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Wealth and sexual behaviour among men in Zimbabwe

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WEALTH AND SEXUAL BEHAVIOUR AMONG MEN IN ZIMBABWE

A RESEARCH REPORT SUBMITTED TO THE SCHOOL OF SOCIAL SCIENCE, FACULTY OF HUMANITIES, UNIVERSITY OF WITWATERSRAND, JOHANNESBURG, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE IN MASTER OF ARTS IN THE FIELD OF DEMOGRAPHY AND POPULATION STUDIES FOR THE YEAR 2010

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30 July, 2011

DECLARATION

I, Shepstone Musiyarira, declare that this research report is my own unaided work. It is submitted for the degree of Master of Arts in Demography and Population Studies at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination in any other university.

Signed:

Shepstone Musiyarira

Date: 1 July, 2011

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Dedication

To my wonderful children Delroy, Simbarashe, Tapiwanashe and Anotidaishe

Acronyms

Acronyms:

ZDHS	Zimbabwe Demographic and Health Survey
HIV	Human Immunodeficiency Virus
MCP	Multiple Concurrent Partnerships
SSA	Sub-Saharan Africa
ZNAC	Zimbabwe National Aids Council

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Key words: Wealth, Sexual behaviour, Multiple and Concurrent sexual partnerships

ABSTRACT

INTRODUCTION: Zimbabwe has witnessed a decline in HIV prevalence in the general population estimated to be 27% in 2001, 19% in 2005, 16% in 2007 and 14% in 2009 (Mapingure et al., 2010). Whilst it is a notable decline the rate is still high. Sexual behaviour change has been reported as key to this HIV prevalence decline. Partner reduction has been advocated as an important strategy in HIV prevention. Understanding the socioeconomic and demographic factors influencing the sexual behaviours that are either sustaining the declining, yet still high, prevalence rates is critical to inform interventions. There is growing interest in the association between individual's socioeconomic status and sexual risk taking behaviour in sub-Saharan Africa. The general objective was to examine the association between wealth and sexual behaviour among men in Zimbabwe.

METHOD: Analysis of data from 7175 sexually active aged 15-54 years who participated in the Zimbabwe's 2005/06 Demographic and Health Survey was done using logistic regression models and have reported odds ratios (OR) with Confidence intervals. In the multiple logistic regressions, two models were used. Model 1 included variables: wealth, age and education whilst in model 2 we controlled for: marital status, type of residence, region of residence and religion because these socio-demographic factors influence male sexual behaviour. The dependent variables included: unprotected sex at last encounter, multiple and concurrent sexual partnerships in last 12 months.

RESULTS: When we controlled for potential confounding effects of education, age, marital status, type of residence, region of residence and religion, men in the middle wealth category of the population were less likely to have engaged in unprotected sex in the last encounter with a non-spousal cohabiting partner (OR 0.41, 95% CI 0.22 to 0.76). Wealth was found to be not statistically significantly associated with multiple and concurrent sexual partnerships.

CONCLUSION: Wealthy men in Zimbabwe are less likely to engage in unprotected sex. Wealth's association with multiple and concurrent sexual partnerships was not confirmed in this study. Equitable distribution of wealth and sound economic policies are critical in improving the general welfare of nationals so as to reduce or eliminate some of the factors that cloud the associations between socioeconomic and demographic factors and sexual behaviours of individuals. Policies and programs that recommend deferral of gratification remain critical in order to reduce number of partners.

CONTENTS

CHAPTER 1 9
1.0 Introduction and Background 9
1.2 Problem Statement 11
1.3 Research Question 16
1.4 Research Objectives 16
1.5 JUSTIFICATION OF STUDY 16
1.6 Definition of terms 18
CHAPTER 2 19
2.0 LITERATURE REVIEW 19
Introduction 19
Sexual behaviour of men 19
Socio-demographic determinants of behaviour 22
Wealth and Sexual behaviour of men 25
2.1 Conceptual and Theoretical Framework 28
CHAPTER 3 33
METHODS 33
3.1 Study Design 33
3.3 Variable Definitions 35
3.3.1 Dependent Variables 35
Table 3.1 Definition of dependent variables 36
3.3.2 Independent variables 38
3.4 Hypothesis 40
3.5 Ethical Considerations 41
3.6 Data Management 41
3.7 Data Analysis 42
CHAPTER 4 45
4.0 RESULTS 46
4.1 Characteristics of the respondents 46
4.1.2 Socio-demographic Characteristics of the respondents 46

4.1.3 Sexual behaviour characteristics of the respondents 49
4.1.4 Crosstabulation of sexual Behaviours and Wealth status 50
4.2 Bivariate analysis results 57
CHAPTER 5 68
5.0 MULTIVARIATE ANALYSES 68
5.2 Multiple logistic regression modelling results 70
CHAPTER 6 77
DISCUSSION 77
Chapter 7 84
7.0 CONCLUSIONS AND RECOMMENDATIONS 84
7.1 Conclusions 84
7.2 Recommendations 84
7.3 Limitations of the study 86
7.4 Areas of further research 88

CHAPTER 1

1.0 INTRODUCTION AND BACKGROUND

In the Sub-Saharan Africa, Zimbabwe has attracted regional and international attention because of a plethora of socioeconomic and political reasons. Not enough attention has been given to Zimbabwe's ability to contain HIV and AIDs amidst a weak economy, poor international rapport, support, deteriorating health delivery system, increased local and international out migration. In the general population, HIV prevalence in Zimbabwe was estimated to be 27% in 2001, 19% in 2005, 16% in 2007 and 14% in 2009 (Mapingure, et. al, 2010; Halperin, et. al, 2011). Among pregnant women (15-49 years), HIV prevalence declined from 32% in 2000 to 26% in 2002, 18% in 2006 (Mapingure, 2010). The country is experiencing a decline in HIV prevalence, but the figures are still very high. The decline remains a key development achievement, considering Zimbabwe's context. This country is a key learning case with best practices that the rest of the developing countries especially countries in the Sub-Saharan Africa region can take a cue from.

The decline in HIV prevalence has been attributed by Halperin et al. (2011) to a number of factors but the reduction in sexual partners played a significant role in reducing HIV prevalence in Zimbabwe. The behaviour change celebrated, in this decline in HIV prevalence, was traced to a greater awareness of AIDS deaths, in addition to the country's economic deterioration, which left many men with less fungible resources or disposable income for transactional sex or maintain multiple concurrent sexual relationships. The researchers also reported that the prevention programs that provided educational messages through the mass media and interpersonal communication were likely to have also played a key role in influencing sexual behaviours of Zimbabweans (Halperin, et. al, 2011).

A number of key socioeconomic and demographic factors tend to influence risky sexual behaviours such as religion, culture, income, education, age, gender, sex and wealth. Apparently in Southern Africa, one of the socioeconomic factors that have been of interest to researchers is wealth. The wealthy nations like South Africa, Botswana and Ivory Coast have recorded generally high infection rates (Asare and Annim, 2008), with the poor countries like Zimbabwe, interestingly with low infection rates. This has increased interest among researchers who have reported that wealth status be positively associated with HIV infection in this region (Asare and Annim, 2008).

One of the major reasons that have brought the decline of Zimbabwe's HIV prevalence rates has been attributed to partner reduction due to inability by men to finance transactional sex and sustain concurrent sexual partnerships (Halperin, et. al, 2011). However according to Chingandu, (2007), casual sex seemed to have been replaced by "small house" phenomenon, a form of concurrent sexual partnership that seems "socially acceptable" considering its frequency in the urban areas. This is a sexual behaviour considered by some Zimbabwean men as a safer way of dealing with HIV and AIDS (Chingandu, 2007). The "small house" is " an informal, long- term, secret sexual relationship with another woman who is not a man's legal wife, carried on in a house that is a smaller version of the man's own home in another residential suburb" (Chingandu, 2007: p, 1). This form of concurrent sexual partnership practice is said to be common in other African countries often romanticized with a different name and context, like in Uganda (Parikh, 2007) and in Nigeria (Smith, 2007). Apparently, the sexual practice of "small house" seems to be driven mostly by wealth as mostly the men that have enough resources, to meet the needs of both the secondary and primary partners are able to engage in this sexual network (Chingandu, 2007).

What then are the socioeconomic and demographic factors that are influencing male sexual behaviours in Zimbabwe? Does wealth status of men in Zimbabwe associate with selected sexual behaviours? This study may help contribute to the understanding of the declining yet still high HIV prevalence rates in the country.

1.2 PROBLEM STATEMENT

Whilst there has been a notable decline in HIV prevalence rate since 2001, the rate is still high. Sexual behaviour change has been reported as key to this HIV prevalence decline. Of interest to planners, researchers and development stakeholders are the sexual behaviours that are either sustaining the prevalence rates in the high category (more than 10%, for the purposes of this study). It is these sexual behaviours that either contributes to the overall decline since 2001 or sustaining the HIV prevalence above 10%.

Hattori et al. (2010) noted that 11% of all the sexually active adults in Zimbabwe were engaging in the risky concurrent sexual partnerships in the month preceding the survey by Populations Services international. Amongst the married or cohabiting survey respondents, it was reported that 13% had reported having had sex with someone other than the main partner in the past month before the survey. It was also reported that 20% of those married or cohabiting men reported another sexual relationship, with only 5% of women reporting the same. In Zimbabwe, men ages 15-49 face a lower HIV prevalence rates of 15% compared to women at 21% in the same age group. This pattern is characteristic of the Southern and the east African regions (Hattori, et. al, 2010).

Most of the HIV infections in Zimbabwe are contracted through heterosexual contact (ZDHS, 2005/6). Thus in order to design and monitor intervention programs to contain the HIV infection spread, information on sexual behaviour is critical. The ZDHS (2005/6) reports that the high-risk sexual behaviour was noted more common among those who were not married at the time of the interview than among currently married respondents. The married men who engaged in high-risk sex were more likely to report condom use at last higher-risk sex than the unmarried ones. The group that had the highest average number of lifetime sexual partners (9.4 partners for men and 2.2 partners among women) was the divorced, separated, or widowed respondents (ZDHS, 2005/6). Urban residents compared with the rural residents, were both more likely to report engaging in risky sexual behaviour and using a condom at last higher-risk sex. Urban men reported an average of 6.2 lifetime sexual partners compared to 5 sexual partners among rural men (ZDHS, 2005/6).

The ZDHS (2005/6) noted that 4% of men reported paying for sexual intercourse at least once during the 12 months preceding the ZDHS. Condom use during the encounters was reported among nearly three-quarters of men who engaged in paid sex used a condom the last time they paid for sex. Divorced, widowed, and separated men (13 percent) had the highest rate of paid sex during the 12 months prior to the survey. In the survey, it was also reported that 20% of the divorced, separated, or widowed men who engaged in paid sex did not use a condom (ZDHS, 2005/6). Upon comparing the 2005-06 and 1999 ZDHS results show that, while Zimbabwean men may increasingly be avoiding the risks involved in transactional sex, when they do engage in paid sex, they are less likely than previously to use a condom. In 1999, it was reported that 7 % of these men paid for sex and 82 % reported condom use during last paid intercourse while, in the 2005-06 ZDHS, 4 % paid for sex and 74 % used a condom the last time they paid for sex (ZDHS, 2005/6).

