	1.000
	Richest	286	.000	.000	.000	.000
Highest educational level	No education	44	1.000	.000	.000	
	Primary	892	.000	1.000	.000	
	Secondary	413	.000	.000	1.000	
	Higher	22	.000	.000	.000	
Literacy	Able to read whole sentence	992	1.000	.000		
	Cannot read/ No card/Blind/Others	275	.000	1.000		
	Able to read part of sentence	104	.000	.000		
Region	Northern	206	1.000	.000		
	Central	502	.000	1.000		
	Southern	663	.000	.000		
Type of place of residence	Urban	194	1.000			
	Rural	1177	.000			
Marital status	Married/Living together	458	1.000			
	Never Married/Not Living together	913	.000			
Age 5-year groups	15-19	561	1.000			
	20-24	810	.000			

Block 0: Beginning Block

Classification Table[a,b]

	Observed		Predicted		
			Age at first intercourse		Percentage Correct
			16 and above	Before 16	
Step 0	Age at first intercourse	16 and above	726	0	100.0
		Before 16	679	0	.0
	Overall Percentage				51.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.067	.053	1.595	1	.207	.935

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	158.914	1	.000
		MV025(1)	5.673	1	.017
		Relig_ion	5.821	4	.213
		Relig_ion(1)	.261	1	.610
		Relig_ion(2)	.468	1	.494
		Relig_ion(3)	1.044	1	.307
		Relig_ion(4)	4.209	1	.040
		MV024	8.154	2	.017
		MV024(1)	1.165	1	.281
		MV024(2)	5.007	1	.025
		MV106	41.046	3	.000
		MV106(1)	6.139	1	.013
		MV106(2)	30.768	1	.000
		MV106(3)	12.902	1	.000
		MV190	14.638	4	.006
		MV190(1)	.694	1	.405
		MV190(2)	7.453	1	.006
		MV190(3)	2.228	1	.136
		MV190(4)	.152	1	.697
		Lit	6.929	2	.031
		Lit(1)	3.329	1	.068
		Lit(2)	6.817	1	.009
		Marital_status(1)	66.820	1	.000
		Ethni_city	15.881	5	.007
		Ethni_city(1)	2.647	1	.104
		Ethni_city(2)	5.100	1	.024
		Ethni_city(3)	1.221	1	.269
		Ethni_city(4)	1.813	1	.178
		Ethni_city(5)	7.583	1	.006
	Overall Statistics		227.106	23	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	241.436	23	.000
	Block	241.436	23	.000
	Model	241.436	23	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1704.237[a]	.158	.211

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)		
Step 1[a]	MV013(1)	1.206	.138	76.217	1	.000	3.340		
	MV025(1)	.064	.183	.123	1	.726	1.066		
	Relig_ion			1.399	4	.844			
	Relig_ion(1)	.060	.201	.089	1	.765	1.062		
	Relig_ion(2)	.144	.220	.425	1	.514	1.154		
	Relig_ion(3)	.228	.225	1.031	1	.310	1.256		
	Relig_ion(4)	.149	.292	.258	1	.612	1.160		
	MV024			4.150	2	.126			
	MV024(1)	.059	.264	.050	1	.823	1.061		
	MV024(2)	-.309	.164	3.520	1	.061	.735		
	MV106			21.656	3	.000			
	MV106(1)	.491	.695	.500	1	.480	1.634		
	MV106(2)	1.701	.592	8.268	1	.004	5.480		
	MV106(3)	1.343	.583	5.313	1	.021	3.832		
	MV190			13.946	4	.007			
	MV190(1)	.274	.225	1.491	1	.222	1.315		
	MV190(2)	.751	.215	12.155	1	.000	2.120		
	MV190(3)	.454	.214	4.501	1	.034	1.574		
	MV190(4)	.258	.197	1.725	1	.189	1.295		
	Lit			8.292	2	.016			
	Lit(1)	.306	.215	2.021	1	.155	1.358		
	Lit(2)	.666	.241	7.619	1	.006	1.946		
	Marital_status(1)	-.515	.143	12.957	1	.000	.597		
	Ethni_city			5.657	5	.341			
	Ethni_city(1)	.142	.224	.405	1	.524	1.153		
	Ethni_city(2)	.455	.216	4.439	1	.035	1.576		
	Ethni_city(3)	.007	.286	.001	1	.980	1.007		
	Ethni_city(4)	.067	.243	.076	1	.782	1.070		
	Ethni_city(5)	.340	.286	1.411	1	.235	1.405		
	Constant	-2.767	.675	16.800	1	.000	.063		

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted: Age at first intercourse - 16 and above	Predicted: Age at first intercourse - Before 16	Percentage Correct
Step 1	Age at first intercourse	16 and above	518	208	71.4
		Before 16	253	426	62.7
	Overall Percentage				67.2

a. The cut value is .500

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	2.548	4.379
	MV025(1)	.744	1.527
	Relig_ion		
	Relig_ion(1)	.717	1.573
	Relig_ion(2)	.750	1.778
	Relig_ion(3)	.809	1.951
	Relig_ion(4)	.654	2.058
	MV024		
	MV024(1)	.633	1.780
	MV024(2)	.532	1.014
	MV106		
	MV106(1)	.419	6.382
	MV106(2)	1.719	17.473
	MV106(3)	1.223	12.011
	MV190		
	MV190(1)	.847	2.043
	MV190(2)	1.389	3.233
	MV190(3)	1.035	2.395
	MV190(4)	.881	1.904
	Lit		
	Lit(1)	.890	2.072
	Lit(2)	1.213	3.123
	Marital_status(1)	.451	.791
	Ethni_city		
	Ethni_city(1)	.744	1.788
	Ethni_city(2)	1.032	2.406
	Ethni_city(3)	.575	1.765
	Ethni_city(4)	.664	1.723
	Ethni_city(5)	.802	2.461
	Constant		

a. Variable(s) entered on step 1: MV013, MV025, Relig_ion, MV024, MV106, MV190, Lit, Marital_status, Ethni_city.

Early sexual debut by residence (rural)

```
USE ALL.
COMPUTE filter_$=(MV025 = 2).
VARIABLE LABELS filter_$ 'MV025 = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Age_firstsex
  /METHOD=ENTER MV013 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 16:30:33
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Early sexual debut.sav
	Active Dataset	DataSet1
	Filter	MV025 = 2 (FILTER)
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	1177
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Age_firstsex /METHOD=ENTER MV013 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.14
	Elapsed Time	00:00:00.19

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	1177	100.0
	Missing Cases	0	.0
	Total	1177	100.0
Unselected Cases		0	.0
Total		1177	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
16 and above	0
Before 16	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	(2)	(3)
Ethnicity	Chewa	361	1.000	.000	.000
	Lomwe	200	.000	1.000	.000
	Tumbuka	101	.000	.000	1.000
	Ngoni	147	.000	.000	.000
	Yao	132	.000	.000	.000
	Others	236	.000	.000	.000
Religion	Other Christian	427	1.000	.000	.000
	Catholic	240	.000	1.000	.000
	CCAP	184	.000	.000	1.000
	Muslim	150	.000	.000	.000
	Others	176	.000	.000	.000
Wealth index	Poorest	226	1.000	.000	.000
	Poorer	282	.000	1.000	.000
	Middle	265	.000	.000	1.000
	Richer	253	.000	.000	.000
	Richest	151	.000	.000	.000
Highest educational level	No education	40	1.000	.000	.000
	Primary	830	.000	1.000	.000
	Secondary	301	.000	.000	1.000
	Higher	6	.000	.000	.000
Literacy	Able to read whole sentence	828	1.000	.000	
	Cannot read/ No card/Blind/Others	255	.000	1.000	
	Able to read part of sentence	94	.000	.000	
Region	Northern	190	1.000	.000	
	Central	447	.000	1.000	
	Southern	540	.000	.000	
Marital status	Married/Living together	418	1.000		
	Never Married/Not Living together	759	.000		
Age 5-year groups	15-19	486	1.000		
	20-24	691	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
Ethnicity	Chewa	.000	.000
	Lomwe	.000	.000
	Tumbuka	.000	.000
	Ngoni	1.000	.000
	Yao	.000	1.000
	Others	.000	.000
Religion	Other Christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Others	.000	
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Literacy	Able to read whole sentence		
	Cannot read/ No card/Blind/Others		
	Able to read part of sentence		
Region	Northern		
	Central		
	Southern		
Marital status	Married/Living together		
	Never Married/Not Living together		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

	Observed		Predicted		
			Age at first intercourse		Percentage Correct
			16 and above	Before 16	
Step 0	Age at first intercourse	16 and above	561	0	100.0
		Before 16	559	0	.0
	Overall Percentage				50.1

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.003	.060	.003	1	.955	.997

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	122.685	1	.000
		Relig_ion	4.269	4	.371
		Relig_ion(1)	.068	1	.794
		Relig_ion(2)	.547	1	.460
		Relig_ion(3)	.004	1	.950
		Relig_ion(4)	3.806	1	.051
		MV024	8.987	2	.011
		MV024(1)	1.565	1	.211
		MV024(2)	4.773	1	.029
		MV106	16.662	3	.001
		MV106(1)	4.501	1	.034
		MV106(2)	15.299	1	.000
		MV106(3)	9.253	1	.002
		MV190	6.914	4	.141
		MV190(1)	3.027	1	.082
		MV190(2)	3.340	1	.068
		MV190(3)	.897	1	.343
		MV190(4)	.051	1	.822
		Lit	2.211	2	.331
		Lit(1)	.256	1	.613
		Lit(2)	1.628	1	.202
		Marital_status(1)	73.625	1	.000
		Ethni_city	16.387	5	.006
		Ethni_city(1)	6.649	1	.010
		Ethni_city(2)	5.311	1	.021
		Ethni_city(3)	.839	1	.360
		Ethni_city(4)	2.251	1	.134
		Ethni_city(5)	3.616	1	.057
	Overall Statistics		168.699	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	177.709	22	.000
	Block	177.709	22	.000
	Model	177.709	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1375.183[a]	.147	.196

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted		
			Age at first intercourse		Percentage Correct
			16 and above	Before 16	
Step 1	Age at first intercourse	16 and above	393	168	70.1
		Before 16	211	348	62.2
	Overall Percentage				66.2

a. The cut value is .500

Variables not in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	1.108	.157	50.052	1	.000	3.029
	Relig_ion			1.270	4	.866	
	Relig_ion(1)	.035	.224	.024	1	.877	1.035
	Relig_ion(2)	.122	.243	.252	1	.616	1.130
	Relig_ion(3)	.130	.255	.260	1	.610	1.139
	Relig_ion(4)	.314	.330	.906	1	.341	1.369
	MV024			3.806	2	.149	
	MV024(1)	.064	.293	.048	1	.826	1.067
	MV024(2)	-.346	.198	3.067	1	.080	.707
	MV106			9.049	3	.029	
	MV106(1)	-.604	.991	.371	1	.542	.547
	MV106(2)	.334	.901	.137	1	.711	1.396
	MV106(3)	-.007	.896	.000	1	.993	.993
	MV190			10.407	4	.034	
	MV190(1)	.237	.251	.891	1	.345	1.268
	MV190(2)	.694	.243	8.178	1	.004	2.001
	MV190(3)	.452	.244	3.425	1	.064	1.571
	MV190(4)	.297	.241	1.514	1	.218	1.346
	Lit			4.751	2	.093	
	Lit(1)	.311	.230	1.834	1	.176	1.365
	Lit(2)	.555	.257	4.659	1	.031	1.743
	Marital_status(1)	-.623	.157	15.846	1	.000	.536
	Ethni_city			4.989	5	.417	
	Ethni_city(1)	.195	.253	.596	1	.440	1.215
	Ethni_city(2)	.493	.247	3.995	1	.046	1.638
	Ethni_city(3)	.157	.324	.236	1	.627	1.170
	Ethni_city(4)	.429	.289	2.205	1	.138	1.536
	Ethni_city(5)	.246	.325	.572	1	.449	1.279
	Constant	-1.347	.923	2.133	1	.144	.260

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	2.228	4.117
	Relig_ion		
	Relig_ion(1)	.668	1.606
	Relig_ion(2)	.702	1.818
	Relig_ion(3)	.691	1.879
	Relig_ion(4)	.717	2.611
	MV024		
	MV024(1)	.601	1.894
	MV024(2)	.480	1.042
	MV106		
	MV106(1)	.078	3.816
	MV106(2)	.239	8.158
	MV106(3)	.171	5.750
	MV190		
	MV190(1)	.775	2.074
	MV190(2)	1.244	3.219
	MV190(3)	.974	2.535
	MV190(4)	.839	2.160
	Lit		
	Lit(1)	.870	2.141
	Lit(2)	1.052	2.886
	Marital_status(1)	.395	.729
	Ethni_city		
	Ethni_city(1)	.741	1.995
	Ethni_city(2)	1.010	2.657
	Ethni_city(3)	.621	2.207
	Ethni_city(4)	.872	2.707
	Ethni_city(5)	.676	2.421
	Constant		

a. Variable(s) entered on step 1: MV013, Relig_ion, MV024, MV106, MV190, Lit, Marital_status, Ethni_city.

Early sexual debut by residence (urban)