Hattori (2010) agrees with Chingandu (2007) that within Zimbabwe there is a common practice called “small house” or an extramarital affair with another woman which has seemingly replaced casual sex. To these men faithfulness and monogamy are Western ideals and un-African. The men perceive “small houses” as non risky for HIV at all since the secondary partners are considered as faithful just like the primary sexual partner (legal wife/ partner). Use of condom with her is tantamount to accusing her of infidelity and may offend her (Chingandu, 2007). Population Services international (2008) reported that peer social pressure and perceived costs about loss of social status were important drivers in having more than one regular partner for men.

Sexual behaviours of both men and women have been greatly influenced by the patterns of migrant labour in Zimbabwe. To a great extent the marriage institution has been greatly affected. During the colonial era male Zimbabwean migrated to labour reserves or mines in the urban areas. Mazur (1987), reported that these migratory tendencies further increased after the war of liberation in 1980 with 50-75% males aged 25-44 migrating from rural to urban areas (Hattori, 2010). More internal migration was observed after the controversial land reform program and poor resettlement policies in 2000 which negatively affected agricultural production and the livelihoods of farm workers (Uusihakala, 2007; Hattori, 2010). The instability continued to be a push factor, pushing men into urban areas in search of economic opportunities. The negative effects of these migrations were much felt on marriages as married partners were forced to stay apart for the longest part of their time. Hattori et al. (2010) reports that the small house phenomenon is common in countries surrounding Zimbabwe such as Botswana, Namibia, Mozambique and South Africa.

These findings to a greater extent highlight the important association between economic instability and risky sexual behaviours such as multiple and concurrent sexual partnerships. A number of key socioeconomic and demographic factors have been known to influence risky sexual behaviours among both men and women. These factors include religion, culture, income, education, age, gender, sex and wealth to name a few for the purposes of this study.

In comparison to the wealthy nations in sub-Saharan Africa, that have recorded generally high infection rates (Asare and Annim, 2008). Zimbabwe is among the poorest nations in the same region with HIV prevalence rates greater than 14%. It is against this background that questions have been raised on the association between wealth and HIV infection in the region. Research reports have highlighted that wealth status has been positively associated with HIV infection in Southern Africa (Asare and Annim, 2008)

However the scenario, observed amongst the above named countries in the region that is Botswana, South Africa and Ivory Coast, is somewhat different at the individual or household level. Mixed patterns have been recorded on the association between wealth status at the individual or household level and HIV infection levels and this has generated interest amongst researchers. Individual or household background characteristics have been noted to be associated with risky sexual behaviours. It is these background characteristics that are fuelling the epidemic yet at the same time these background characteristics can also be protective determinants. There has been extensive debate on the link between wealth status and level of infection; wealth status and risky sexual behaviours with other researchers using “levels of infection” and “risky sexual behaviours” interchangeably (Asare and Annim, 2008).

It must be reiterated that there seems to be increasing evidence on the association between socioeconomic status of individuals and risky sexual behaviours in sub-Saharan Africa (Asare and Annim, 2008). A number of broad associations that include positive, neutral and negative associations between wealth status and risky sexual behaviour have been reported. Understanding of these associations including the determinants that influence social behaviour, interactions and activities of subgroups, is critical in facilitating the reduction of sex partners as a behavioural change strategy in fighting HIV (Asare and Annim, 2008). This study attempts to contribute to this understanding.

A thorough understanding of the social and demographic determinants of men's sexual behaviour in Sub-Saharan Africa informs interventions promoting partner reduction among men. Such understanding is critical for interventions to be effective. It should be noted that not much research has been done to inform policy and interventions that target men. This may be due to the focus on women's issues that emerged in the early 1990s and after the International Conference on Population and Development in Cairo, 1994. This premise unfortunately continues to dominate the social scientific thinking about HIV in Africa; ignoring men yet are a key variable in the HIV infection function (Ankrah, 1991; Caravano, 1991; de Bruyn, 1992; Bingenheimer, 2010). Of the social and demographic factors that have been studied, research on sexual behaviours of men has not given enough attention to wealth as an independent variable. Most studies have treated wealth as a control variable. An understanding of some of the determinants that can influence sexual behaviour, interactions and activities of subgroups will make a difference in the development of new strategies or policies to combat HIV not to mention the redistribution of resources on prevention strategies with known efficacy.

1.3 RESEARCH QUESTION

Is wealth status of men in Zimbabwe associated with their sexual behaviour?

1.4 RESEARCH OBJECTIVES

1.4.1 General Objective

I. To examine the association between wealth and sexual behaviour among men in Zimbabwe.

1.4.2 Specific Objective

i. To examine the sexual behaviour of men in Zimbabwe

ii. To examine socio-demographic factors related to sexual behaviour of men in Zimbabwe

iii. To determine the association between wealth and sexual behaviour of men in Zimbabwe.

1.5 JUSTIFICATION OF THE STUDY

There is debate on the increasing new evidence that seem to suggest broad associations between socioeconomic status of individuals and risky sexual behaviours in sub-Saharan Africa. The associations, emerging, between wealth status and risky sexual behaviour are either positive, neutral or negative (Asare and Annim, 2008). Thus this study will contribute to this debate. The Zimbabwean case, in this study, is interesting as the country is going through an economic recession. Their economic policy has been questioned by the local and international community but has still as a country managed to reduce its HIV prevalence rates from 25% five years ago to 13% now. It is my considered view that this brings in an interesting development in the aforementioned development. Thus this study on Zimbabwe will provide some contribution to

enrich the debate on these varied associations between socioeconomic status of individuals and risky sexual behaviours in sub-Saharan Africa.

The study explores the relationship (if any) between wealth status and risky behaviours limited for the purposes of this research to multiple concurrent partnerships and number of lifetime sexual partners as individual sexual behaviours that expose individuals at risk of contracting HIV using the 2005/6 Zimbabwe Demographic and Health Survey. This is pertinent to understand considering the risks exposed to the vulnerable and unsuspecting partners in a multiple concurrent partnership network. Most infections in Zimbabwe are contracted through heterosexual contact thus information on the level of sexual intercourse with a partner other than wife, cohabiting partner is critical for planning prevention programs and policy planning (ZDHS, 2005/6). The extent of the problem of "small house" in Zimbabwe will be indirectly quantifiably extrapolated by proxy through levels of multiple concurrent partnerships amongst the married men.

Behaviour change is central to fighting HIV in Sub-Saharan Africa but to facilitate such change requires a deeper understanding of some of the determinants that influence social behaviour, interactions and activities of subpopulations (Asare and Annim, 2008). The study examines wealth as a background characteristic that influences sexual behaviour with the aim of informing HIV prevention programming and policy on salient factors to consider, that erode and compromise prevention efforts unnoticed. This ensures that resources are channelled towards prevention strategies with known efficacy.

1.6 DEFINITION OF TERMS

WEALTH

Various definitions and concepts of wealth have been asserted by various individuals and in different contexts (Denis, 1996). In general, wealth is the abundant acquisition of items of economic value, or the state of controlling or possessing such items of economic value which are often in the form of money, real estate and personal property. For the purposes of this study, the wealth considered is the household wealth, which is the net worth or, precisely, the value of physical and financial assets less liabilities of a household (Davies, et. al, 2008).

SEXUAL BEHAVIOUR

Sexual behaviour is defined as any behaviour that increase the risk of negative consequences associated with sexual contact that includes HIV and AIDS or other sexually transmitted infections (STIs) and unplanned pregnancy. The sexual behaviours include among many, engaging in unprotected sex, multiple and concurrent sexual partnerships.

CHAPTER 2

2.0 LITERATURE REVIEW

INTRODUCTION

Sub-Saharan Africa's poorest nations make up 60% of the 2.5 million HIV infections in the region (Asare and Annim, 2008). Zimbabwe is amongst the seven African countries in which HIV prevalence exceeds 15%. The 2005/6 Zimbabwe DHS reports that knowledge levels of HIV and AIDS were generally universally high with 99% of men aged 15-49 years reporting that they had heard of HIV or AIDS. Less than half of these men (47%) had comprehensive knowledge about the modes of HIV transmission and prevention (ZDHS, 2005/6). Sadly, this high knowledge has not translated into safer sexual behaviours and practices (ZDHS, 2005/6).

SEXUAL BEHAVIOUR OF MEN

Risky male sexual behaviour, whatever drives it, results in sexually transmitted diseases, among which is HIV. This is important because HIV infection constitutes the majority of mortality burden and morbidity associated with Sexually Transmitted Infections (Slaymaker, et. al, 2004). Examination of determinants of male sexual behaviour is crucial if strategies have to be developed to curb the pandemic. There have been, however, different schools of thought on the determinants of HIV in sub- Saharan Africa.

The sexual behaviours considered in this study are classified into two broad categories namely (i) indiscriminate behaviours (concurrent sexual partnerships, multiple concurrent sexual

partnerships, having risky, casual or unknown partners; and failure to discuss issues of risk prior to sexual encounter) and (ii) failure to take protective actions (use of condoms for protection and for birth control) (Cooper, 2002). Only few sexual behaviours were considered. An important question is about how the socioeconomic, demographic factors and sexual behaviours contribute to HIV Infection?

MULTIPLE AND CONCURRENT SEXUAL PARTNERSHIPS

According to UNAIDS Gaborone Meeting Report (2009), an expert think tank meeting reported that frequency of multiple concurrent sexual partnerships was identified as the key factor that was driving the HIV epidemic in SADC countries. This was also facilitated by other factors such as inconsistent correct use of condoms, low levels of male circumcision, gender inequality and low levels of male involvement and responsibility for sexual and reproductive health (UNAIDS 2009)**.** Scientific literature is awash with evidence of concurrent sexual partnerships as an important factor reinforcing rapid growth of the HIV epidemic, particularly in Southern Africa.

Concurrent sexual practices according to Pebody (2009) describe situations in which an individual has overlapping sexual relations with more than one person. A sexual partnership is considered to be concurrent if a person reports having two or more sexual partners in the past month that overlap in time. Different time frames to describe multiple concurrent sexual partnerships are often used by different experts, including concurrent sexual partnerships that last one month or longer (Mah and Halperin, 2008; UNAIDS, 2009).

The current population surveys often measure multiple concurrent partnerships as two or more sexual partners over the last 12 months. This however does not differentiate concurrent or other

multiple partnerships. For the purposes of this study, concurrent sexual partnerships were extracted from number of sexual partners including wife or partner. Those that reported one partner other than wife were considered in this study as having concurrent sexual partnerships. Those men who reported having two or more partners other than wife were considered as having multiple concurrent sexual partnerships.

Multiple and concurrent sexual partnerships enhance HIV transmission when compared to sequential or serial partnerships. This is so because new infections tend to spread much faster through the sexual network when members of the network are simultaneously connected. They also enhance HIV transmission, because of the high levels of viral load in acute (early stage) HIV infection that facilitates transmission. This is why there has been emphasis in partner reduction interventions (Slaymaker, et. al, 2004).

UNPROTECTED SEX

Condoms are efficient in preventing the transmission of HIV and other sexually transmitted diseases (Weller and Davis 2002; Slaymaker, et. al, 2004). However in a study carried out among men who attended an STI clinic in India, there was a protective association between reported condom use and HIV infection, an observation different from what is witnessed in African countries. The difference emanates from the fact that in African countries, condom use is often a sign or marker for risky sexual behaviour. Those that use condoms are those that see themselves at risk of infection. In such instances condoms would be protective if they were used correctly and consistently at each risky encounter. Condoms would also be protective if those in the HIV risky groups were initially more likely to use condoms. This protective effect would be apparent in the

population as condoms use becomes more widespread. Acceptability of alternative methods of contraception might affect the probability of a couple using a condom (Slaymaker, et. al, 2004).

SOCIO-DEMOGRAPHIC DETERMINANTS OF BEHAVIOUR

This study addresses a number of key socioeconomic and demographic factors linked to these risky sexual behaviours include religion, culture, income, education, age, gender, sex and wealth.

EDUCATION LEVEL

Higher income and education provide a protective effect against infection from HIV. Individuals with higher education have access to capital or fungible economic resources. These enable them to access protection and HIV prevention information. The educated also have the cognitive apparatus to process information since they have an education. Thus they seek protection or seek treatment of sexually transmitted diseases when infected for example (Asare and Annim, 2008; Bingenheimer, 2010). A study in Yaoundé in Cameroon showed that educated men were more likely to adopt safe sexual behaviours (Kongnyuy et.al, 2006). However, unsafe sexual behaviour has also been reported as significant with increasing education amongst Cameroon men (Glynn, et. al, 2004). A similar pattern was reported in the Rakai District of Uganda (Kirunga and Ntozi, 1997). Although the risk of HIV infection increased with the level of education in South-Western Uganda in 1989/1990, this trend reversed over the following decade such that in 1999/2000. The risk of HIV decreased with increasing education (Kongnyuy et.al, 2006; Paasche-Orlow, et. al, 2005; Walgue et.al, 2005).

AGE

There is a correlation between age and whether or not an individual is sexually active and the likelihood that the individuals' sexual partner is their spouse. In countries with recent development of the epidemic, those countries with with low prevalence, the older age groups are likely to have lower cumulative exposure to infection if most of their past sexual exposure occurred during a period of low prevalence. Slaymaker et al. (2004) did not find any association between HIV infection and young age. Where there was an association, it was not always in the same direction and sometimes different for men and women (Slaymaker, et. al, 2004). According to Asare and Annim (2008), in both Ghana and Kenya, for both males and females sexual risk taking behaviour was higher among the youth than the other older age groups.

TYPE OF RESIDENCE / REGION OF RESIDENCE/ TRAVEL/ WORKPLACE

Various studies have measured differently, factors such as travel, type of place of residence, region of residence and occupation or place of work. In most of the studies in which these factors were associated with HIV infection, they were acting as proxy measures for potential encounter with infected sexual partner (Auvert, et. al, 2001a; Nunn, et. al, 1994; Quigley, et. al, 1997; Seed, et. al, 1995; Slaymaker, et. al, 2004). These factors are known to influence the number of sexual partners and proportion of available partners who are infected.

In some studies, in the same country, different regions may show the different sexual behaviours. This is mostly because the regions would be at different stages in the transition from unsafe to safer sexual behaviours (Kongnyuy, et. al, 2006). The urban areas, compared with rural areas, have reported more prevalent unsafe sexual behaviours. However in the Nyanza province in Kenya, unsafe sexual behaviours were more prevalent in the rural areas compared to urban areas

(Voeten, et. al, 2004). An increase in HIV prevalence in rural areas and a trend towards a decline in some cities was also noted (Hladik, et. al, 2006). This implies that different regions, like for education, might be at different stages of the HIV epidemic besides the different socio-cultural practices that influence particular sexual behaviours (Asare and Annim, 2008).

MARITAL STATUS

Married people are considered as more likely to have sex more frequently than those who are not married. Any sex outside marriage or co-resident (cohabiting) relationships is associated with a higher probability of HIV infection. This is so because these men act as a bridge between the outside world and their household environment (Kimuna and Djamba, 2005). Prevalence of HIV is generally low amongst the married or co-resident partners because sex between co-resident partners is usually considered as having a lower risk than with other partners. This however depends on how much concurrent sexual partnership occurs. There is a general variation in the proportion of married people engaged in concurrent sexual partnerships varies between countries. In countries with high prevalence of HIV, surviving spouses tend to have high HIV prevalence when compared with those still married. In some countries being currently has been associated with increased HIV infection. This is due to gaining of new sexual partner upon marriage compared with the never married (Auvert, et. al, 2001b; Slaymaker, 2004) and the increase in unprotected sexual frequency in marriage may also increase HIV infection risk (Slaymaker, 2004).

Hattori (2010) agrees with Chingandu (2007) that within Zimbabwe there is a common practice called “small house” or an extramarital affair with another woman which has seemingly replaced casual sex. This form of concurrent sexual partnership practice is also common in other African

countries often romanticized with a different name and context, like in Uganda (Parikh, 2007) and in Nigeria (Smith, 2007).

RELIGION

Religion imposes social control mechanism (social values) amongst its followers and thus tends to have a protective effect against risky sexual behaviours. In some countries, the traditional mechanisms of social controls have been augmented by the rise and spread of religion especially the Pentecostal and Charismatic Christian churches in Africa (Meyer 2004; Bingenheimer, 2010). The churches have continued to spread the ideology that equates personal respectability and success with behavioural adherence to a moral code that castigates and prohibits premarital sex, extramarital sex and polygamy. Notably, a combination of elders with authority in a village setting and the growing pressure of these churches create a restrictive regime with respect to sexuality (Bingenheimer, 2010). Religion has been innately engraved in cultures and the level of being religious varies from country to country and region to region (Kongnyuy, et. al, 2006).

WEALTH AND SEXUAL BEHAVIOUR OF MEN

In Southern Africa, the more economically stable and wealthy nations like South Africa, Ivory Coast and Botswana have higher HIV prevalence rates, showing a positive association between wealth status and HIV infection levels. The scenario is however different at the individual or household level. Mixed patterns have been reported on the association between wealth status at the individual or household level and HIV infection levels. Individual or household background characteristics have been noted to be associated with risky sexual behaviours. The background

characteristics influence the epidemic yet at the same time act as protective determinant (Asare and Annim, 2008).

Asare and Annim (2008) noted increasing evidence on the association between socioeconomic status of individuals and risky sexual behaviours in sub-Saharan Africa. A plethora of broad associations has emerged in that include positive, neutral and negative relationships. To Asare and Annim (2008), wealthy men are more likely to engage in risky sexual behaviours than their poor counterparts. These wealthy men are able to do so because they tend to have wider social networks and have more disposable income. Such findings are consistent with Bingenheimer (2010) who postulated the same, by noting that men with fungible economic resources are more likely to engage in multiple concurrent partnerships when compared with poor men.

HIV prevalence in the adult population in Cameroon was reported at 55% significantly higher in wealthy people than in the poor group of the population according to the Cameroonian DHS (2004). HIV prevalence was 6.6% among the people in the richest quintile compared to 2.4% amongst the poorest quintile. Wealthier men in Cameroon were more likely to start sexual activity at an early age compared with poorer men. The wealthier men were likely to have unprotected sex with a non spousal non cohabiting partner, have multiple concurrent partners and also have multiple lifetime sexual partners (Kongnyuy, et. al, 2006). Mitsunaga, et.al (2005) reported similar results in Nigeria in which wealthy Nigerian men were more likely to engage in extramarital sex than their poorer counterparts (Kongnyuy, et. al, 2006). The association of wealth and sexual behaviour has been supported by evidence from Cameroon, Ghana, South Africa and Nigeria (Fox, 2010; Parikh, 2007; Smith, 2007; Kimuna and Djamba, 2005).

These findings however are not consistent with those of other researchers. In Zambia for example, none of the proxies of wealth (education, occupation and household wealth index) were associated with negative sexual behaviour like extramarital sex (Kimuna and Djamba, 2005). The differences in socio-cultural practices and the different stages of the HIV epidemic in different countries explain the differences (Kongnyuy, et.al, 2006).

Concepts to explain association between wealth / resources and sexual behaviours have been advanced. One perception, "Male as provider" is derived from historical literature on hunting and gathering societies and the studies of non-human primates (Hawkes, et. al, 1994). The perception here is that, the greater the man's ability to provide, the greater his chances of accessing females. The other concept "High quality male", says that males with more resources have greater access to females because females need resources to survive. High quality males out compete other males who do not have enough resources to provide for and help females (Hawkes, 1994). However these concepts have been refuted by other researchers who have argued that sexuality and risky sexual behaviours among men and women are driven by more complex drivers going beyond just the need by women for survival resources (Kimuna and Djamba, 2005).

Few studies that have examined the concept of "male as providers", "high quality males" and the related hypotheses, confirmed that men who control more resources or have a higher social capital (e.g. having a brother who can inherit one's wife and children after one's death) have been noted to have greater access to more female sex partners (Kimuna and Djamba, 2005). For Zimbabwe, quantitative studies that examined the association of wealth and sexual behaviour have been limited. This study examines the association between men's wealth and selected sexual behaviour that includes Unprotected sex in the last encounter, multiple and concurrent

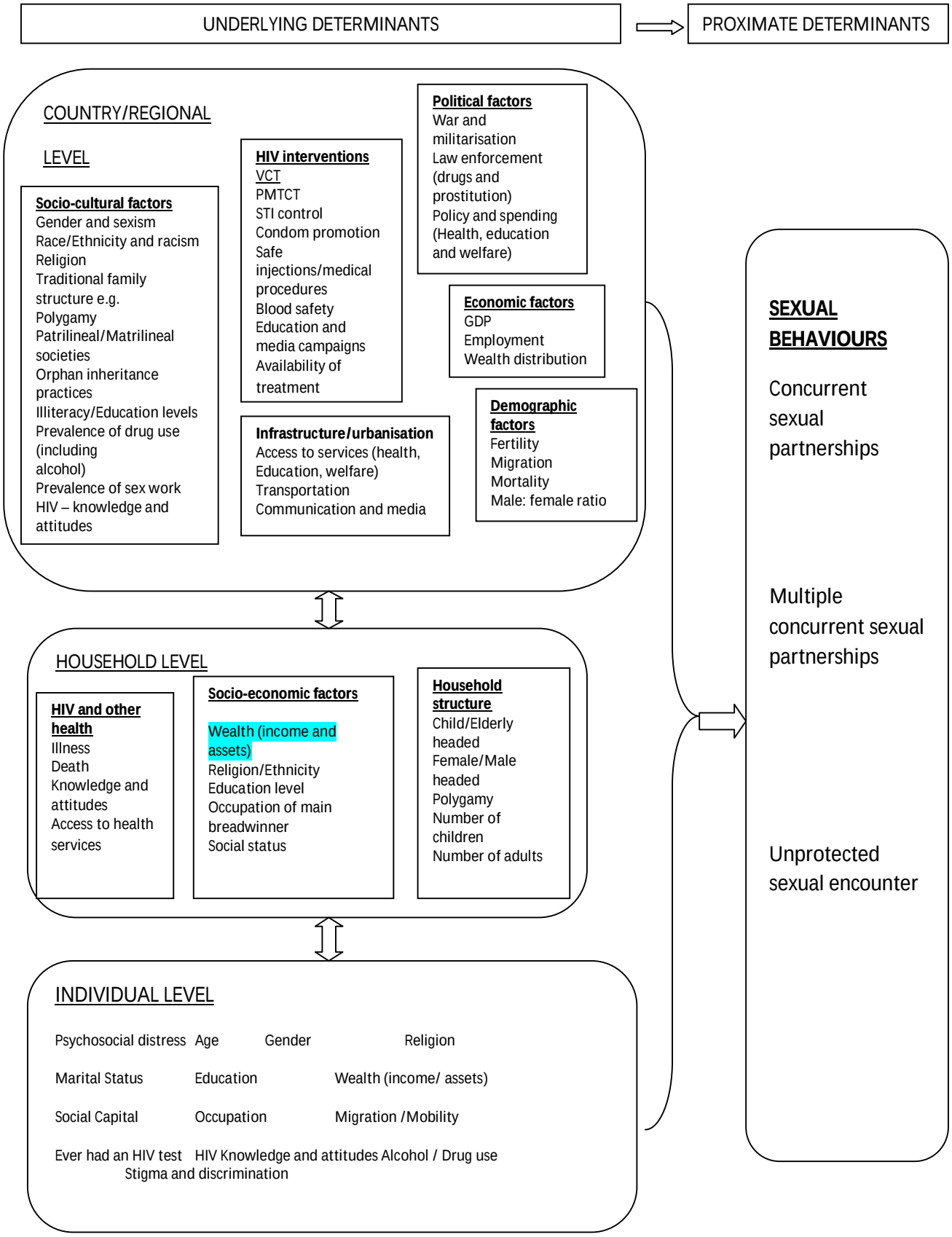
sexual partnerships in the past 12 months. The investigation is premised on the concept of "high quality men" and "male as providers" (Kimuna and Djamba, 2005) who then have more access to women. Sexuality is a complex phenomenon riddled by intertwining determinants. In this research we hypothesize that wealthier men will be more likely to engage in high risk sexual behaviours than their poor counterparts.