```
USE ALL.
COMPUTE filter_$=(MV025 = 1).
VARIABLE LABELS filter_$ 'MV025 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Age_firstsex
  /METHOD=ENTER MV013 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 16:28:39
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Early sexual debut.sav
	Active Dataset	DataSet1
	Filter	MV025 = 1 (FILTER)
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	194
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Age_firstsex /METHOD=ENTER MV013 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.11
	Elapsed Time	00:00:00.27

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	194	100.0
	Missing Cases	0	.0
	Total	194	100.0
Unselected Cases		0	.0
Total		194	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
16 and above	0
Before 16	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	(2)	(3)		
Ethnicity	Chewa	30	1.000	.000	.000		
	Lomwe	41	.000	1.000	.000		
	Tumbuka	16	.000	.000	1.000		
	Ngoni	37	.000	.000	.000		
	Yao	31	.000	.000	.000		
	Others	39	.000	.000	.000		
Religion	Other Christian	56	1.000	.000	.000		
	Catholic	32	.000	1.000	.000		
	CCAP	55	.000	.000	1.000		
	Muslim	27	.000	.000	.000		
	Others	24	.000	.000	.000		
Wealth index	Poorest	6	1.000	.000	.000		
	Poorer	6	.000	1.000	.000		
	Middle	11	.000	.000	1.000		
	Richer	36	.000	.000	.000		
	Richest	135	.000	.000	.000		
Highest educational level	No education	4	1.000	.000	.000		
	Primary	62	.000	1.000	.000		
	Secondary	112	.000	.000	1.000		
	Higher	16	.000	.000	.000		
Literacy	Able to read whole sentence	164	1.000	.000			
	Cannot read/ No card/Blind/Others	20	.000	1.000			
	Able to read part of sentence	10	.000	.000			
Region	Northern	16	1.000	.000			
	Central	55	.000	1.000			
	Southern	123	.000	.000			
Marital status	Married/Living together	40	1.000				
	Never Married/Not Living together	154	.000				
Age 5-year groups	15-19	75	1.000				
	20-24	119	.000				

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
Ethnicity	Chewa	.000	.000
	Lomwe	.000	.000
	Tumbuka	.000	.000
	Ngoni	1.000	.000
	Yao	.000	1.000
	Others	.000	.000
Religion	Other Christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Others	.000	
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Literacy	Able to read whole sentence		
	Cannot read/ No card/Blind/Others		
	Able to read part of sentence		
Region	Northern		
	Central		
	Southern		
Marital status	Married/Living together		
	Never Married/Not Living together		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Age at first intercourse: 16 and above	Predicted: Age at first intercourse: Before 16	Predicted: Percentage Correct
Step 0	Age at first intercourse	16 and above	165	0	100.0
		Before 16	120	0	.0
	Overall Percentage				58.0

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.322	.120	7.196	1	.007	.725

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	36.830	1	.000
		Relig_ion	3.995	4	.407
		Relig_ion(1)	2.242	1	.134
		Relig_ion(2)	.315	1	.575
		Relig_ion(3)	1.852	1	.174
		Relig_ion(4)	.629	1	.428
		MV024	1.697	2	.428
		MV024(1)	.435	1	.510
		MV024(2)	1.076	1	.300
		MV106	21.029	3	.000
		MV106(1)	1.725	1	.189
		MV106(2)	11.824	1	.001
		MV106(3)	.789	1	.374
		MV190	10.803	4	.029
		MV190(1)	3.481	1	.062
		MV190(2)	6.091	1	.014
		MV190(3)	.547	1	.459
		MV190(4)	.340	1	.560
		Lit	11.443	2	.003
		Lit(1)	8.101	1	.004
		Lit(2)	11.309	1	.001
		Marital_status(1)	2.626	1	.105
		Ethni_city	23.016	5	.000
		Ethni_city(1)	1.103	1	.294
		Ethni_city(2)	.442	1	.506
		Ethni_city(3)	.721	1	.396
		Ethni_city(4)	19.204	1	.000
		Ethni_city(5)	6.465	1	.011
	Overall Statistics		81.207	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	93.541	22	.000
	Block	93.541	22	.000
	Model	93.541	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	293.542[a]	.280	.377

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)		
Step 1[a]	MV013(1)	1.548	.337	21.050	1	.000	4.703		
	Relig_ion			5.316	4	.256			
	Relig_ion(1)	.478	.520	.845	1	.358	1.613		
	Relig_ion(2)	.354	.626	.320	1	.572	1.425		
	Relig_ion(3)	.968	.543	3.183	1	.074	2.632		
	Relig_ion(4)	-.469	.752	.390	1	.532	.625		
	MV024			2.001	2	.368			
	MV024(1)	-.602	.958	.395	1	.530	.548		
	MV024(2)	-.472	.356	1.751	1	.186	.624		
	MV106			10.965	3	.012			
	MV106(1)	-1.107	1.803	.377	1	.539	.331		
	MV106(2)	2.248	.902	6.210	1	.013	9.470		
	MV106(3)	2.155	.860	6.275	1	.012	8.627		
	MV190			6.573	4	.160			
	MV190(1)	1.160	1.189	.952	1	.329	3.189		
	MV190(2)	2.832	1.177	5.786	1	.016	16.978		
	MV190(3)	.073	.754	.009	1	.923	1.076		
	MV190(4)	.078	.408	.037	1	.848	1.081		
	Lit			5.233	2	.073			
	Lit(1)	.409	1.052	.151	1	.697	1.505		
	Lit(2)	1.840	1.144	2.586	1	.108	6.297		
	Marital_status(1)	.150	.414	.131	1	.717	1.162		
	Ethni_city			11.642	5	.040			
	Ethni_city(1)	.665	.550	1.463	1	.227	1.945		
	Ethni_city(2)	.355	.496	.513	1	.474	1.426		
	Ethni_city(3)	-.470	.706	.443	1	.505	.625		
	Ethni_city(4)	-.860	.553	2.421	1	.120	.423		
	Ethni_city(5)	1.115	.731	2.326	1	.127	3.049		
	Constant	-4.101	1.503	7.448	1	.006	.017		

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Age at first intercourse		Percentage Correct
			16 and above	Before 16	
Step 1	Age at first intercourse	16 and above	132	33	80.0
		Before 16	37	82	68.9
	Overall Percentage				75.3

a. The cut value is .500

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	2.427	9.112
	Relig_ion		
	Relig_ion(1)	.582	4.466
	Relig_ion(2)	.418	4.857
	Relig_ion(3)	.909	7.623
	Relig_ion(4)	.143	2.731
	MV024		
	MV024(1)	.084	3.582
	MV024(2)	.310	1.255
	MV106		
	MV106(1)	.010	11.330
	MV106(2)	1.616	55.497
	MV106(3)	1.598	46.572
	MV190		
	MV190(1)	.310	32.781
	MV190(2)	1.689	170.619
	MV190(3)	.246	4.712
	MV190(4)	.486	2.407
	Lit		
	Lit(1)	.192	11.819
	Lit(2)	.669	59.309
	Marital_status(1)	.516	2.615
	Ethni_city		
	Ethni_city(1)	.662	5.719
	Ethni_city(2)	.540	3.770
	Ethni_city(3)	.157	2.493
	Ethni_city(4)	.143	1.250
	Ethni_city(5)	.728	12.774
	Constant		

a. Variable(s) entered on step 1: MV013, Relig_ion, MV024, MV106, MV190, Lit, Marital_status, Ethni_city.