2.1 CONCEPTUAL AND THEORETICAL FRAMEWORK

Several models have been put forward to explain the complex risk factors that influence sexual health and HIV Risk (Robertson, 2010). A conceptual frame work is critical in guiding the collection, analysis and interpretation of data. The framework must explain the hierarchical and non hierarchical associations between different variables (Boerma and Weir, 2005).

In this study, the conceptual framework (Fig 1) was adopted and adapted from the Robertson et al. (2010) framework. This model, illustrated in Fig 1, however, was derived from Boerma and Weir (2005)'s model who developed the proximate determinants framework which integrates epidemiological and demographic approaches in explaining the distribution and determinants of HIV infection.

Fig 1: Determinants of sexual behaviour



Adapted from Robertson et al. (2010)

Their model was based on the proximate determinants framework used in demographic analysis of the determinants of fertility and child survival. This model was actually informed by a number of other conceptual frameworks that included the Bongaart's proximate determinants model (1978) , Mosley and Chen's conceptual framework for child survival, Mosley and Becker's analytical framework based on the Mosley-Chen framework (Robertson , et. al, 2010).

A brief review of the models that inform this study's conceptual framework shows that, Bongaart developed a simple statistical model in which any variation in the level of fertility, between populations or over time, can be decomposed which is known as Bongaart's (1978) proximate determinants model. The variation in fertility can be decomposed into variations in the proximate determinants of marriage (exposure to sexual intercourse), postpartum infecundity (associated with lactation and abstinence), induced abortion, and contraceptive use (Boerma and Weir, 2005).

Mosley and Chen (2003) used the proximate-determinants framework for fertility as a basis, to develop a conceptual framework for research on child survival. They used the framework to also facilitate and promote interdisciplinary communication and to provide a theoretical foundation for further investigation. The basic component of the Mosley-Chen framework is the specification of a set of proximate determinants through which all socioeconomic determinants must operate in order to influence the risk of morbidity and mortality among children (Boerma and Weir, 2005). They postulated that the underlying determinants of mortality and morbidity

exist at three levels that is the individual level, the household level and the community level. This framework was adapted and tested using data from Zimbabwe (Watts, et. al, 2007; Boerma and Weir, 2005; Robertson, et. al, 2010).

The social epidemiological framework was also developed using the eco-social approach by Poundstone, et. al. (2004). In this social epidemiological framework, the factors at multiple levels, that is, from the microscopic to societal level were considered as influencing the distribution of HIV in society.

As mentioned earlier, Robsertson, et. al, (2010) also derived their own conceptual framework from Boerma and Weir (2005) by expanding the model to show clearly the country/ regional, household and individual level, underlying determinants of HIV. Sexual behaviours in the study are considered as the proximate determinants of HIV infection besides the biological factors. The levels of the proximate determinants conceptual framework for the determinants of sexual behaviour leading to HIV infection or other negative sexual health outcomes in this study are shown in Fig 1. The framework shows the linkages between the social and environmental system on the left with the behavioural systems on the right. In this framework, the socio-cultural and economic determinants and program characteristics operate through the proximate determinants. These proximate determinants have direct links to the biological determinants, which affect the HIV incidence rate, HIV prevalence, and lead to disease and premature death. The proximate determinants have both behavioural and biological components. However, the biological factors were excluded for the purposes of this study. It is

critical to note that the emphasis of the conceptual framework is best understood as illustrating the sequence at the population level. This sequence starts from the underlying social, economic, and environmental factors at country or regional, household and individual level and eventually leads to exposure, transmission, infection, disease, and premature death (Boerma and Weir, 2005).

The conceptualization of pathways through which underlying socio-cultural and economic determinants, including interventions, may affect infection depends on the distinction between underlying and proximate determinants. This conceptual framework, however, is much closer to the Bongaart's (2003) fertility conceptual framework than to the Mosley and Chen conceptual framework for child survival (Boerma and Weir, 2005).

It is critical to note that this conceptual framework by Boerma and Weir (2005) has facilitated hypothesis generation relating to causal pathways between risk factors and HIV infection. The framework was tested using data from adults in Zimbabwe (Lewis, et. al, 2007; Lopman, et. al, 2008; Robertson, et. al, 2010). The theoretical framework in this study (Fig 1) was used to develop specific hypotheses regarding the relationship between socioeconomic determinant (wealth) and sexual behaviour and HIV infection. We expect wealth men in Zimbabwe to be more likely to engage in risky sex behaviours such as unprotected sex, engage in multiple and concurrent sexual partnerships (Kimuna and Djamba, 2005; Kongnyuy et.al, 2006; Asare and Annim, 2008)

CHAPTER 3

METHODS

3.1 STUDY DESIGN

This is a cross sectional study involving analysis of secondary data from the 2005/6 Zimbabwe Demographic and Health Survey (ZDHS).

3.2.1 THE ZIMBABWE 2005/06 DEMOGRAPHIC AND HEALTH SURVEY SAMPLING

A series of surveys are undertaken by the Central Statistics Office (CSO) as a part of the Zimbabwe National Household Survey Capability Program (ZNHSCP) and the worldwide Measure DHS Program. The 2005/6 ZDHS is one of these series of surveys. This survey was funded by the Government of Zimbabwe in collaboration with the United State Agency for International Development (USAID) and the US Presidents Emergency Plans for Aids Relief (PEPFAR) and many other international funders (ZDHS, 2005/6).

Zimbabwe was stratified according to its 10 Provinces namely Harare, Bulawayo, Masvingo, Manicaland, Mashonaland Central, Mashonaland East, Mashonaland West, Matabeleland North, Matabeleland South and Midlands. The 2002 Zimbabwe Master Sample (ZMS02) developed after the 2002 population census by the Central Statistics Office was used as the sampling frame. All the provinces were divided into four strata according to the land use (commercial, large-scale commercial farming, urban and semi-urban areas and resettlement areas) except for Bulawayo and Harare. Urban strata were formed for Harare and Bulawayo only. A total of 34 strata were established with 1,200 enumeration areas selected with the

probability proportional to the size (PSS), the size being the number of households enumerated in the 2002 census. A systematic, one stage operation was carried out independently for each of the 34 strata in the selection of enumeration area. In total, 10,800 households were selected (ZDHS, 2005/6).

3.2.2 Study Population and Sample size

For the current study, data were obtained for 7,175 sexually active men aged 15-54 years who participated in the HIV/AIDS-Related Knowledge, Attitudes and Behaviour Module of the ZDHS questionnaire survey. The Zimbabwean population amounted to 11.6 million according to the 2002 Census report. No matching was required for the participants.

3.2.3 Questionnaire design

Three separate questionnaires were used in the ZDHS namely the household, women and men's questionnaire. These questionnaires were adapted from the DHS Model questionnaire. This DHS Model questionnaire is made up of two models that reflect the population and health issues relevant to a country. These questionnaires however were in three languages namely English, Shona and Ndebele (ZDHS, 2005/6). The Men's Questionnaire however collected much of the same information that was collected by the Women's Questionnaire but was shorter as it excluded the detailed reproductive history or questions on maternal and child health or nutrition (ZDHS, 2005/6).

3.3 VARIABLE DEFINITIONS

3.3.1 DEPENDENT VARIABLES

The dependent variable in this study is unsafe sexual behaviour. For the purposes of this study, the sexual behaviour of men referred to is the high risk sexual behaviour of men. It is defined as any behaviour by men that enhance the chance of negative consequences associated with sexual contact that includes HIV and AIDS or other sexually transmitted infections (STIs) and unplanned pregnancy. These behaviours however are considered in two broad categories namely (i) indiscriminate behaviours and (ii) failure to take protective actions. The indiscriminate behaviours include, having multiple and concurrent sexual partnerships; having risky, casual or unknown partners; and failure to discuss risk topics prior to sexual encounter. The failure to take protective actions category of sexual behaviours includes the use of condoms for protection and for birth control. For the purposes of this study the sexual behaviours were limited to:

CONCURRENT SEXUAL RELATIONSHIPS IN THE LAST 12 MONTHS

Concurrent sexual partnerships are defined as "overlapping sexual partnerships in which sexual intercourse with one partner occurs between two acts of intercourse with another partner" (Lancet, 2009). This definition makes explicit the importance of sex with two different partners in temporally overlapping partnerships. This sexual behaviour was measured in the 2005/6 ZDHS by the question: *"In total (apart from this person/ these two people) with how many different people have you had sexual intercourse?"*

This was collapsed into two categories of the same variable:

(i) Own wife which was coded (0)

(ii) One non spousal partner which was coded (1)

Table 3.1 Definition of dependent variables

Table 3.1 Definition of dependent variables	
Variable	Category
Concurrent sexual partnerships	-Greater or equal to two female non spousal partner which was coded (Yes) -Less than two female sexual partners was coded (No)
Multiple concurrent sexual partnerships	-Greater or equal to two female non spousal partner (Yes) -Less than two female sexual partners (No)
Unprotected sex	-Did not use condom in the last sexual encounter (Yes) -Used condom in the last sexual encounter (No)

MULTIPLE CONCURRENT SEXUAL PARTNERSHIPS IN THE LAST 12 MONTHS

Multiple concurrent sexual partnerships are defined as overlapping sexual partnerships in which sexual intercourse with more than one partner occurs between two acts of intercourse with more than one other partner. Multiple concurrent sexual partnerships refer to the whether or not one had more than two sexual partners in the past year. This indicator is

intended to distinguish between the risks of concurrent sexual partnerships from that of having multiple sexual partnerships, a well-established risk factor for HIV transmission in several settings. This sexual behaviour was measured in the 2005/6 ZDHS by the question: *"In total (apart from this person/ these two people) with how many different people have you had sexual intercourse?"*

This was collapsed into two categories of the same variable:

(i) Less than two female sexual partners was coded (0)

(ii) Greater or equal to two female non spousal partner which was coded (1)

UNPROTECTED SEX IN THE LAST ENCOUNTER

Unprotected sex is having sex without using condoms for protection from STIs or prevention of pregnancy.

This sexual behaviour was measured in the 2005/6 ZDHS by the question: "*The last time you had sexual intercourse (with this second or third person) was condom used?*

This was collapsed into two categories of the same variable:

(i) Did not use condom in the last sexual encounter : (Yes) which was coded (1)

(ii) Used condom in the last sexual encounter: (No) which was coded (0)

3.3.2 INDEPENDENT VARIABLES

The background characteristics in Table 3.2 include all variables that provide a better socio-demographic background of the men who participated in the HIV/AIDS-Related Knowledge, Attitudes, and Behaviour module.