Inconsistent condom use by background characteristics

```
LOGISTIC REGRESSION VARIABLES Condom_consist
  /METHOD=ENTER MV013 MV025 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (MV025)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 17:08:54
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\paper_inconsistent.SAV (Male data).sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	529
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Condom_consist /METHOD=ENTER MV013 MV025 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (MV025)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.14

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	529	100.0
	Missing Cases	0	.0
	Total	529	100.0
Unselected Cases		0	.0
Total		529	100.0

Categorical Variables Codings

			Parameter coding			
		Frequency	(1)	(2)	(3)	(4)
Ethnicity	Chewa	141	1.000	.000	.000	.000
	Lomwe	69	.000	1.000	.000	.000
	Tumbuka	60	.000	.000	1.000	.000
	Ngoni	87	.000	.000	.000	1.000
	Yao	55	.000	.000	.000	.000
	Others	117	.000	.000	.000	.000
Wealth index	Poorest	69	1.000	.000	.000	.000
	Poorer	89	.000	1.000	.000	.000
	Middle	94	.000	.000	1.000	.000
	Richer	126	.000	.000	.000	1.000
	Richest	151	.000	.000	.000	.000
Religion	Other Christian	166	1.000	.000	.000	.000
	Catholic	118	.000	1.000	.000	.000
	CCAP	108	.000	.000	1.000	.000
	Muslim	54	.000	.000	.000	1.000
	Others	83	.000	.000	.000	.000
Highest educational level	No education	9	1.000	.000	.000	
	Primary	293	.000	1.000	.000	
	Secondary	216	.000	.000	1.000	
	Higher	11	.000	.000	.000	
Literacy	Able to read whole sentence	410	1.000	.000		
	Cannot read/ No card/Blind/Others	84	.000	1.000		
	Able to read part of sentence	35	.000	.000		
Region	Northern	108	1.000	.000		
	Central	201	.000	1.000		
	Southern	220	.000	.000		
Marital status	Married/Living together	67	1.000			
	Never Married/Not Living together	462	.000			
Type of place of residence	Urban	93	1.000			
	Rural	436	.000			
Age 5-year groups	15-19	236	1.000			
	20-24	293	.000			

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

		Parameter coding
		(5)
Ethnicity	Chewa	.000
	Lomwe	.000
	Tumbuka	.000
	Ngoni	.000
	Yao	1.000
	Others	.000
Wealth index	Poorest	
	Poorer	
	Middle	
	Richer	
	Richest	
Religion	Other Christian	
	Catholic	
	CCAP	
	Muslim	
	Others	
Highest educational level	No education	
	Primary	
	Secondary	
	Higher	
Literacy	Able to read whole sentence	
	Cannot read/ No card/Blind/Others	
	Able to read part of sentence	
Region	Northern	
	Central	
	Southern	
Marital status	Married/Living together	
	Never Married/Not Living together	
Type of place of residence	Urban	
	Rural	
Age 5-year groups	15-19	
	20-24	

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Percentage Correct
Step 0	Condom use consistent	Yes	364	0	100.0
		No	147	0	.0
	Overall Percentage				71.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.909	.098	86.513	1	.000	.403

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	.789	1	.375
		MV025(1)	1.030	1	.310
		MV024	6.333	2	.042
		MV024(1)	6.154	1	.013
		MV024(2)	1.674	1	.196
		MV106	4.048	3	.256
		MV106(1)	.470	1	.493
		MV106(2)	.405	1	.524
		MV106(3)	.020	1	.887
		MV190	7.108	4	.130
		MV190(1)	2.192	1	.139
		MV190(2)	3.803	1	.051
		MV190(3)	1.437	1	.231
		MV190(4)	.648	1	.421
		Lit	.504	2	.777
		Lit(1)	.499	1	.480
		Lit(2)	.265	1	.607
		Relig_ion	7.216	4	.125
		Relig_ion(1)	4.752	1	.029
		Relig_ion(2)	2.531	1	.112
		Relig_ion(3)	1.873	1	.171
		Relig_ion(4)	.521	1	.471
		Marital_status(1)	49.581	1	.000
		Ethni_city	4.824	5	.438
		Ethni_city(1)	1.944	1	.163
		Ethni_city(2)	.628	1	.428
		Ethni_city(3)	1.533	1	.216
		Ethni_city(4)	1.695	1	.193
		Ethni_city(5)	.092	1	.762
	Overall Statistics		78.252	23	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	76.987	23	.000
	Block	76.987	23	.000
	Model	76.987	23	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	535.739[a]	.140	.200

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Predicted: Percentage Correct
Step 1	Condom use consistent	Yes	344	20	94.4
		No	100	47	32.0
	Overall Percentage				76.5

a. The cut value is .500

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	.532	.248	4.599	1	.032	1.703
	MV025(1)	-.431	.299	2.078	1	.149	.650
	MV024			1.990	2	.370	
	MV024(1)	.466	.423	1.211	1	.271	1.593
	MV024(2)	-.145	.294	.243	1	.622	.865
	MV106			4.598	3	.204	
	MV106(1)	-1.575	1.114	1.997	1	.158	.207
	MV106(2)	-1.403	.678	4.284	1	.038	.246
	MV106(3)	-1.348	.640	4.432	1	.035	.260
	MV190			11.761	4	.019	
	MV190(1)	-.183	.394	.215	1	.643	.833
	MV190(2)	-1.257	.423	8.844	1	.003	.285
	MV190(3)	-.847	.387	4.791	1	.029	.429
	MV190(4)	-.328	.322	1.039	1	.308	.721
	Lit			.793	2	.673	
	Lit(1)	.124	.472	.069	1	.793	1.132
	Lit(2)	.394	.520	.574	1	.449	1.482
	Relig_ion			7.057	4	.133	
	Relig_ion(1)	.079	.344	.053	1	.818	1.083
	Relig_ion(2)	-.413	.384	1.156	1	.282	.662
	Relig_ion(3)	-.670	.389	2.966	1	.085	.512
	Relig_ion(4)	.125	.562	.049	1	.824	1.133
	Marital_status(1)	2.270	.354	41.039	1	.000	9.681
	Ethni_city			3.783	5	.581	
	Ethni_city(1)	.675	.434	2.417	1	.120	1.964
	Ethni_city(2)	.216	.448	.233	1	.630	1.241
	Ethni_city(3)	.386	.449	.741	1	.389	1.471
	Ethni_city(4)	.760	.437	3.028	1	.082	2.138
	Ethni_city(5)	.311	.570	.298	1	.585	1.365
	Constant	-.075	.883	.007	1	.933	.928

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	1.047	2.769
	MV025(1)	.361	1.168
	MV024		
	MV024(1)	.695	3.652
	MV024(2)	.486	1.539
	MV106		
	MV106(1)	.023	1.839
	MV106(2)	.065	.928
	MV106(3)	.074	.911
	MV190		
	MV190(1)	.385	1.803
	MV190(2)	.124	.652
	MV190(3)	.201	.915
	MV190(4)	.384	1.353
	Lit		
	Lit(1)	.449	2.856
	Lit(2)	.535	4.106
	Relig_ion		
	Relig_ion(1)	.552	2.125
	Relig_ion(2)	.311	1.405
	Relig_ion(3)	.239	1.097
	Relig_ion(4)	.376	3.410
	Marital_status(1)	4.834	19.389
	Ethni_city		
	Ethni_city(1)	.839	4.597
	Ethni_city(2)	.516	2.985
	Ethni_city(3)	.611	3.546
	Ethni_city(4)	.909	5.029
	Ethni_city(5)	.447	4.171
	Constant		

a. Variable(s) entered on step 1: MV013, MV025, MV024, MV106, MV190, Lit, Relig_ion, Marital_status, Ethni_city.

Inconsistent condom use residence (Rural)

```
USE ALL.
COMPUTE filter_$=(MV025 = 2).
VARIABLE LABELS filter_$ 'MV025 = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Condom_consist
  /METHOD=ENTER MV013 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5)
```

Logistic Regression

Notes

Output Created		14-JUL-2015 17:16:08
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\paper_inconsistent.SAV (Male data).sav
	Active Dataset	DataSet1
	Filter	MV025 = 2 (FILTER)
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	436
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Condom_consist /METHOD=ENTER MV013 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.11
	Elapsed Time	00:00:00.16

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	436	100.0
	Missing Cases	0	.0
	Total	436	100.0
Unselected Cases		0	.0
Total		436	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

		Frequency	Parameter coding		
			(1)	(2)	(3)
Ethnicity	Chewa	120	1.000	.000	.000
	Lomwe	55	.000	1.000	.000
	Tumbuka	50	.000	.000	1.000
	Ngoni	70	.000	.000	.000
	Yao	39	.000	.000	.000
	Others	102	.000	.000	.000
Wealth index	Poorest	67	1.000	.000	.000
	Poorer	87	.000	1.000	.000
	Middle	91	.000	.000	1.000
	Richer	110	.000	.000	.000
	Richest	81	.000	.000	.000
Religion	Other Christian	143	1.000	.000	.000
	Catholic	99	.000	1.000	.000
	CCAP	83	.000	.000	1.000
	Muslim	41	.000	.000	.000
	Others	70	.000	.000	.000
Highest educational level	No education	8	1.000	.000	.000
	Primary	265	.000	1.000	.000
	Secondary	159	.000	.000	1.000
	Higher	4	.000	.000	.000
Region	Northern	98	1.000	.000	
	Central	171	.000	1.000	
	Southern	167	.000	.000	
Literacy	Able to read whole sentence	328	1.000	.000	
	Cannot read/ No card/Blind/Others	77	.000	1.000	
	Able to read part of sentence	31	.000	.000	
Marital status	Married/Living together	62	1.000		
	Never Married/Not Living together	374	.000		
Age 5-year groups	15-19	196	1.000		
	20-24	240	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
Ethnicity	Chewa	.000	.000
	Lomwe	.000	.000
	Tumbuka	.000	.000
	Ngoni	1.000	.000
	Yao	.000	1.000
	Others	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Religion	Other Christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Others	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/ No card/Blind/Others		
	Able to read part of sentence		
Marital status	Married/Living together		
	Never Married/Not Living together		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Percentage Correct
Step 0	Condom use consistent	Yes	271	0	100.0
		No	116	0	.0
	Overall Percentage				70.1

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.854	.111	59.108	1	.000	.426

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	2.300	1	.129
		MV024	6.619	2	.037
		MV024(1)	6.504	1	.011
		MV024(2)	.642	1	.423
		MV106	3.022	3	.388
		MV106(1)	1.055	1	.304
		MV106(2)	.256	1	.613
		MV106(3)	.016	1	.899
		MV190	8.949	4	.062
		MV190(1)	1.369	1	.242
		MV190(2)	5.198	1	.023
		MV190(3)	1.248	1	.264
		MV190(4)	3.382	1	.066
		Lit	1.181	2	.554
		Lit(1)	.882	1	.348
		Lit(2)	.163	1	.686
		Relig_ion	6.264	4	.180
		Relig_ion(1)	1.711	1	.191
		Relig_ion(2)	2.249	1	.134
		Relig_ion(3)	1.417	1	.234
		Relig_ion(4)	2.519	1	.112
		Marital_status(1)	54.277	1	.000
		Ethni_city	3.058	5	.691
		Ethni_city(1)	.190	1	.663
		Ethni_city(2)	.869	1	.351
		Ethni_city(3)	.024	1	.876
		Ethni_city(4)	.117	1	.732
		Ethni_city(5)	2.293	1	.130
	Overall Statistics		79.179	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	80.366	22	.000
	Block	80.366	22	.000
	Model	80.366	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	391.523[a]	.188	.266

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Predicted: Percentage Correct
Step 1	Condom use consistent	Yes	256	15	94.5
		No	73	42	36.6
	Overall Percentage				77.2

a. The cut value is .500

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	.550	.291	3.585	1	.058	1.734
	MV024			7.908	2	.019	
	MV024(1)	1.469	.527	7.779	1	.005	4.344
	MV024(2)	.282	.390	.524	1	.469	1.326
	MV106			4.452	3	.217	
	MV106(1)	-1.911	1.420	1.810	1	.178	.148
	MV106(2)	-1.978	1.008	3.848	1	.050	.138
	MV106(3)	-2.078	.987	4.435	1	.035	.125
	MV190			10.714	4	.030	
	MV190(1)	-.131	.443	.087	1	.768	.878
	MV190(2)	-1.198	.470	6.483	1	.011	.302
	MV190(3)	-.572	.440	1.692	1	.193	.564
	MV190(4)	.072	.389	.034	1	.853	1.075
	Lit			.327	2	.849	
	Lit(1)	-.006	.508	.000	1	.990	.994
	Lit(2)	.211	.571	.137	1	.711	1.235
	Relig_ion			4.623	4	.328	
	Relig_ion(1)	-.084	.411	.042	1	.838	.919
	Relig_ion(2)	-.419	.452	.857	1	.354	.658
	Relig_ion(3)	-.822	.470	3.062	1	.080	.440
	Relig_ion(4)	-.281	.717	.153	1	.695	.755
	Marital_status(1)	2.562	.402	40.710	1	.000	12.959
	Ethni_city			6.976	5	.222	
	Ethni_city(1)	.917	.519	3.129	1	.077	2.503
	Ethni_city(2)	.427	.547	.611	1	.434	1.533
	Ethni_city(3)	-.465	.533	.760	1	.383	.628
	Ethni_city(4)	.371	.562	.435	1	.509	1.449
	Ethni_city(5)	1.063	.724	2.156	1	.142	2.895
	Constant	.157	1.150	.019	1	.891	1.170

a. Variable(s) entered on step 1: MV013, MV024, MV106, MV190, Lit, Relig_ion, Marital_status, Ethni_city.

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	.981	3.064
	MV024		
	MV024(1)	1.548	12.196
	MV024(2)	.618	2.845
	MV106		
	MV106(1)	.009	2.394
	MV106(2)	.019	.998
	MV106(3)	.018	.866
	MV190		
	MV190(1)	.368	2.092
	MV190(2)	.120	.759
	MV190(3)	.238	1.336
	MV190(4)	.501	2.304
	Lit		
	Lit(1)	.367	2.689
	Lit(2)	.404	3.782
	Relig_ion		
	Relig_ion(1)	.411	2.056
	Relig_ion(2)	.271	1.597
	Relig_ion(3)	.175	1.104
	Relig_ion(4)	.185	3.077
	Marital_status(1)	5.899	28.465
	Ethni_city		
	Ethni_city(1)	.906	6.916
	Ethni_city(2)	.525	4.475
	Ethni_city(3)	.221	1.787
	Ethni_city(4)	.482	4.358
	Ethni_city(5)	.700	11.965
	Constant		

Inconsistent condom use by residence (Urban)