WEALTH

For the purposes of this study wealth index was used to measure the household wealth. It is one of the background characteristics used in this research. The wealth index was developed and tested in many countries basing on inequalities in household income, use of health services, and health outcomes. It is an index of wealth that is consistent with expenditure and income measures (Rutstein, et. al, 2000). The wealth index was constructed using household asset data including ownership of a number of consumer items ranging from a television to a bicycle or car, as well as dwelling characteristics, such as a source of drinking water, sanitation facilities, and type of flooring material. Each asset was then assigned a weight or factor score generated through Principal Components Analysis. Each household was then assigned a score for each asset, and the scores summed for each household as individuals were ranked according to the score of the household in which they resided (ZDHS, 2006).

For the purpose of this research, this score was divided into three equal classes of wealth based percentiles. Those falling below 33.33rd percentile constituted the low end, which is the most poor. Those falling within 33.33 to 66.67th percentile constituted the middle level of wealth and those above 66.67th percentile were labelled the rich.

OTHER INDEPENDENT VARIABLES

All the other independent variables, educational level, age, marital status, place of residence, region and religion's measurement indicator and recodes are summarized in the Table 3.2.

It is important to note that religion shapes the culture of individuals, influencing their attitudes, norms and values and thus has a bearing on the behaviour of individuals, community or society. For this study, "Religion" has seven categories. The Roman Catholic faith is by far the predominant religion in Zimbabwe with an approximate 1,110,000 Zimbabweans being of this faith (International Religious Freedom Report, 2005). The Apostolic sector was singled out as a group of interest because of its polygamous marriages rooted in religion whilst the Muslim faith is also of interest because of its difference in perspective with Christianity and other religions. The other faiths, as well as respondents who answered that they belonged to other religious affiliation formed the "Traditional" category.

TABLE 3.2: DEFINITION OF INDEPENDENT VARIABLES

Variables	Definitions
Socioeconomic	
Wealth	Poor households (Ref) * Middle wealth households Wealthy households
Highest Education Level	Primary education (Ref) * Secondary education Higher education
Type/ Place of Residence	Rural (Ref) * Urban
Demographic	
Age	15-24 age group (Ref) * 25-34 age group 34-44 age group 45+ age group
Marital status	Never married (Ref) Married /Living together Divorced/ not living together/widowed
Region of residence	Harare (Ref) * Bulawayo Manicaland (Mashonaland East Mashonaland West Mashonaland Central Masvingo Matabeleland North Matebeleland South Midlands
Religion	None (Ref)* Roman Catholic Protestant / Pentecostal Apostolic sect Other Christian Traditional

- Reference category

3.4 HYPOTHESES

H_0: There is no association between wealth and sexual behaviour of men in Zimbabwe.

H_1: There is an association between wealth and sexual behaviour of men in Zimbabwe.

3.5 ETHICAL CONSIDERATIONS

The Zimbabwe Demographic and Health survey was approved by the National Ethics committee of the Medical Research Council of Zimbabwe. All the study participants gave informed consent before participating in the survey and confidentiality was ensured in data collection (ZDHS, 2005/6). The study under current consideration involves secondary analysis of pre-existing data and so no personal information or names of the respondents were disclosed in the dataset, thus anonymity was guaranteed.

3.6 Data Management

The 2005 – 2006 ZDHS data in SPSS format were downloaded from the Demographic and Health Survey website. SPSS Version 16 was used for analysis. From the set of downloaded data from the HIV/AIDS-Related Knowledge, Attitudes, and Behaviour module data set, variables considered to be relevant to this study were identified and extracted into one data set. There were a total of 7,175 cases in the HIV/AIDS-Related Knowledge, Attitudes, and Behaviour module. However, for some of the variables, there were missing cases. In some instances, this was attributable to the respondents stating that they were unsure of how to respond or they omitted the question completely. However, the majority of the questions, over 95%, were complete. To adjust for differences in probability of selection and also to adjust for the non response in order to have a representative sample, all cases in the 2005/6 ZDHS data were given weights.

The weight is determined such that it is inversely proportional to the response rate as well as the probability of selection. The use of weights therefore corrects for the differential response

rates and the unequal subjects in the sample. In the Zimbabwe DHS Standard Recode files, the household sample weight variable was extracted as HV005 and the individual weight variable was V005. The eight-digit count of variable with six implied decimal places was then divided by 1,000,000 before applying it using SPSS version 16.

3.7 DATA ANALYSIS

The variables used in this study were analyzed in three stages: univariate, bivariate and multivariate analysis. The significance tests were two tailed and the statistical significance was defined at the alpha level of 0.05.

3.7.1 UNIVARIATE ANALYSIS

This is done to profile the respondents by summarising the demographic and socioeconomic variables.

3.7.2 BIVARIATE ANALYSIS

This is done to examine the association between the independent socioeconomic, demographic, and the dependent variables of whether wealth influences sexual behaviour of men. In order to examine such an association, the unadjusted odds ratios were computed to explain the likelihood of negative sexual behaviour outcomes occurring. The selected sexual behaviour outcome variables included the following:

- **Concurrent sexual relationships in the last 12 months-** *having sex with one woman other than the wife (non spousal partner) in the last 12 months preceding the survey.*

- **Multiple concurrent sexual partnerships in the last 12 months-** *having had greater than or equal to two female sexual partners other than the wife (non spousal partner) in the last 12 months preceding the survey*
- **Unprotected sex in the last encounter-** used condom in the last encounter with non spousal partner*"*.

3.7.4 MULTIPLE LOGISTIC REGRESSION ANALYSIS

In the final stage of the analysis, a logistic regression analysis was carried out. The logistic regression model was chosen in order to overcome the problems associated with linear probability models because it provides a relative estimation based on probabilities (Pindyck and Rubinfeld, 1991). This was also used in this study because the outcome variables are dichotomous or binary. For this stage the negative sexual behaviour outcomes were the outcome variable. Thus if the respondent recorded concurrent sexual partnerships, multiple concurrent sexual partnerships and unprotected sex they were coded as "0" and the positive sexual behaviours coded as "1". The purpose of such coding ensured that only the negative values could be used in the model. The logistic regression was also used for each of the independent variables that were significant by each binary, dependent variable. In the first model wealth index, age and level of education variables were introduced into the model as the independent variables. Finally in the second model more variables were added that included that included marital status, place of residence, region of residence and then religious affiliation because these characteristics are known to influence sexual behaviour (Asare and Annim, 2008). The basic logistic regression equation used was:

$$\text{Lin}\left(\frac{P_i}{1-P_i}\right) = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki} + e_{i,}$$

where: $\ln\left(\frac{P_i}{1-P_i}\right)$ = is the logit of the odds of being wealthy

X_i = independent variables

β_k = is a vector of parameter estimates representing the effects on the log odds of the vector of independent variable x_i . It is a regression coefficient. The log odds are not easily understood and so they can be exponentiated to provide the odds of being wealthy by the following formula:

$$\frac{P_i}{1-P_i} = e^{\alpha+\beta+e}$$

Where

α_i = average log odds (means) when all x_i are set to zero. It is the error or unexplained part of the regression. It is a constant.

The logistic regression equation takes the form:

Sexual behaviour = Wealth + Sex + Age + Marital status + Education+ Place of residence + Region of Residence + Religion

Where Sexual behaviour can take any one of the following sexual behaviours at a time:

- Concurrent sexual partnerships in the last 12 months
- Multiple concurrent sexual partnerships in the last 12 months
- Unprotected sex

In this section of the study, the strength of associations between the respondent's background and wealth characteristics with sexual behaviour outcomes was considered. This improves the understanding of the key variables or characteristics that are significantly associated within the logistic regression model provided. In the first model wealth index, age and level of education variables were introduced into the model as the independent variables. In the second model more variables were added that included that included marital status, place of residence, region of residence and then religious affiliation because these characteristics are known to influence sexual behaviour (Asare and Annim, 2008).

CHAPTER 4

4.0 RESULTS

INTRODUCTION

This chapter begins by presenting results of the characteristics of the survey respondents. This is followed by a presentation of the results of the association between the dependent variable-selected sexual behaviour and the independent variables including wealth, sex, age, marital status, educational level, religion, type or place of residence and region of residence. The sexual behaviours included concurrent sexual partnerships in the last 12 months, multiple concurrent sexual partnerships in the last 12 months and unprotected sex in the last encounter.

4.1 CHARACTERISTICS OF THE RESPONDENTS

4.1.2 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

This section of the study focused on the univariate analysis of the 2005/6 ZDHS data. The analysis generated the following results shown in table 4.1.

Table 4.1.2: Weighted percentage distribution of Zimbabwean men, by selected social and demographic characteristics, Zimbabwe Demographic and Health Survey, 2005/6

Characteristics	Frequency	Percent
Household Wealth		
Poor household	2292	31.9
Middle household wealth	1235	17.2
Wealthy household	3649	50.9
Total	7175*	100
Highest Education Level		
Primary / No education	2067	28.8
Secondary education	4687	65.3
Higher education	422	5.9
Total	7175*	100
Age		
15-24 years	3358	46.8
25-34 years	1963	27.4
35-44 years	1132	15.8
>45 years	721	10.1
Total	7175*	100
Marital Status		
Never Married	3406	47.5
Married / Living together	3419	47.7
Divorced / Widowed / Separated	350	4.9
Total	7175	100
Type of place of residence		
Urban	2904	40.5
Rural	4271	59.5
Total	7175	100
Region		
Manicaland	829	11.6
Mashonaland Central	702	9.8
Mashonaland East	598	8.3
Mashonaland West	726	10.1

Matebeleland North	434	6.1
Matebeleland South	325	4.5
Midlands	1003	14
Masvingo	800	11.1
Harare	1274	17.8
Bulawayo	483	6.7
Total	7175	100
Religion		
Traditional	535	7.5
Roman Catholic	749	10.6
Protestant / Pentecostal	2151	30.4
Apostolic Sect	1605	22.6
Other Christian	255	3.6
None	1792	25.3
Total	7087**	100

**The weighted frequencies are approximately the same as the unweighted frequencies. The difference in the sum is possibly due to rounding errors*.

** Total does not add up to 7175 because of missing data

As shown in Table 4.1.2, men from a wealthy household constituted 50.9% of the men with 31.9% making up those men from the poor households. The men from middle wealth households constituted 17.2% of the survey respondents. In terms of levels of education of the male participants, 65.3% had secondary education followed by 28.8% who had primary education and 5.9% had had higher education. The 15-24 years age group made up the largest group amongst the men who participated in the study. They made up 46.8% of the survey respondents and the 25-34 years age group making up 27.4%, 35-44 years age group making up 15.8% and the 45+ age group made up 10.1% of the sample.

From the study, it was noted that 47.5% of the respondents had never been married whilst 47.7% were married or living together with partner/wife with 4.9% of the men divorced,

separated or widowed. It was noted in this study that 59.5% of those interviewed were from rural areas whilst 40.5% were from urban areas. Harare had the highest percentage of participants in the study making up 17.8% with Matabeleland having the least percentage of 4.5% and Bulawayo with a low percentage of 6.7%. The other regions had relatively high percentages such as Manicaland 11.6%, Masvingo 11.1% and Mashonaland West 10.1%.

The Protestant and Pentecostal religions made up the largest group amongst the study participants at 30.4% followed by the None religious group making up 25.3 % of the respondents. The Apostolic Sect were reported as constituting 22.6% of the respondents and the least were the Other Christian groups making up 3.6% and 7.5% for those who believed in the Traditional religion. The Roman Catholics made up 10.6% of the respondents. The Muslim group constituted a minute percentage in the survey and thus discarded for analysis as missing.

4.1.3 SEXUAL BEHAVIOUR CHARACTERISTICS OF THE RESPONDENTS

From table 4.1.3, 56% of the men that participated in the study had engaged in concurrent sexual partnerships in the 12 months preceding the survey. Missing data were reported at 0.1% as people elect to omit sexual information in questionnaires in general. It is noted that 8.9% of the man that participated in the survey had engaged in multiple concurrent sexual partnerships in the 12 months preceding the survey. Again missing data was reported at 0.1% for the same reason mentioned above, that of people electing to omit sexual information in questionnaires in general. Of the men that participated in the study only 8.9% elected to give response to engagement in unprotected sex in the last encounter and of this group 3.1%reported engaging

in unprotected sex. However the weighted valid percentage of men that engaged in unprotected sex was 35.1%.

Table 4.1.3: Weighted percentage distribution of Zimbabwean men, by selected sexual behaviour characteristics, Zimbabwe Demographic and Health Survey, 2005/6

Characteristics	Category	Frequency	Percent
Concurrent Sexual partnership in the last 12 months	***Yes***	4026	56.2
	No	3139	43.8
	Sub-Total	7165*	100
Multiple Concurrent Sexual Partnerships in the last 12 months	***Yes***	637	8.9
	No	6528	91.1
	Sub-Total	7165*	100
Unprotected sex in the last encounter	***Yes***	225	35.1
	No	416	64.9
	Total	7175	

*Missing data, so totals do not add up to 7175, valid percentages considered

4.1.4 CROSSTABULATION OF SEXUAL BEHAVIOURS AND WEALTH STATUS

4.2.1 Concurrent Sexual partnership and Household Wealth Crosstabulation

From table 4.2.1.1, among the men from poor households 57.9% reported having concurrent sexual partnership whilst 42.1% reported not having had concurrent sexual partnerships 12 months preceding the survey.

Table 4.2.1.1 Concurrent Sexual partnership and Household Wealth Crosstabulation

			Household Wealth			
			Poor household	Middle household wealth	Wealthy household	Total
Concurrent Sexual partnership	**Yes**	Count	1326	599	2101	4026
		% within Household Wealth	57.9%	48.5%	57.7%	56.2%
	No	Count	964	635	1539	3138
		% within Household Wealth	42.1%	51.5%	42.3%	43.8%
Total		Count	2290	1234	3640	7164
		% within Household Wealth	100.0%	100.0%	100.0%	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded and there are missing cases.

A similar pattern is noted amongst men from wealth households, 57.7% from the wealth households reported having had concurrent sexual partnerships unlike 42.3% from the same group who reported not having had concurrent sexual partnerships in the past 12 months before the survey in Table 4.2.1.1. There seems to be no difference in terms of engagement or non engagement in concurrent sexual partnerships between men sexual behaviour of concurrent sexual partnerships between the men from poor household and those from wealthy households. However it is noted that men from wealth households are 9.2% (57.7% - 48.5%) more likely to engage in concurrent sexual partnerships compared with men from middle wealth household. Compared with men from poor households it is noted that the men from the

middle wealth household are also 9.4% likely not to engage in concurrent sexual partnerships compared with those men from poor households.

There seem to be some differences especially among the men from poor households and wealthy households.

Table 4.2.1.2 Chi- Square Tests for association between household wealth and concurrent sexual partnerships

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.520[a]	2	.000
N of Valid Cases	7164		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 540.52.

From table 4.2.1.2 above, the observed Chi- Square statistic is 35.520 which is associated with a p-value <0.05 and so we reject the null hypothesis, and conclude that there is association between men's household wealth and engagement in concurrent sexual partnerships

Table 4.2.1.3 Measurement of strength of association between household wealth and concurrent sexual partnerships

		Value	Approx. Sig.
Nominal by Nominal	**Cramer's V**	.070	.000
N of Valid Cases		7164	

The Cramer's V coefficient in table 4.2.1.3 which measures the strength of the association was noted as 0.070 and the result is statistically significant with a p-value <0.05. There is little if any association between concurrent sexual partnerships and household wealth.

Table 4.3.1 .1 Multiple Concurrent sexual partnerships and Household wealth crosstabulations

			Household Wealth			
			Poor household	Middle household wealth	Wealthy household	Total
Multiple Concurrent Sexual Partnerships	Yes	Count	213	105	319	637
		% within Household Wealth	9.3%	8.5%	8.8%	8.9%
	No	Count	2078	1129	3321	6528
		% within Household Wealth	90.7%	91.5%	91.2%	91.1%
Total		Count	2291	1234	3640	7165
		% within Household Wealth	100.0%	100.0%	100.0%	100.0%

From table 4.3.1.1, men from poor households, middle household wealth and wealthy households reported low percentages, 9.3%, 8.5% and 8.8% respectively in terms of engagement in multiple concurrent sexual partnerships. From these observations there seem to be differences but they are rather small and probably not enough to constitute a clear dependent association between household wealth and multiple concurrent sexual partnerships.

From the table 4.3.1.2, we observed a very low Chi- Square statistic of 0.762 which is associated with a p-value >0.05 and so we cannot reject the null hypothesis. We therefore find

no support for the research hypothesis and can conclude that there is no association between multiple concurrent sexual partnerships and men's household wealth.

Table 4.3.1.2 Chi- Square Tests for association between men's multiple concurrent sexual partnerships and household wealth

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.762[a]	2	.683
N of Valid Cases	7165		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 109.71.

Table 4.3.1.3 Measurement of strength of association between multiple concurrent sexual partnerships and household wealth

		Value	Approx. Sig.
Nominal by nominal	Cramer's V	.010	.683

From table 4.3.1.3, the Cramer's V coefficient which measures the strength of the association was noted as 0.010 and the result is statistically non-significant with a p-value >0.05. Considering this observation we can deduce the strength of association to be of low, which is no association between concurrent sexual partnerships and household wealth basing on data from 2005/6 ZDHS.

4.4.0 UNPROTECTED SEX AND SOCIO-DEMOGRAPHIC VARIABLES

CROSSTABULATIONS

There were notable missing values in this section that were not considered for analysis.

Table 4.4.1 .1 unprotected sex and Household wealth crosstabulations

Crosstab

			Household Wealth			
			Poor household	Middle household wealth	Wealthy household	Total
Engaged in unprotected sex	Yes	Count	116	29	80	225
		% within Household Wealth	54.7%	27.4%	24.7%	35.0%
	No	Count	96	77	244	417
		% within Household Wealth	45.3%	72.6%	75.3%	65.0%
Total		Count	212	106	324	642
		% within Household Wealth	100.0%	100.0%	100.0%	100.0%

a. Low total count due to missing values

From table 4.4.1.1, considering the poor household category as the reference group, we note that men from middle household wealth were 27.3% less likely to engage in unprotected sex and also men from wealthy households who were noted as 30% less likely to engage in unprotected sex. It was also noted that 27.4% of the men from the middle wealth household reported having engaged in unprotected sex with 72.6% reporting using protection. A similar pattern is noted amongst the wealthy who reports 24.7% having engaged in unprotected sex. About 54.7% of the men from poor households reported engaging in unprotected sex. From

these observations there seem to be differences in engagement in unprotected sex based on wealth enough to reasonably constitute some clear dependent association between unprotected sex and wealth. Missing values were not considered for analysis.

Table 4.4.1.2 Chi- Square Tests for association between unprotected sex and household wealth

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54.049[a]	2	.000
N of Valid Cases	642		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 37.15.

From the table 4.4.1.2, we observed a Chi- Square statistic of 54.049 which is associated with a p-value <0.05 and so we reject the null hypothesis. We therefore find support for the research hypothesis and can conclude that there is association between unprotected sex and household wealth.

Table 4.4.1.3 Measurement of strength of association between unprotected sex and household wealth

Symmetric Measures

	Value	Approx. Sig.
Cramer's V	.290	.000
N of Valid Cases	642	

From table 4.4.1.3, the Cramer's V coefficient which measures the strength of the association was noted as 0.290 and the result is statistically significant with a p-value <0.05. Considering this observation we can deduce the strength of association to be of moderate association between unprotected sex and household wealth basing on data from 2005/6 ZDHS.

4.2 BIVARIATE ANALYSIS RESULTS

This section presents the results of the unadjusted logistic regression analyses which were carried out to find out the bivariate relationship between each socio-demographic variable and selected sexual behaviour. Research has shown mixed outcomes between the association of wealth and sexual behaviours of men in Southern Africa (Asare and Annim, 2008).

In this section the following hypotheses were tested and were applicable for each bivariate analysis of selected socioeconomic and demographic factor and selected sexual behaviour:

H_0: There is no association between selected socio demographic factor and selected sexual behaviour

H_1: There is an association between selected socio demographic factor and selected sexual behaviour

In this section our selected socioeconomic and demographic factors include wealth, highest educational level, age, marital status, type of place of residence, region of residence and religion. The sexual behaviours employed included concurrent sexual partnerships, multiple concurrent sexual partnerships and unprotected sex.

HOUSEHOLD WEALTH AND SEXUAL BEHAVIOUR OF MEN

Compared with men from poor households, men from middle wealth households were less likely to have had concurrent sexual partnerships in the last 12 months (OR 0.69, 95%CI 0.69 to 0.79), less likely to have had unprotected sex in their last encounter (OR 0.31, 95%CI 0.19 to

0.51). The men from wealthy households were less likely to have had unprotected sex in the last encounter (OR 0.27, 95% CI 0.19 to 0.39).

Considering the association between wealth and multiple concurrent sexual partnerships, the observed Chi-Square statistic was associated with a p-value of 0.7. This p-value far exceeded our standard of 0.05, so we are unable to reject the null hypothesis. Thus we do not find support for the research hypothesis and cannot conclude that wealth is associated with multiple concurrent sexual partnerships.

From the table 4.1, however, the observed Chi-Square Statistic had p-values <0.05. So we reject the null hypothesis. We thus find support for the research hypothesis and can conclude that wealth was associated with concurrent sexual partnerships and unprotected sex in the last encounter.

EDUCATION LEVEL AND SEXUAL BEHAVIOUR OF MEN

From table 4.2, it is noted that compared with men with a primary education or no education, the men with secondary education were less likely to have had concurrent sexual partnerships in the last 12 months (OR 0.73, 95%CI 0.66 to0. 81), less likely to engage in unprotected sex in their last encounter (OR 0.18, 95% CI 0.12 to 0.25)

Compared with men with a primary education or no education, men with higher education were more likely to have had concurrent sexual partnerships in the last 12 months (OR 1.74, 95% CI 1.38 to 2.19) but less likely to have had multiple concurrent sexual partnerships (OR

0.64, 95%CI 0.42 to 0.99). The men with higher education were less likely to engage in unprotected sex (OR 0.08, 95% CI 0.03 to 0.26)

However in table 4.2, the observed Chi-Square Statistic had p-values <0.05 and so we reject the null hypothesis. Thus we find support for the research hypothesis and can conclude that education level was associated with concurrent sexual partnerships, unprotected sex in the last encounter and coital debut at 17 years or younger. However in considering the association between educational level and multiple concurrent sexual partnerships, the observed Chi-Square statistic was associated with a p-value of 0.08, exceeding our standard of 0.05, so we are unable to reject the null hypothesis. Thus we do not find support for the research hypothesis and cannot conclude that level of education is associated with multiple concurrent sexual partnerships.