```
USE ALL.
COMPUTE filter_$=(MV025 = 1).
VARIABLE LABELS filter_$ 'MV025 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Condom_consist
  /METHOD=ENTER MV013 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 17:14:34
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\paper_inconsistent.SAV (Male data).sav
	Active Dataset	DataSet1
	Filter	MV025 = 1 (FILTER)
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	93
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Condom_consist /METHOD=ENTER MV013 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.09
	Elapsed Time	00:00:00.17

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	93	100.0
	Missing Cases	0	.0
	Total	93	100.0
Unselected Cases		0	.0
Total		93	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

		Frequency	Parameter coding (1)	(2)	(3)
Ethnicity	Chewa	21	1.000	.000	.000
	Lomwe	14	.000	1.000	.000
	Tumbuka	10	.000	.000	1.000
	Ngoni	17	.000	.000	.000
	Yao	16	.000	.000	.000
	Others	15	.000	.000	.000
Wealth index	Poorest	2	1.000	.000	.000
	Poorer	2	.000	1.000	.000
	Middle	3	.000	.000	1.000
	Richer	16	.000	.000	.000
	Richest	70	.000	.000	.000
Religion	Other Christian	23	1.000	.000	.000
	Catholic	19	.000	1.000	.000
	CCAP	25	.000	.000	1.000
	Muslim	13	.000	.000	.000
	Others	13	.000	.000	.000
Highest educational level	No education	1	1.000	.000	.000
	Primary	28	.000	1.000	.000
	Secondary	57	.000	.000	1.000
	Higher	7	.000	.000	.000
Region	Northern	10	1.000	.000	
	Central	30	.000	1.000	
	Southern	53	.000	.000	
Literacy	Able to read whole sentence	82	1.000	.000	
	Cannot read/ No card/Blind/Others	7	.000	1.000	
	Able to read part of sentence	4	.000	.000	
Marital status	Married/Living together	5	1.000		
	Never Married/Not Living together	88	.000		
Age 5-year groups	15-19	40	1.000		
	20-24	53	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
Ethnicity	Chewa	.000	.000
	Lomwe	.000	.000
	Tumbuka	.000	.000
	Ngoni	1.000	.000
	Yao	.000	1.000
	Others	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Religion	Other Christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Others	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/ No card/Blind/Others		
	Able to read part of sentence		
Marital status	Married/Living together		
	Never Married/Not Living together		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

	Observed		Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Percentage Correct
Step 0	Condom use consistent	Yes	93	0	100.0
		No	31	0	.0
	Overall Percentage				74.9

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-1.092	.207	27.821	1	.000	.335

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	.963	1	.326
		MV024	2.840	2	.242
		MV024(1)	.314	1	.575
		MV024(2)	2.224	1	.136
		MV106	3.494	3	.321
		MV106(1)	.549	1	.459
		MV106(2)	1.051	1	.305
		MV106(3)	.158	1	.691
		MV190	7.191	4	.126
		MV190(1)	.577	1	.448
		MV190(2)	.111	1	.739
		MV190(3)	1.630	1	.202
		MV190(4)	4.667	1	.031
		Lit	1.818	2	.403
		Lit(1)	.788	1	.375
		Lit(2)	.000	1	.992
		Relig_ion	5.059	4	.281
		Relig_ion(1)	4.553	1	.033
		Relig_ion(2)	.488	1	.485
		Relig_ion(3)	.306	1	.580
		Relig_ion(4)	1.305	1	.253
		Marital_status(1)	.021	1	.883
		Ethni_city	22.031	5	.001
		Ethni_city(1)	5.987	1	.014
		Ethni_city(2)	.007	1	.932
		Ethni_city(3)	6.718	1	.010
		Ethni_city(4)	10.239	1	.001
		Ethni_city(5)	2.462	1	.117
	Overall Statistics		37.491	22	.021

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	42.439	22	.006
	Block	42.439	22	.006
	Model	42.439	22	.006

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	97.348[a]	.290	.429

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Classification Table[a]

Observed			Predicted: Condom use consistent Yes	Predicted: Condom use consistent No	Predicted: Percentage Correct
Step 1	Condom use consistent	Yes	85	8	91.4
		No	13	18	57.5
	Overall Percentage				82.9

a. The cut value is .500

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	0.223	0.691	0.104	1	0.747	1.25
	MV024			2.106	2	0.349	
	MV024(1)	-1.4	1.918	0.533	1	0.465	0.246
	MV024(2)	-0.896	0.673	1.772	1	0.183	0.408
	MV106			1.808	3	0.613	
	MV106(1)	3.557	36613.88	0	1	1	35.042
	MV106(2)	1.623	1.45	1.251	1	0.263	5.066
	MV106(3)	0.525	1.079	0.237	1	0.627	1.691
	MV190			2.702	4	0.609	
	MV190(1)	0.262	1.76	0.022	1	0.882	1.299
	MV190(2)	0.494	2.094	0.056	1	0.813	1.64
	MV190(3)	-20.456	17275.21	0	1	0.999	0
	MV190(4)	-1.728	1.195	2.09	1	0.148	0.178
	Lit			0.213	2	0.899	
	Lit(1)	22.163	1.84	0	1	0.999	4.21
	Lit(2)	22.757	1.80	0	1	0.999	1.64
	Relig_ion			2.263	4	0.688	
	Relig_ion(1)	0.364	0.932	0.153	1	0.696	1.44
	Relig_ion(2)	-0.298	1.165	0.066	1	0.798	0.742
	Relig_ion(3)	-0.766	1.033	0.549	1	0.459	0.465
	Relig_ion(4)	0.362	1.466	0.061	1	0.805	1.436
	Marital_status(1)	-0.06	1.448	0.002	1	0.967	0.942
	Ethni_city			16.463	5	0.006	
	Ethni_city(1)	0.331	1.335	0.061	1	0.804	1.392
	Ethni_city(2)	1.444	1.172	1.517	1	0.218	4.236
	Ethni_city(3)	3.214	1.268	6.429	1	0.011	24.885
	Ethni_city(4)	3.353	1.285	6.808	1	0.009	28.578
	Ethni_city(5)	0.329	1.57	0.044	1	0.834	1.39
	Constant	-25.062	18454.08	0	1	0.999	0

Variables in the Equation

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	.322	4.845
	MV024		
	MV024(1)	.006	10.585
	MV024(2)	.109	1.527
	MV106		
	MV106(1)	.000	.
	MV106(2)	.295	86.960
	MV106(3)	.204	14.025
	MV190		
	MV190(1)	.041	40.880
	MV190(2)	.027	99.349
	MV190(3)	.000	.
	MV190(4)	.017	1.849
	Lit		
	Lit(1)	.000	.
	Lit(2)	.000	.
	Relig_ion		
	Relig_ion(1)	.231	8.953
	Relig_ion(2)	.076	7.284
	Relig_ion(3)	.061	3.525
	Relig_ion(4)	.081	25.406
	Marital_status(1)	.055	16.090
	Ethni_city		
	Ethni_city(1)	.102	19.058
	Ethni_city(2)	.426	42.134
	Ethni_city(3)	2.074	298.521
	Ethni_city(4)	2.303	354.611
	Ethni_city(5)	.064	30.142
	Constant		

a. Variable(s) entered on step 1: MV013, MV024, MV106, MV190, Lit, Relig_ion, Marital_status, Ethni_city.