Table 4.1 Unadjusted odd ratios of the associations between selected characteristics and sexual behaviours

Characteristics	Concurrent sexual partnerships in the last 12 months		Multiple concurrent sexual partnerships in the last 12 months		Unprotected sex in the last encounter	
	N=7166		N= 7166		N= 605	
	Exp(B)		Exp (B)		Exp(B	
Household wealth						
Poor household	**1.00**		**1.00**			
Middle wealth household	**0.69**	(0.60 - 0.79)*	**0.91**	(0.71 - 1.13)	**0.31**	(0.19 - 0.51)*
Wealthy household	**0.99**	(0.89 - 1.10)	**0.94**	(0.78 - 1.12)	**0.27**	(0.19 - 0.39) *
Pearson Chi-Square p-value	**0.00***		**0.70**		**0.00***	
Education level						
Primary/No education	**1.00**		**1.00**			
Secondary education	**0.73**	(0.66 - 0.81) *	**1.00**	(0.84 - 1.20)	**0.18**	(0.12 - 0.25) *
Higher education	**1.74**	(1.38 - 2.19) *	**0.64**	(0.42 - 0.99) *	**0.08**	(0.03 - 0.26) *
Person Chi-Square p-value	**0.00***		**0.08**		**0.00***	
Age						
15-24 years	**1.00**		**1.00**			
25-34 years	**8.32**	(7.31 - 9.46) *	**1.85**	(1.53 - 2.23) *	**1.11**	(0.74 - 1.66)
35-44 years	**13.37**	(11.21 - 15.95) *	**1.27**	(1.00 - 1.62)	**2.72**	(1.67 - 4.44) *
>45 years	**14.29**	(11.49 - 17.77) *	**1.18**	(0.87 - 1.58)	**9.93**	(5.04 - 19.56) *
Pearson Chi-Square	**0.00***		**0.00***		**0.00***	
Marital status						

Never Married	**1.00**			**1.00**				
Married / Living together	**21.60**	(20.00 -	24.56) *	**1.94**	(1.63 -	2.32) *	**2.78**	(1.90 - 4.08) *
Divorced / Widowed / Separated	**3.36**	(2.70 -	4.21) *	**2.39**	(1.71 -	3.35) *	**0.73**	(0.32 - 1.67)
Pearson Chi-Square p-value	**0.00***			**0.00***			**0.29**	
Type of residence								
Rural residence	**1.00**			**1.00**			**1.00**	
Urban residence	**1.06**	(0.96 -	1.17)	**1.05**	(0.89 -	1.24)	**0.36**	(0.26 - 0.52) *
Pearson Chi-Square p-value	**0.23**			**0.56**			**0.00***	
Region of residence								
Harare	**1.00**			**1.00**				
Mashonaland Central	**1.10**	(0.91 -	1.33)	**1.15**	(0.85 -	1.55)	**1.52**	(0.77 - 3.00)
Mashonaland East	**1.07**	(0.88 -	1.30)	**0.24**	(0.14 -	0.41) *	**6.50**	(2.16 - 19.57) *
Mashonaland West	**1.09**	(0.91 -	1.31)	**1.12**	(0.83 -	1.51)	**2.70**	(1.44 - 5.06) *
Matebeleland North	**1.48**	(1.18 -	1.86) *	**0.96**	(0.66 -	1.39)	**7.14**	(3.30 - 15.43) *
Matebeleland South	**0.95**	(0.74 -	1.21)	**0.12**	(0.04 -	0.31) *	**3.12**	(0.41 - 23.87) *
Midlands	**1.01**	(0.86 -	1.20)	**0.83**	(0.62 -	1.11)	**4.01**	(2.15 - 7.45) *
Masvingo	**0.92**	(0.77 -	1.10)	**1.29**	(0.97 -	1.70)	**2.66**	(1.45 - 4.89) *
Manicaland	**0.80**	(0.67 -	0.95) *	**0.97**	(0.72 -	1.31)	**2.13**	(1.12 - 4.07) *
Bulawayo	**1.36**	(1.09 -	1.68) *	**0.82**	(0.56 -	1.19)	**1.52**	(0.65 - 3.53)
Pearson Chi-Square p-value	**0.00***			**0.00***			**0.00***	
Religion								

None	**1.00**			**1.00**				
Roman Catholic	**0.97**	(0.81 -	1.15)	**0.93**	(0.70 -	1.22)	**0.84**	(0.47 - 1.49)
Protestant/ Pentecostal	**0.60**	(0.53 -	0.69) *	**0.65**	(0.52 -	0.81) *	**0.68**	(0.43 - 1.08)
Apostolic sect	**0.81**	(0.70 -	0.92) *	**0.66**	(0.52 -	0.84) *	**2.02**	(1.27 - 3.22) *
Other Christian	**0.74**	(0.56 -	0.96) *	**0.43**	(0.24 -	0.77) *	**2.07**	(0.74 - 5.79)
Traditional	**1.52**	(1.24 -	1.88) *	**1.12**	(0.83 -	1.51)	**1.35**	(0.75 - 2.42)
Pearson Chi-Square p-value	**0.00***			**0.00***			**0.00***	

***p<0.05**

Values are odds ratios (95% Confidence Intervals)
Missing cases were excluded from analysis (N total = 7175)

AGE AND SEXUAL BEHAVIOUR OF MEN

Compared with men of the age group 15-24 years men aged 25-34 years were more likely to have engaged in concurrent sexual partnerships in the last 12 months (OR 8.32, 95% CI 7.31 to 9.46) and more likely to have engaged in multiple concurrent sexual partnerships (OR 1.85, 95% CI 1.53 to2. 23). Men aged 35-44years were more likely to have engaged in concurrent sexual partnerships in the last 12 months (OR 13.37, 95% CI 11.21 to 15.95) and we also more likely to have had unprotected sex in their last encounter (OR 2.72, 95%CI 1.67 to 4.44). The men above 45 years, compared with the men aged 15- 24 years were more likely to have had concurrent sexual partnerships (OR14.29, 95% CI 11.49 to 17.77) and more likely to have had unprotected sex in the last encounter (OR 9.93, 95% CI 5.04 to 19.56).

However in table 4.2, the observed Chi-Square Statistic had p-values <0.05 and so we reject the null hypothesis. Thus, we find support for the research hypotheses and can conclude that age was associated with concurrent sexual partnerships, multiple concurrent sexual partnerships and unprotected sex in the last encounter.

MARITAL STATUS AND SEXUAL BEHAVIOUR OF MEN

From table 4.2, compared with the men who have never married, the married men or those living together with a partner, were more likely to have had concurrent sexual partnership in the last 12 months (OR 21.60, 95% CI 20.00 to 24.56), more likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 1.94, 95% CI 1.63 to 2.3) and more likely to have had unprotected sex in their last encounter (OR 2.78, 95% CI 1.90 to 4.08). Compared with men who had never been married, those men who were either divorced,

widowed or separated were more likely to have had concurrent sexual partnership in the last 12 months (OR 3.36, 95% CI 2.70 to 4.21) and more likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 2.39, 95% CI 1.71 to3. 35)

From table 4.2, the observed Chi-Square Statistic had p-values <0.05 and so we reject the null hypotheses. Thus, we find support for the research hypotheses and can conclude that marital status was associated with concurrent sexual partnerships and multiple concurrent sexual partnerships. However in considering the association between marital status and unprotected sex in the last, the observed Chi-Square statistic was associated with a p-value of 0.29. This p-value far exceeds our standard of 0.05, so we are unable to reject the null hypothesis. Thus we do not find support for the research hypothesis and cannot conclude that marital status is associated with unprotected sex in the last encounter.

TYPE OF RESIDENCE AND SEXUAL BEHAVIOUR OF MEN

From table 4.2, compared with men rural residences men with urban residence were less likely to engage in unprotected sex in their last encounter (OR 0.36, 95% CI 0.26 to 0.52). From table 4.2, the observed Chi-Square Statistic had p-values <0.05 and so we reject the null hypotheses, thus we find support for the research hypotheses and can conclude that type of residence was associated with unprotected sex at last encounter. However in considering the association between the type of place of residence and concurrent sexual partnership and multiple concurrent sexual partnerships in the last 12 months, the observed Chi-Square statistic was associated with p-values of 0.23 and 0.56 respectively. This far exceeded our standard of 0.05, so we are unable to reject the null hypotheses. Thus we do not find support for the research

hypotheses and cannot conclude that type of place of residence is associated with concurrent sexual partnership and multiple concurrent sexual partnerships.

REGION OF RESIDENCE AND SEXUAL BEHAVIOUR OF MEN

From the table 4.2, compared with men in the Harare region men in Mashonaland East were less likely to have had multiple concurrent sexual partnerships (OR 0.24, 95% CI 0.14 to 0.41) and more likely to have engaged in unprotected sex in their last encounter (OR 6.5, 95% CI 2.16 to 19.57). Men in Mashonaland West were more likely to have engaged in unprotected sex in their last encounter (OR 2.70, 95% CI 1.44 to 5.06). Men in Matebeleland North, compared with those in Harare region were more likely to have had concurrent sexual partners in the last 12 months (OR 1.48, 95% CI 1.18 to 1.86) and more likely to have had unprotected sex at last encounter (OR 7.14, 95% CI 3.30 to 15.43). Compared with men in Harare region, men in Matebeleland South were less likely to have had multiple concurrent sexual partners in the last 12 months preceding the survey. Men in Midlands region when compared with men in the Harare region, were more likely to have had unprotected sex (OR 4.01, 95% CI 2.15 to 7.45).

Men in Masvingo region, compared with those in Harare region were more likely to have had unprotected sex at last encounter (OR 2.66, 95% CI 1.45 to 4.89). Men in Manicaland region, compared with those in Harare region were less likely to have had concurrent sexual partners in the last 12 months (OR 0.80, 95% CI 0.67 to 0.95), but were more likely to have had unprotected sex at last encounter (OR 2.13, 95% CI 1.12 to 4.07). Men in Bulawayo region, compared with those in Harare region were more likely to have had concurrent sexual partners in the last 12 months (OR 1.36, 95% CI 1.09 to 1.68).

From table 4.2, the observed Chi-Square Statistic had p-values <0.05 and so we reject the null hypotheses. We thus find support for the research hypotheses and can conclude that region of residence was associated with concurrent sexual partnerships in the last 12 months , multiple concurrent sexual partnerships in the last 12 and unprotected sex at last encounter.

RELIGION AND SEXUAL BEHAVIOUR OF MEN

From table 4.2, compared with men with no religious affiliation the men belonging to the Protestant and Pentecostal religions were less likely to have had concurrent sexual partnership (OR 0.60, 95% 0.53 to 0.69) and less likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 0.65, 95% CI 0.52 to 0.81). The men belonging to the Apostolic sect were less likely to engage in concurrent sexual partnership in the last 12 months (OR 0.81, 95% CI0.70 to 0.92) and less likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 0.66, 95% CI 0.52 to 0.84). These men belonging to the apostolic sect were however more likely to engage in unprotected sex in their last encounter (OR 2.02, 95% CI 1.27 to 3.22) compared with men with no religion affiliation.

The men belonging to other Christian religion were less likely to have engaged in concurrent sexual partnership in the last 12 months (OR 0.74, 95% CI 0.56 to 0.96) and were less likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 0.43, 95% CI 0.24 to 0.77). Men belonging to local traditional religion, when compared with those with no religious affiliation were more likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 1.24, 95% CI 1.24 to 1.88).