Multiple sexual partnerships by background characteristics

```
GET
  FILE='C:\Users\user\Desktop\PhD Data\Multiple_partner.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
LOGISTIC REGRESSION VARIABLES Multiple_partner
  /METHOD=ENTER MV013 MV025 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (MV025)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 15:37:23
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Multiple_partner.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	2000
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Multiple_partner /METHOD=ENTER MV013 MV025 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (MV025)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
Resources	Processor Time	00:00:00.16
	Elapsed Time	00:00:00.22

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	2000	100.0
	Missing Cases	0	.0
	Total	2000	100.0
Unselected Cases		0	.0
Total		2000	100.0

			Parameter coding			
		Frequency	(1)	(2)	(3)	(4)
Ethnicity	Chewa	604	1.000	.000	.000	.000
	Lomwe	354	.000	1.000	.000	.000
	Tumbuka	164	.000	.000	1.000	.000
	Ngoni	269	.000	.000	.000	1.000
	Yao	228	.000	.000	.000	.000
	Others	381	.000	.000	.000	.000
Religion	Other Christian	696	1.000	.000	.000	.000
	Catholic	413	.000	1.000	.000	.000
	CCAP	363	.000	.000	1.000	.000
	Muslim	239	.000	.000	.000	1.000
	Others	289	.000	.000	.000	.000
Wealth index	Poorest	333	1.000	.000	.000	.000
	Poorer	405	.000	1.000	.000	.000
	Middle	394	.000	.000	1.000	.000
	Richer	427	.000	.000	.000	1.000
	Richest	441	.000	.000	.000	.000
Highest educational level	No education	54	1.000	.000	.000	
	Primary	1298	.000	1.000	.000	
	Secondary	610	.000	.000	1.000	
	Higher	38	.000	.000	.000	
Literacy	Able to read whole sentence	1480	1.000	.000		
	Cannot read/ No card/Blind/Others	373	.000	1.000		
	Able to read part of sentence	147	.000	.000		
Region	Northern	285	1.000	.000		
	Central	753	.000	1.000		
	Southern	962	.000	.000		
Type of place of residence	Urban	304	1.000			
	Rural	1696	.000			
Marital status	Married/Living together	465	1.000			
	Never Married/Not Living together	1535	.000			
Age 5-year groups	15-19	949	1.000			
	20-24	1051	.000			

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
One partner	0
Multiple partner	1

Categorical Variables Codings

		Parameter coding
		(5)
Ethnicity	Chewa	.000
	Lomwe	.000
	Tumbuka	.000
	Ngoni	.000
	Yao	1.000
	Others	.000
Religion	Other Christian	
	Catholic	
	CCAP	
	Muslim	
	Others	
Wealth index	Poorest	
	Poorer	
	Middle	
	Richer	
	Richest	
Highest educational level	No education	
	Primary	
	Secondary	
	Higher	
Literacy	Able to read whole sentence	
	Cannot read/ No card/Blind/Others	
	Able to read part of sentence	
Region	Northern	
	Central	
	Southern	
Type of place of residence	Urban	
	Rural	
Marital status	Married/Living together	
	Never Married/Not Living together	
Age 5-year groups	15-19	
	20-24	

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Multiple partner: One partner	Predicted: Multiple partner: Multiple partner	Predicted: Percentage Correct
Step 0	Multiple partner	One partner	0	627	.0
		Multiple partner	0	1399	100.0
	Overall Percentage				69.0

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.802	.048	278.371	1	.000	2.229

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	37.868	1	.000
		MV025(1)	.056	1	.813
		Relig_ion	33.746	4	.000
		Relig_ion(1)	.873	1	.350
		Relig_ion(2)	14.305	1	.000
		Relig_ion(3)	.651	1	.420
		Relig_ion(4)	20.818	1	.000
		MV024	3.395	2	.183
		MV024(1)	.451	1	.502
		MV024(2)	2.129	1	.145
		MV106	6.002	3	.111
		MV106(1)	.005	1	.946
		MV106(2)	5.024	1	.025
		MV106(3)	5.956	1	.015
		MV190	6.386	4	.172
		MV190(1)	1.292	1	.256
		MV190(2)	.345	1	.557
		MV190(3)	2.048	1	.152
		MV190(4)	.189	1	.664
		Lit	10.330	2	.006
		Lit(1)	7.989	1	.005
		Lit(2)	9.963	1	.002
		Marital_status(1)	8.743	1	.003
		Ethni_city	24.686	5	.000
		Ethni_city(1)	10.675	1	.001
		Ethni_city(2)	.586	1	.444
		Ethni_city(3)	4.150	1	.042
		Ethni_city(4)	.534	1	.465
		Ethni_city(5)	14.558	1	.000
	Overall Statistics		111.963	23	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	116.125	23	.000
	Block	116.125	23	.000
	Model	116.125	23	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2391.100[a]	.056	.078

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			Multiple partner		Percentage Correct
	Observed		One partner	Multiple partner	
Step 1	Multiple partner	One partner	60	568	9.5
		Multiple partner	49	1350	96.5
	Overall Percentage				69.6

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	-.762	.118	41.415	1	.000	.467
	MV025(1)	.132	.150	.777	1	.378	1.141
	Relig_ion			20.331	4	.000	
	Relig_ion(1)	-.407	.172	5.584	1	.018	.666
	Relig_ion(2)	-.662	.182	13.277	1	.000	.516
	Relig_ion(3)	-.274	.188	2.132	1	.144	.760
	Relig_ion(4)	.191	.281	.461	1	.497	1.210
	MV024			.533	2	.766	
	MV024(1)	.016	.228	.005	1	.945	1.016
	MV024(2)	.101	.142	.506	1	.477	1.106
	MV106			7.423	3	.060	
	MV106(1)	-.448	.466	.924	1	.336	.639
	MV106(2)	.118	.349	.114	1	.735	1.125
	MV106(3)	-.151	.337	.201	1	.654	.860
	MV190			7.624	4	.106	
	MV190(1)	.306	.191	2.560	1	.110	1.358
	MV190(2)	.082	.177	.216	1	.642	1.086
	MV190(3)	.423	.178	5.630	1	.018	1.526
	MV190(4)	.209	.161	1.679	1	.195	1.233
	Lit			5.038	2	.081	
	Lit(1)	-.073	.184	.157	1	.692	.930
	Lit(2)	.275	.213	1.664	1	.197	1.317
	Marital_status(1)	-.095	.138	.469	1	.494	.910
	Ethni_city			14.740	5	.012	
	Ethni_city(1)	-.416	.191	4.721	1	.030	.660
	Ethni_city(2)	.171	.185	.852	1	.356	1.186
	Ethni_city(3)	-.265	.246	1.161	1	.281	.768
	Ethni_city(4)	.088	.205	.184	1	.668	1.092
	Ethni_city(5)	.054	.273	.039	1	.844	1.055
	Constant	1.363	.441	9.576	1	.002	3.908

a. Variable(s) entered on step 1: MV013, MV025, Relig_ion, MV024, MV106, MV190, Lit, Marital_status, Ethni_city.

Multiple sexual partnerships by residence (Rural)

```
LOGISTIC REGRESSION VARIABLES Multiple_partner
  /METHOD=ENTER MV013 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 15:55:22
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Multiple_partner.sav
	Active Dataset	DataSet1
	Filter	MV025 = 2 (FILTER)
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	1696
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Multiple_partner /METHOD=ENTER MV013 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.14
	Elapsed Time	00:00:00.47

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	1696	100.0
	Missing Cases	0	.0
	Total	1696	100.0
Unselected Cases		0	.0
Total		1696	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
One partner	0
Multiple partner	1

		Frequency	Parameter coding (1)	(2)	(3)
Ethnicity	Chewa	550	1.000	.000	.000
	Lomwe	300	.000	1.000	.000
	Tumbuka	139	.000	.000	1.000
	Ngoni	208	.000	.000	.000
	Yao	178	.000	.000	.000
	Others	321	.000	.000	.000
Religion	Other Christian	611	1.000	.000	.000
	Catholic	358	.000	1.000	.000
	CCAP	289	.000	.000	1.000
	Muslim	193	.000	.000	.000
	Others	245	.000	.000	.000
Wealth index	Poorest	325	1.000	.000	.000
	Poorer	396	.000	1.000	.000
	Middle	374	.000	.000	1.000
	Richer	375	.000	.000	.000
	Richest	226	.000	.000	.000
Highest educational level	No education	50	1.000	.000	.000
	Primary	1190	.000	1.000	.000
	Secondary	445	.000	.000	1.000
	Higher	11	.000	.000	.000
Literacy	Able to read whole sentence	1220	1.000	.000	
	Cannot read/ No card/Blind/Others	345	.000	1.000	
	Able to read part of sentence	131	.000	.000	
Region	Northern	261	1.000	.000	
	Central	659	.000	1.000	
	Southern	776	.000	.000	
Marital status	Married/Living together	425	1.000		
	Never Married/Not Living together	1271	.000		
Age 5-year groups	15-19	815	1.000		
	20-24	881	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
Ethnicity	Chewa	.000	.000
	Lomwe	.000	.000
	Tumbuka	.000	.000
	Ngoni	1.000	.000
	Yao	.000	1.000
	Others	.000	.000
Religion	Other Christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Others	.000	
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Literacy	Able to read whole sentence		
	Cannot read/ No card/Blind/Others		
	Able to read part of sentence		
Region	Northern		
	Central		
	Southern		
Marital status	Married/Living together		
	Never Married/Not Living together		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

			Predicted		
			Multiple partner		Percentage Correct
Observed			One partner	Multiple partner	
Step 0	Multiple partner	One partner	0	488	.0
		Multiple partner	0	1082	100.0
	Overall Percentage				68.9

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.796	.055	213.027	1	.000	2.216

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	20.786	1	.000
		Relig_ion	39.101	4	.000
		Relig_ion(1)	1.415	1	.234
		Relig_ion(2)	14.256	1	.000
		Relig_ion(3)	1.012	1	.314
		Relig_ion(4)	23.093	1	.000
		MV024	9.358	2	.009
		MV024(1)	.650	1	.420
		MV024(2)	6.440	1	.011
		MV106	5.545	3	.136
		MV106(1)	.038	1	.846
		MV106(2)	3.364	1	.067
		MV106(3)	2.134	1	.144
		MV190	5.729	4	.220
		MV190(1)	.710	1	.400
		MV190(2)	.092	1	.761
		MV190(3)	3.065	1	.080
		MV190(4)	1.272	1	.259
		Lit	14.340	2	.001
		Lit(1)	11.190	1	.001
		Lit(2)	13.799	1	.000
		Marital_status(1)	3.005	1	.083
		Ethni_city	27.294	5	.000
		Ethni_city(1)	14.954	1	.000
		Ethni_city(2)	.518	1	.472
		Ethni_city(3)	.908	1	.341
		Ethni_city(4)	2.946	1	.086
		Ethni_city(5)	15.936	1	.000
	Overall Statistics		105.495	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	112.395	22	.000
	Block	112.395	22	.000
	Model	112.395	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1834.623[a]	.069	.097

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Multiple partner: One partner	Predicted: Multiple partner: Multiple partner	Predicted: Percentage Correct
Step 1	Multiple partner	One partner	53	435	10.9
		Multiple partner	52	1030	95.2
	Overall Percentage				69.0

a. The cut value is .500

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	-.760	.140	29.583	1	.000	.468
	Relig_ion			23.983	4	.000	
	Relig_ion(1)	-.592	.208	8.120	1	.004	.553
	Relig_ion(2)	-.854	.217	15.434	1	.000	.426
	Relig_ion(3)	-.453	.227	3.997	1	.046	.636
	Relig_ion(4)	.234	.338	.480	1	.489	1.264
	MV024			.521	2	.771	
	MV024(1)	-.178	.257	.478	1	.489	.837
	MV024(2)	-.082	.181	.206	1	.650	.921
	MV106			11.278	3	.010	
	MV106(1)	.515	.661	.607	1	.436	1.674
	MV106(2)	1.316	.567	5.392	1	.020	3.729
	MV106(3)	1.121	.560	4.011	1	.045	3.067
	MV190			7.408	4	.116	
	MV190(1)	.172	.214	.644	1	.422	1.188
	MV190(2)	-.011	.202	.003	1	.957	.989
	MV190(3)	.378	.207	3.343	1	.067	1.460
	MV190(4)	-.034	.199	.029	1	.864	.966
	Lit			10.434	2	.005	
	Lit(1)	-.121	.202	.360	1	.549	.886
	Lit(2)	.433	.237	3.347	1	.067	1.542
	Marital_status(1)	-.220	.153	2.071	1	.150	.802
	Ethni_city			16.266	5	.006	
	Ethni_city(1)	-.290	.224	1.689	1	.194	.748
	Ethni_city(2)	.233	.214	1.183	1	.277	1.262
	Ethni_city(3)	.022	.285	.006	1	.939	1.022
	Ethni_city(4)	.484	.258	3.507	1	.061	1.622
	Ethni_city(5)	.075	.324	.054	1	.816	1.078
	Constant	.437	.612	.511	1	.475	1.548

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	.356	.615
	Relig_ion		
	Relig_ion(1)	.368	.831
	Relig_ion(2)	.278	.652
	Relig_ion(3)	.408	.991
	Relig_ion(4)	.652	2.451
	MV024		
	MV024(1)	.506	1.386
	MV024(2)	.646	1.314
	MV106		
	MV106(1)	.458	6.122
	MV106(2)	1.228	11.323
	MV106(3)	1.024	9.184
	MV190		
	MV190(1)	.781	1.807
	MV190(2)	.666	1.469
	MV190(3)	.973	2.190
	MV190(4)	.655	1.426
	Lit		
	Lit(1)	.596	1.316
	Lit(2)	.970	2.452
	Marital_status(1)	.594	1.083
	Ethni_city		
	Ethni_city(1)	.483	1.159
	Ethni_city(2)	.830	1.920
	Ethni_city(3)	.585	1.786
	Ethni_city(4)	.978	2.692
	Ethni_city(5)	.572	2.033
	Constant		

a. Variable(s) entered on step 1: MV013, Relig_ion, MV024, MV106, MV190, Lit, Marital_status, Ethni_city.

Multiple sexual partnerships by residence (Urban)

```
USE ALL.
COMPUTE filter_$=(MV025 = 1).
VARIABLE LABELS filter_$ 'MV025 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Multiple_partner
  /METHOD=ENTER MV013 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 15:51:52
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Multiple_partner.sav
	Active Dataset	DataSet1
	Filter	MV025 = 1 (FILTER)
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	304
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Multiple_partner /METHOD=ENTER MV013 Relig_ion MV024 MV106 MV190 Lit Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
Resources	Processor Time	00:00:00.13
	Elapsed Time	00:00:00.22

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	304	100.0
	Missing Cases	0	.0
	Total	304	100.0
Unselected Cases		0	.0
Total		304	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
One partner	0
Multiple partner	1

		Frequency	Parameter coding (1)	(2)	(3)
Ethnicity	Chewa	54	1.000	.000	.000
	Lomwe	54	.000	1.000	.000
	Tumbuka	25	.000	.000	1.000
	Ngoni	61	.000	.000	.000
	Yao	50	.000	.000	.000
	Others	60	.000	.000	.000
Religion	Other Christian	85	1.000	.000	.000
	Catholic	55	.000	1.000	.000
	CCAP	74	.000	.000	1.000
	Muslim	46	.000	.000	.000
	Others	44	.000	.000	.000
Wealth index	Poorest	8	1.000	.000	.000
	Poorer	9	.000	1.000	.000
	Middle	20	.000	.000	1.000
	Richer	52	.000	.000	.000
	Richest	215	.000	.000	.000
Highest educational level	No education	4	1.000	.000	.000
	Primary	108	.000	1.000	.000
	Secondary	165	.000	.000	1.000
	Higher	27	.000	.000	.000
Literacy	Able to read whole sentence	260	1.000	.000	
	Cannot read/ No card/Blind/Others	28	.000	1.000	
	Able to read part of sentence	16	.000	.000	
Region	Northern	24	1.000	.000	
	Central	94	.000	1.000	
	Southern	186	.000	.000	
Marital status	Married/Living together	40	1.000		
	Never Married/Not Living together	264	.000		
Age 5-year groups	15-19	134	1.000		
	20-24	170	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
Ethnicity	Chewa	.000	.000
	Lomwe	.000	.000
	Tumbuka	.000	.000
	Ngoni	1.000	.000
	Yao	.000	1.000
	Others	.000	.000
Religion	Other Christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Others	.000	
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Literacy	Able to read whole sentence		
	Cannot read/ No card/Blind/Others		
	Able to read part of sentence		
Region	Northern		
	Central		
	Southern		
Marital status	Married/Living together		
	Never Married/Not Living together		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Multiple partner — One partner	Predicted: Multiple partner — Multiple partner	Percentage Correct
Step 0	Multiple partner	One partner	0	139	.0
		Multiple partner	0	316	100.0
	Overall Percentage				69.5

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.823	.102	65.374	1	.000	2.277

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	20.451	1	.000
		Relig_ion	1.523	4	.823
		Relig_ion(1)	.107	1	.744
		Relig_ion(2)	.753	1	.385
		Relig_ion(3)	.011	1	.916
		Relig_ion(4)	.716	1	.397
		MV024	3.488	2	.175
		MV024(1)	.278	1	.598
		MV024(2)	2.926	1	.087
		MV106	7.041	3	.071
		MV106(1)	.400	1	.527
		MV106(2)	2.678	1	.102
		MV106(3)	6.422	1	.011
		MV190	16.062	4	.003
		MV190(1)	3.453	1	.063
		MV190(2)	1.692	1	.193
		MV190(3)	.305	1	.581
		MV190(4)	10.646	1	.001
		Lit	.515	2	.773
		Lit(1)	.241	1	.623
		Lit(2)	.512	1	.474
		Marital_status(1)	12.604	1	.000
		Ethni_city	10.446	5	.064
		Ethni_city(1)	.469	1	.493
		Ethni_city(2)	.077	1	.781
		Ethni_city(3)	7.362	1	.007
		Ethni_city(4)	1.433	1	.231
		Ethni_city(5)	.674	1	.412
	Overall Statistics		60.802	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	66.327	22	.000
	Block	66.327	22	.000
	Model	66.327	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	493.824[a]	.136	.192

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Multiple partner — One partner	Predicted: Multiple partner — Multiple partner	Percentage Correct
Step 1	Multiple partner	One partner	47	92	33.5
		Multiple partner	28	288	91.2
	Overall Percentage				73.6

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	-.883	.253	12.156	1	.000	.414
	Relig_ion			1.047	4	.903	
	Relig_ion(1)	.196	.361	.295	1	.587	1.217
	Relig_ion(2)	.110	.396	.077	1	.781	1.116
	Relig_ion(3)	-.156	.402	.151	1	.698	.855
	Relig_ion(4)	.030	.596	.002	1	.960	1.030
	MV024			3.475	2	.176	
	MV024(1)	.602	.836	.518	1	.472	1.825
	MV024(2)	.490	.272	3.249	1	.071	1.633
	MV106			7.009	3	.072	
	MV106(1)	.275	1.079	.065	1	.798	1.317
	MV106(2)	-.353	.546	.418	1	.518	.702
	MV106(3)	-.934	.484	3.724	1	.054	.393
	MV190			11.437	4	.022	
	MV190(1)	1.711	1.426	1.439	1	.230	5.533
	MV190(2)	-.888	.726	1.498	1	.221	.411
	MV190(3)	-.364	.456	.635	1	.426	.695
	MV190(4)	.935	.382	5.998	1	.014	2.548
	Lit			2.684	2	.261	
	Lit(1)	.446	.564	.627	1	.429	1.562
	Lit(2)	-.257	.642	.160	1	.689	.774
	Marital_status(1)	.825	.431	3.664	1	.056	2.283
	Ethni_city			9.156	5	.103	
	Ethni_city(1)	-.597	.436	1.875	1	.171	.551
	Ethni_city(2)	-.473	.416	1.292	1	.256	.623
	Ethni_city(3)	-1.064	.540	3.878	1	.049	.345
	Ethni_city(4)	-1.022	.395	6.701	1	.010	.360
	Ethni_city(5)	-.091	.597	.023	1	.879	.913
	Constant	1.652	.887	3.468	1	.063	5.219

a. Variable(s) entered on step 1: MV013, Relig_ion, MV024, MV106, MV190, Lit, Marital_status, Ethni_city.

Non-use of condom by background characteristics

```
LOGISTIC REGRESSION VARIABLES Condom_us
  /METHOD=ENTER MV013 MV025 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (MV025)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 16:41:15
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Condom use_last intercourse.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	1371
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Condom_us /METHOD=ENTER MV013 MV025 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (MV025)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.13
	Elapsed Time	00:00:00.20

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	1371	100.0
	Missing Cases	0	.0
	Total	1371	100.0
Unselected Cases		0	.0
Total		1371	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	(2)	(3)	(4)
Ethnicity	Chewa	391	1.000	.000	.000	.000
	Lomwe	241	.000	1.000	.000	.000
	Tumbuka	117	.000	.000	1.000	.000
	Ngoni	184	.000	.000	.000	1.000
	Yao	163	.000	.000	.000	.000
	Others	275	.000	.000	.000	.000
Wealth index	Poorest	232	1.000	.000	.000	.000
	Poorer	288	.000	1.000	.000	.000
	Middle	276	.000	.000	1.000	.000
	Richer	289	.000	.000	.000	1.000
	Richest	286	.000	.000	.000	.000
Religion	Other Christian	483	1.000	.000	.000	.000
	Catholic	272	.000	1.000	.000	.000
	CCAP	239	.000	.000	1.000	.000
	Muslim	177	.000	.000	.000	1.000
	Others	200	.000	.000	.000	.000
Highest educational level	No education	44	1.000	.000	.000	
	Primary	892	.000	1.000	.000	
	Secondary	413	.000	.000	1.000	
	Higher	22	.000	.000	.000	
Literacy	Able to read whole sentence	992	1.000	.000		
	Cannot read/ No card/Blind/Others	275	.000	1.000		
	Able to read part of sentence	104	.000	.000		
Region	Northern	206	1.000	.000		
	Central	502	.000	1.000		
	Southern	663	.000	.000		
Marital status	Married/Living together	458	1.000			
	Never Married/Not Living together	913	.000			
Type of place of residence	Urban	194	1.000			
	Rural	1177	.000			
Age 5-year groups	15-19	561	1.000			
	20-24	810	.000			

Categorical Variables Codings

		Parameter coding
		(5)
Ethnicity	Chewa	.000
	Lomwe	.000
	Tumbuka	.000
	Ngoni	.000
	Yao	1.000
	Others	.000
Wealth index	Poorest	
	Poorer	
	Middle	
	Richer	
	Richest	
Religion	Other Christian	
	Catholic	
	CCAP	
	Muslim	
	Others	
Highest educational level	No education	
	Primary	
	Secondary	
	Higher	
Literacy	Able to read whole sentence	
	Cannot read/ No card/Blind/Others	
	Able to read part of sentence	
Region	Northern	
	Central	
	Southern	
Marital status	Married/Living together	
	Never Married/Not Living together	
Type of place of residence	Urban	
	Rural	
Age 5-year groups	15-19	
	20-24	

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Condom use at last sexual debut — Yes	Predicted: Condom use at last sexual debut — No	Predicted: Percentage Correct
Step 0	Condom use at last sexual debut	Yes	0	524	.0
		No	0	881	100.0
	Overall Percentage				62.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.520	.055	88.842	1	.000	1.682

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	12.401	1	.000
		MV025(1)	10.350	1	.001
		MV024	20.556	2	.000
		MV024(1)	14.354	1	.000
		MV024(2)	1.781	1	.182
		MV106	63.453	3	.000
		MV106(1)	5.148	1	.023
		MV106(2)	46.728	1	.000
		MV106(3)	56.506	1	.000
		MV190	57.642	4	.000
		MV190(1)	9.654	1	.002
		MV190(2)	12.690	1	.000
		MV190(3)	7.295	1	.007
		MV190(4)	7.688	1	.006
		Lit	29.029	2	.000
		Lit(1)	28.964	1	.000
		Lit(2)	18.934	1	.000
		Relig_ion	15.641	4	.004
		Relig_ion(1)	3.403	1	.065
		Relig_ion(2)	2.046	1	.153
		Relig_ion(3)	4.609	1	.032
		Relig_ion(4)	7.357	1	.007
		Marital_status(1)	197.727	1	.000
		Ethni_city	31.628	5	.000
		Ethni_city(1)	2.545	1	.111
		Ethni_city(2)	6.777	1	.009
		Ethni_city(3)	17.477	1	.000
		Ethni_city(4)	8.622	1	.003
		Ethni_city(5)	.826	1	.363
	Overall Statistics		292.906	23	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	330.946	23	.000
	Block	330.946	23	.000
	Model	330.946	23	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1524.453[a]	.210	.286

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Condom use at last sexual debut — Yes	Predicted: Condom use at last sexual debut — No	Predicted: Percentage Correct
Step 1	Condom use at last sexual debut	Yes	300	224	57.3
		No	185	696	79.0
	Overall Percentage				70.9

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	.342	.143	5.738	1	.017	1.407
	MV025(1)	.170	.190	.806	1	.369	1.186
	MV024			11.414	2	.003	
	MV024(1)	-.886	.286	9.578	1	.002	.412
	MV024(2)	-.380	.171	4.928	1	.026	.684
	MV106			11.153	3	.011	
	MV106(1)	.275	.618	.197	1	.657	1.316
	MV106(2)	.301	.458	.431	1	.512	1.351
	MV106(3)	-.240	.444	.294	1	.588	.786
	MV190			13.622	4	.009	
	MV190(1)	.393	.239	2.690	1	.101	1.481
	MV190(2)	.599	.226	7.018	1	.008	1.820
	MV190(3)	.527	.226	5.464	1	.019	1.694
	MV190(4)	-.026	.202	.017	1	.896	.974
	Lit			1.970	2	.373	
	Lit(1)	-.238	.243	.956	1	.328	.788
	Lit(2)	-.009	.274	.001	1	.974	.991
	Relig_ion			6.713	4	.152	
	Relig_ion(1)	.203	.213	.912	1	.340	1.225
	Relig_ion(2)	-.032	.231	.019	1	.889	.968
	Relig_ion(3)	.204	.236	.746	1	.388	1.226
	Relig_ion(4)	.710	.333	4.553	1	.033	2.034
	Marital_status(1)	2.127	.177	145.175	1	.000	8.392
	Ethni_city			11.175	5	.048	
	Ethni_city(1)	.001	.239	.000	1	.996	1.001
	Ethni_city(2)	.226	.237	.909	1	.340	1.253
	Ethni_city(3)	-.458	.303	2.279	1	.131	.633
	Ethni_city(4)	-.350	.252	1.923	1	.165	.705
	Ethni_city(5)	-.492	.324	2.311	1	.128	.611
	Constant	-.302	.569	.282	1	.596	.740

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	1.064	1.861
	MV025(1)	.817	1.721
	MV024		
	MV024(1)	.235	.723
	MV024(2)	.489	.957
	MV106		
	MV106(1)	.392	4.419
	MV106(2)	.550	3.318
	MV106(3)	.330	1.876
	MV190		
	MV190(1)	.926	2.368
	MV190(2)	1.169	2.834
	MV190(3)	1.089	2.637
	MV190(4)	.656	1.447
	Lit		
	Lit(1)	.489	1.270
	Lit(2)	.579	1.697
	Relig_ion		
	Relig_ion(1)	.807	1.859
	Relig_ion(2)	.615	1.524
	Relig_ion(3)	.772	1.945
	Relig_ion(4)	1.060	3.904
	Marital_status(1)	5.937	11.862
	Ethni_city		
	Ethni_city(1)	.626	1.600
	Ethni_city(2)	.788	1.995
	Ethni_city(3)	.349	1.146
	Ethni_city(4)	.430	1.156
	Ethni_city(5)	.324	1.153
	Constant		

a. Variable(s) entered on step 1: MV013, MV025, MV024, MV106, MV190, Lit, Relig_ion, Marital_status, Ethni_city.

Non-use of condom by residence (Rural)

```
USE ALL.
COMPUTE filter_$=(MV025 = 2).
VARIABLE LABELS filter_$ 'MV025 = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Condom_us
  /METHOD=ENTER MV013 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 16:58:04
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Condom use_last intercourse.sav
	Active Dataset	DataSet1
	Filter	MV025 = 2 (FILTER)
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	1177
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Condom_us /METHOD=ENTER MV013 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.16
	Elapsed Time	00:00:00.20

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	1177	100.0
	Missing Cases	0	.0
	Total	1177	100.0
Unselected Cases		0	.0
Total		1177	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

		Frequency	Parameter coding (1)	(2)	(3)
Ethnicity	Chewa	361	1.000	.000	.000
	Lomwe	200	.000	1.000	.000
	Tumbuka	101	.000	.000	1.000
	Ngoni	147	.000	.000	.000
	Yao	132	.000	.000	.000
	Others	236	.000	.000	.000
Wealth index	Poorest	226	1.000	.000	.000
	Poorer	282	.000	1.000	.000
	Middle	265	.000	.000	1.000
	Richer	253	.000	.000	.000
	Richest	151	.000	.000	.000
Religion	Other Christian	427	1.000	.000	.000
	Catholic	240	.000	1.000	.000
	CCAP	184	.000	.000	1.000
	Muslim	150	.000	.000	.000
	Others	176	.000	.000	.000
Highest educational level	No education	40	1.000	.000	.000
	Primary	830	.000	1.000	.000
	Secondary	301	.000	.000	1.000
	Higher	6	.000	.000	.000
Region	Northern	190	1.000	.000	
	Central	447	.000	1.000	
	Southern	540	.000	.000	
Literacy	Able to read whole sentence	828	1.000	.000	
	Cannot read/ No card/Blind/Others	255	.000	1.000	
	Able to read part of sentence	94	.000	.000	
Marital status	Married/Living together	418	1.000		
	Never Married/Not Living together	759	.000		
Age 5-year groups	15-19	486	1.000		
	20-24	691	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
Ethnicity	Chewa	.000	.000
	Lomwe	.000	.000
	Tumbuka	.000	.000
	Ngoni	1.000	.000
	Yao	.000	1.000
	Others	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Religion	Other Christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Others	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/ No card/Blind/Others		
	Able to read part of sentence		
Marital status	Married/Living together		
	Never Married/Not Living together		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

	Observed		Predicted: Condom use at last sexual debut: Yes	Predicted: Condom use at last sexual debut: No	Predicted: Percentage Correct
Step 0	Condom use at last sexual debut	Yes	0	394	.0
		No	0	726	100.0
	Overall Percentage				64.8

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.611	.063	95.263	1	.000	1.842

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	8.324	1	.004
		MV024	27.056	2	.000
		MV024(1)	16.445	1	.000
		MV024(2)	3.231	1	.072
		MV106	56.547	3	.000
		MV106(1)	2.749	1	.097
		MV106(2)	40.507	1	.000
		MV106(3)	48.035	1	.000
		MV190	42.619	4	.000
		MV190(1)	6.086	1	.014
		MV190(2)	7.144	1	.008
		MV190(3)	3.200	1	.074
		MV190(4)	9.484	1	.002
		Lit	19.076	2	.000
		Lit(1)	19.069	1	.000
		Lit(2)	11.832	1	.001
		Relig_ion	14.223	4	.007
		Relig_ion(1)	2.414	1	.120
		Relig_ion(2)	1.204	1	.272
		Relig_ion(3)	4.992	1	.025
		Relig_ion(4)	7.068	1	.008
		Marital_status(1)	148.356	1	.000
		Ethni_city	33.179	5	.000
		Ethni_city(1)	4.038	1	.044
		Ethni_city(2)	5.526	1	.019
		Ethni_city(3)	18.978	1	.000
		Ethni_city(4)	7.686	1	.006
		Ethni_city(5)	1.809	1	.179
	Overall Statistics		245.897	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	275.549	22	.000
	Block	275.549	22	.000
	Model	275.549	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1177.597[a]	.218	.300

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Condom use at last sexual debut – Yes	Predicted: Condom use at last sexual debut – No	Percentage Correct
Step 1	Condom use at last sexual debut	Yes	182	212	46.2
		No	105	621	85.5
	Overall Percentage				71.7

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	.417	.167	6.274	1	.012	1.518
	MV024			9.386	2	.009	
	MV024(1)	-.663	.321	4.263	1	.039	.515
	MV024(2)	-.605	.213	8.060	1	.005	.546
	MV106			17.584	3	.001	
	MV106(1)	1.543	1.285	1.442	1	.230	4.679
	MV106(2)	1.539	1.197	1.653	1	.198	4.660
	MV106(3)	.775	1.193	.422	1	.516	2.170
	MV190			8.722	4	.068	
	MV190(1)	.368	.270	1.857	1	.173	1.444
	MV190(2)	.565	.256	4.879	1	.027	1.759
	MV190(3)	.474	.261	3.312	1	.069	1.607
	MV190(4)	.049	.252	.038	1	.845	1.050
	Lit			.754	2	.686	
	Lit(1)	-.169	.261	.420	1	.517	.844
	Lit(2)	-.025	.295	.007	1	.932	.975
	Relig_ion			4.591	4	.332	
	Relig_ion(1)	.230	.245	.884	1	.347	1.259
	Relig_ion(2)	.043	.262	.027	1	.869	1.044
	Relig_ion(3)	.185	.276	.448	1	.503	1.203
	Relig_ion(4)	.747	.395	3.577	1	.059	2.111
	Marital_status(1)	2.139	.198	117.197	1	.000	8.493
	Ethni_city			14.592	5	.012	
	Ethni_city(1)	.536	.278	3.709	1	.054	1.709
	Ethni_city(2)	.527	.279	3.577	1	.059	1.694
	Ethni_city(3)	-.452	.351	1.658	1	.198	.636
	Ethni_city(4)	.082	.306	.072	1	.788	1.086
	Ethni_city(5)	-.216	.384	.316	1	.574	.806
	Constant	-1.829	1.217	2.259	1	.133	.161

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	1.095	2.104
	MV024		
	MV024(1)	.275	.967
	MV024(2)	.360	.829
	MV106		
	MV106(1)	.377	58.076
	MV106(2)	.446	48.657
	MV106(3)	.209	22.481
	MV190		
	MV190(1)	.851	2.451
	MV190(2)	1.066	2.905
	MV190(3)	.964	2.678
	MV190(4)	.641	1.722
	Lit		
	Lit(1)	.506	1.409
	Lit(2)	.547	1.738
	Relig_ion		
	Relig_ion(1)	.779	2.034
	Relig_ion(2)	.624	1.746
	Relig_ion(3)	.700	2.066
	Relig_ion(4)	.973	4.577
	Marital_status(1)	5.766	12.510
	Ethni_city		
	Ethni_city(1)	.991	2.947
	Ethni_city(2)	.981	2.923
	Ethni_city(3)	.320	1.266
	Ethni_city(4)	.596	1.976
	Ethni_city(5)	.380	1.711
	Constant		

a. Variable(s) entered on step 1: MV013, MV024, MV106, MV190, Lit, Relig_ion, Marital_status, Ethni_city.

Non-use of condom by residence (Urban)

```
USE ALL.
COMPUTE filter_$=(MV025 = 1).
VARIABLE LABELS filter_$ 'MV025 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
LOGISTIC REGRESSION VARIABLES Condom_us
  /METHOD=ENTER MV013 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city
  /CONTRAST (MV013)=Indicator
  /CONTRAST (MV024)=Indicator
  /CONTRAST (MV106)=Indicator
  /CONTRAST (MV190)=Indicator
  /CONTRAST (Lit)=Indicator
  /CONTRAST (Relig_ion)=Indicator
  /CONTRAST (Marital_status)=Indicator
  /CONTRAST (Ethni_city)=Indicator
  /PRINT=CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		14-JUL-2015 16:44:11
Comments		
Input	Data	C:\Users\user\Desktop\PhD Data\Condom use_last intercourse.sav
	Active Dataset	DataSet1
	Filter	MV025 = 1 (FILTER)
	Weight	weighted
	Split File	<none>
	N of Rows in Working Data File	194
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Condom_us /METHOD=ENTER MV013 MV024 MV106 MV190 Lit Relig_ion Marital_status Ethni_city /CONTRAST (MV013)=Indicator /CONTRAST (MV024)=Indicator /CONTRAST (MV106)=Indicator /CONTRAST (MV190)=Indicator /CONTRAST (Lit)=Indicator /CONTRAST (Relig_ion)=Indicator /CONTRAST (Marital_status)=Indicator /CONTRAST (Ethni_city)=Indicator /PRINT=CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.67

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	194	100.0
	Missing Cases	0	.0
	Total	194	100.0
Unselected Cases		0	.0
Total		194	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

		Frequency	Parameter coding (1)	(2)	(3)
Ethnicity	Chewa	30	1.000	.000	.000
	Lomwe	41	.000	1.000	.000
	Tumbuka	16	.000	.000	1.000
	Ngoni	37	.000	.000	.000
	Yao	31	.000	.000	.000
	Others	39	.000	.000	.000
Wealth index	Poorest	6	1.000	.000	.000
	Poorer	6	.000	1.000	.000
	Middle	11	.000	.000	1.000
	Richer	36	.000	.000	.000
	Richest	135	.000	.000	.000
Religion	Other Christian	56	1.000	.000	.000
	Catholic	32	.000	1.000	.000
	CCAP	55	.000	.000	1.000
	Muslim	27	.000	.000	.000
	Others	24	.000	.000	.000
Highest educational level	No education	4	1.000	.000	.000
	Primary	62	.000	1.000	.000
	Secondary	112	.000	.000	1.000
	Higher	16	.000	.000	.000
Region	Northern	16	1.000	.000	
	Central	55	.000	1.000	
	Southern	123	.000	.000	
Literacy	Able to read whole sentence	164	1.000	.000	
	Cannot read/ No card/Blind/Others	20	.000	1.000	
	Able to read part of sentence	10	.000	.000	
Marital status	Married/Living together	40	1.000		
	Never Married/Not Living together	154	.000		
Age 5-year groups	15-19	75	1.000		
	20-24	119	.000		

Categorical Variables Codings

		Parameter coding	
		(4)	(5)
Ethnicity	Chewa	.000	.000
	Lomwe	.000	.000
	Tumbuka	.000	.000
	Ngoni	1.000	.000
	Yao	.000	1.000
	Others	.000	.000
Wealth index	Poorest	.000	
	Poorer	.000	
	Middle	.000	
	Richer	1.000	
	Richest	.000	
Religion	Other Christian	.000	
	Catholic	.000	
	CCAP	.000	
	Muslim	1.000	
	Others	.000	
Highest educational level	No education		
	Primary		
	Secondary		
	Higher		
Region	Northern		
	Central		
	Southern		
Literacy	Able to read whole sentence		
	Cannot read/ No card/Blind/Others		
	Able to read part of sentence		
Marital status	Married/Living together		
	Never Married/Not Living together		
Age 5-year groups	15-19		
	20-24		

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Condom use at last sexual debut – Yes	Predicted: Condom use at last sexual debut – No	Percentage Correct
Step 0	Condom use at last sexual debut	Yes	0	129	.0
		No	0	155	100.0
	Overall Percentage				54.5

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.180	.119	2.278	1	.131	1.197

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	MV013(1)	4.601	1	.032
		MV024	1.604	2	.448
		MV024(1)	1.596	1	.206
		MV024(2)	.004	1	.950
		MV106	5.669	3	.129
		MV106(1)	3.025	1	.082
		MV106(2)	1.451	1	.228
		MV106(3)	3.736	1	.053
		MV190	7.275	4	.122
		MV190(1)	.704	1	.401
		MV190(2)	2.936	1	.087
		MV190(3)	3.033	1	.082
		MV190(4)	.065	1	.799
		Lit	6.742	2	.034
		Lit(1)	6.521	1	.011
		Lit(2)	5.208	1	.022
		Relig_ion	4.266	4	.371
		Relig_ion(1)	.538	1	.463
		Relig_ion(2)	3.349	1	.067
		Relig_ion(3)	.035	1	.852
		Relig_ion(4)	.857	1	.355
		Marital_status(1)	44.613	1	.000
		Ethni_city	7.595	5	.180
		Ethni_city(1)	3.358	1	.067
		Ethni_city(2)	1.885	1	.170
		Ethni_city(3)	.698	1	.404
		Ethni_city(4)	.276	1	.599
		Ethni_city(5)	.012	1	.914
	Overall Statistics		66.411	22	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	78.031	22	.000
	Block	78.031	22	.000
	Model	78.031	22	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	314.056[a]	.240	.321

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted: Condom use at last sexual debut: Yes	Predicted: Condom use at last sexual debut: No	Predicted: Percentage Correct
Step 1	Condom use at last sexual debut	Yes	100	30	77.1
		No	48	107	69.0
	Overall Percentage				72.7

a. The cut value is .500

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MV013(1)	-.070	.315	.049	1	.825	.933
	MV024			2.340	2	.310	
	MV024(1)	-1.594	1.145	1.937	1	.164	.203
	MV024(2)	.180	.344	.274	1	.601	1.197
	MV106			1.499	3	.683	
	MV106(1)	-.838	1.162	.519	1	.471	.433
	MV106(2)	-.747	.618	1.460	1	.227	.474
	MV106(3)	-.473	.527	.806	1	.369	.623
	MV190			2.991	4	.559	
	MV190(1)	-.531	.946	.315	1	.575	.588
	MV190(2)	.568	1.080	.277	1	.599	1.765
	MV190(3)	.929	.738	1.586	1	.208	2.533
	MV190(4)	-.215	.401	.289	1	.591	.806
	Lit			4.069	2	.131	
	Lit(1)	-1.415	.795	3.167	1	.075	.243
	Lit(2)	-.517	.888	.338	1	.561	.596
	Relig_ion			2.585	4	.629	
	Relig_ion(1)	.148	.493	.090	1	.764	1.160
	Relig_ion(2)	-.573	.610	.881	1	.348	.564
	Relig_ion(3)	-.050	.519	.009	1	.923	.951
	Relig_ion(4)	.496	.660	.566	1	.452	1.643
	Marital_status(1)	2.584	.480	29.001	1	.000	13.249
	Ethni_city			13.072	5	.023	
	Ethni_city(1)	-1.672	.563	8.815	1	.003	.188
	Ethni_city(2)	-.435	.513	.719	1	.396	.647
	Ethni_city(3)	-.591	.665	.789	1	.374	.554
	Ethni_city(4)	-1.464	.507	8.324	1	.004	.231
	Ethni_city(5)	-.995	.655	2.311	1	.128	.370
	Constant	2.326	1.149	4.094	1	.043	10.233

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	MV013(1)	.503	1.730
	MV024		
	MV024(1)	.022	1.917
	MV024(2)	.610	2.348
	MV106		
	MV106(1)	.044	4.222
	MV106(2)	.141	1.591
	MV106(3)	.222	1.750
	MV190		
	MV190(1)	.092	3.756
	MV190(2)	.213	14.648
	MV190(3)	.596	10.759
	MV190(4)	.368	1.768
	Lit		
	Lit(1)	.051	1.154
	Lit(2)	.105	3.403
	Relig_ion		
	Relig_ion(1)	.441	3.048
	Relig_ion(2)	.171	1.864
	Relig_ion(3)	.344	2.633
	Relig_ion(4)	.451	5.983
	Marital_status(1)	5.173	33.931
	Ethni_city		
	Ethni_city(1)	.062	.567
	Ethni_city(2)	.237	1.769
	Ethni_city(3)	.150	2.040
	Ethni_city(4)	.086	.625
	Ethni_city(5)	.102	1.334
	Constant		

a. Variable(s) entered on step 1: MV013, MV024, MV106, MV190, Lit, Relig_ion, Marital_status, Ethni_city.