From table 4.2, the observed Chi-Square Statistic had p-values <0.05 and so we reject the null hypotheses. We thus find support for the research hypotheses. We can conclude that religion was associated with concurrent sexual partnership in the last 12 months, multiple concurrent sexual partnerships in the last 12 and unprotected sex at last encounter.

CONCLUSION

A mixed pattern of associations between socio-demographic characteristics and male sexual behaviours were noted in this bivariate analysis which is not conclusive as each characteristic is likely to influence the model in some way and hence the need for a multivariate analysis.

CHAPTER 5

5.0 MULTIVARIATE ANALYSES

INTRODUCTION

This chapter uses multivariate analysis to evaluate the effect of wealth and selected socio-demographic variables (education level, age, marital status, type of residence, region of residence and religion) on selected male sexual behaviours. This method of analysis is more advanced than the bivariate analysis because it simultaneously analyses the influence of several independent variables, on the dependent variable.

In this study the dependent variables included among others the following selected male sexual behaviours:

- Concurrent sexual partnerships in the last 12 months
- Multiple concurrent sexual partnerships in the last 12 months
- Unprotected sex in the last encounter

The logit model was adopted to estimate odds ratios for males aged 15 to 54 years old who had reported that they have been or are sexually active. The logit model was selected for use because of its strengths in overcoming the inherent challenges associated with linear probability models as logit model provides relative estimation based on probabilities (Asare and Annim, 2008). Two estimation models are presented in this study. For the purposes of this study, Model 1 used estimates for wealth status, education and age as the independent variables. In model 2, marital status, rural and urban residence, regional residence and religion

are added because these characteristics are known to influence sexual behaviour (Asare and Annim, 2008). However in the table below only the final model 2 results are shown and described. Detailed results of the different models are attached in the appendix.

5.2 MULTIPLE LOGISTIC REGRESSION MODELLING RESULTS

Table 5.2 Odds ratios of the association between selected characteristics and sexual behaviour based on final models

Characteristics	Concurrent sexual partnerships in the last 12 months (Yes / No)			Multiple Concurrent sexual partnerships in the last 12 months (Yes / No)			Unprotected sex in the last encounter (Yes / No)		
	N= 7093			N= 7093			N=596		
	Exp(B)	95.0% C.I. for EXP(B)		Exp(B)	95.0% C.I. for EXP(B)		Exp(B)	95.0% C.I. for EXP(B)	
Household Wealth									
Poor household (Ref)	**1.00**			**1.00**			**1.00**		
Middle wealth household	**1.08**	(0.90 -	1.30)	**1.08**	(0.83 -	1.40)	**0.41***	(0.22 -	0.76)
Wealthy household	**1.16**	(0.93 -	1.45)	**0.91**	(0.67 -	1.24)	**0.47**	(0.22 -	1.00)
p-value	**0.402**			**0.601**			**0.010**		
Education level									
Primary/No education(Ref)	**1.00**			**1.00**			**1.00**		
Secondary education	**0.98**	(0.84 -	1.15)	**1.03**	(0.84 -	1.27)	**0.32***	(0.20 -	0.50)
Higher education	**1.51***	(1.10 -	2.06)	**0.64**	(0.40 -	1.01)	**0.18 ***	(0.05 -	0.67)
p-value	**0.014**			**0.088**			**<0.001**		
Age									
15-24 years (Ref)	**1.00**			**1.00**			**1.00**		
25-34 years	**2.05***	(1.72 -	2.46)	**1.03**	(0.79 -	1.34)	**0.63**	(0.36 -	1.11)
35-44 years	**2.00 ****	(1.57 -	2.55)	**0.62***	(0.45 -	0.86)	**1.52**	(0.76 -	3.02)

>45 years	**1.92 ****	(1.44 -	2.55)	**0.59 ***	(0.40 -	0.86)	**5.38***	(2.26 -	12.83)
p-value	**<0.001**			**<0.001**			**<0.001**		
Marital status									
Never Married (Ref)	**1.00**			**1.00**			**1.00**		
Married / Living together	**13.29****	(11.04 -	16.02)	**2.30 ****	(1.75 -	3.01)	**2.01 ***	(1.12 -	3.62)
Divorced / Widowed / Separated	**2.07* ***	(1.59 -	2.71)	**2.64 ****	(1.77 -	3.95)	**0.65**	(0.23 -	1.80)
p-value	**<0.001**			**<0.00**			**0.010**		
Type of residence									
Rural residence (Ref)	**1.00**			**1.00**			**1.00**		
Urban residence	**0.90**	(0.71 -	1.14)	**1.22**	(0.87 -	1.71)	**0.49**	(0.21 -	1.13)
p-value	**0.385**			**0.260**			**0.096**		
Region of residence									
Harare (Ref)	**1.00**			**1.00**			**1.00**		
Mashonaland Central	**1.09**	(0.81 -	1.46)	**1.22**	(0.83 -	1.78)	**0.42**	(0.15 -	1.13)
Mashonaland East	**1.13**	(0.84 -	1.52)	**0.25****	(0.14 -	0.44)	**2.77**	(0.67 -	11.44)
Mashonaland West	**0.99**	(0.75 -	1.30)	**1.06**	(0.74 -	1.50)	**0.84**	(0.36 -	1.98)
Matebeleland North	**2.00* ***	(1.44 -	2.78)	**1.01**	(0.65 -	1.56)	**1.61**	(0.60 -	4.34)
Matebeleland South	**1.60***	(1.14 -	2.24)	**0.14****	(0.05 -	0.40)	**0.72**	(0.07 -	7.58)
Midlands	**1.14**	(0.89 -	1.46)	**0.89**	(0.64 -	1.25)	**1.15**	(0.47 -	2.84)
Masvingo	**1.00**	(0.75 -	1.32)	**1.51***	(1.06 -	2.17)	**0.66**	(0.27 -	1.62)
Manicaland	**0.86**	(0.66 -	1.13)	**1.19**	(0.83 -	1.71)	**0.97**	(0.39 -	2.40)
Bulawayo	**2.22* ***	(1.69 -	2.91)	**0.91**	(0.62 -	1.33)	**1.66**	(0.63 -	4.34)
p-value	**<0.001**			**<0.00**			**0.106**		
Religion									

None (Ref)	**1.00**			**1.00**			**1.00**		
Roman Catholic	**1.06**	(0.85 -	1.33)	**0.93**	(0.69 -	1.24)	**0.99**	(0.50 -	1.98)
Protestant/ Pentecostal	**0.77***	(0.65 -	0.91)	**0.70***	(0.56 -	0.89)	**0.79**	(0.45 -	1.40)
Apostolic sect	**0.96**	(0.80 -	1.15)	**0.60****	(0.47 -	0.77)	**1.90***	(1.06 -	3.41)
Other Christian	**0.84**	(0.60 -	1.18)	**0.42***	(0.23 -	0.77)	**2.33**	(0.64 -	8.52)
Traditional	**1.06**	(0.81 -	1.38)	**0.91**	(0.66 -	1.24)	**0.90**	(0.43 -	1.92)
p-value	**0.010**			**<0.00**			**0.071**		

N/A = Not applicable; Ref = Reference category; * p <0.05; ** p<0.001. Missing cases were not considered in the analyses

WEALTH STATUS

Table 5.2 shows the odds ratios from the multiple logistic regression modelling. It was noted that after controlling for marital status, type of place of residence, region of residence and religion, there was no significant association between being a men from a wealthy household and either concurrent sexual partnerships in the last 12 months or multiple concurrent sexual partnerships. However wealth remained significantly associated with unprotected sex in the last encounter. Compared to men from poor households, the men from middle wealth household were less likely to engage in unprotected sex in the last encounter (OR 0.41, 95% CI 0.22 to 0.76).

LEVEL OF EDUCATION

Compared to men who had never been to school or with just primary education, those with secondary education were less likely to engage in unprotected sex in their last encounter (OR 0.32, 95% CI 0.20 to 0.50) and were also less likely to have had coital debut at 17 or younger (OR 0.67, 95% CI 0.57 to 0.78). Men with higher education were more likely to engage in concurrent sexual partnerships in the last 12 months (OR 1.51, 95% CI 1.10 to 2.06) than men with no education or with just primary education. Compared to men who had never been to school or with just primary education, those with higher education were less likely to engage in unprotected sex (OR 0.18, 95% CI 0.05 to 0.67) and less likely to have had coital debut at 17 years or younger (OR 0.49, 95% 0.34 to 0.71). There was a significant trend towards concurrent sexual partnerships (p-value for trend= 0.014), unprotected sex (p-value for trend <0.001) and coital debut at 17 or younger (p-value for trend <0.001 with increasing level of education).

AGE

From this study the other independent predictors were marital status, age, type of place of residence, region of residence and religion. From table 5.2, compared to men 15 -24 years, the men in the age group 25 – 34 years were more likely to have had concurrent sexual partnerships in the last 12 months (OR 2.05, 95% CI 1.72 to 2.46) but were less likely to have had coital debut at 17 years (OR 0.69, 95% CI 0.55 to 0.85). The 35 – 44 years age group were more likely to engage in concurrent sexual partnerships in the last 12 months (OR 2.00, 95% CI 1.57 to 2.55) but less likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 0.62, 95% CI 0.45 to 0.86) and less likely to have had coital debut at 17 years or younger (OR 0.53, 95% CI 0.41 to 0.69). Compared to men 15 -24 years, men with age greater than 45 years were more likely to engage in concurrent sexual partnerships in the last 12 months (OR 1.92, 95% CI 1.44 to 2.55), and ,were 5 times more likely to engage in unprotected sex (OR 5.38, 95% CI 2.26 to 12.83) compared with the reference group. However these men greater than 45 years were less likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 0.59, 95% CI 0.40 to 0.86) compared to the 15 – 24 years age group and were also less likely to have had coital debut at 17 or younger.

TYPE OF RESIDENCE

It was also noted in this study that after controlling for marital status, type of place of residence, region of residence and religion, there was no significant association between type of residence and either concurrent sexual partnerships in the last 12 months, multiple concurrent sexual partnerships in the last 12 months, unprotected sex in the last encounter or coital sexual debut at 17 years or younger.

MARITAL STATUS

From table 5.2, married men or those living together with partners, when compared to the single men, those who have never married it is noted that the latter group was 13 times more likely than the singles to have had concurrent sexual partnerships in the last 12 months (OR 13.29, 95% CI 11.04 to 16.02). The married men or living together were more likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 2.30, 95% CI 1.75 to 3.01) and were more likely to have had unprotected sex in the last encounter (OR 2.01, 95% CI 1.12 to 3.62 and more likely to have had coital debut at 17 or younger (OR 1.42, 95% CI 1.14 to 1.75). When compared to the single men, those who had never been married, the divorced, widowed and separated were more likely to have had concurrent sexual partnerships in the last 12 months (OR 2.07, 95% CI 1.59 to 2.71). These divorced, widowed and separated men were also more likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 2.64, 95% CI 1.77 to 3.95), more likely to have had coital debut at 17 or younger (OR 1.85, 95% CI 1.33 to 2.57).

REGION OF RESIDENCE

Concerning region of residence, men living in Mashonaland east were less likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 0.25, 95% CI 0.14 to 0.44) and were less likely to have had coital sexual debut at 17 years or younger (OR 0.64, 95% CI 0.45 to 0.91) compared with men in the Harare region hosting the capital city. Men residing in Matebeleland North were more likely to have had concurrent sexual partnerships in the last 12 months (OR 2.00, 95% CI 1.44 to 2.78) compared to men residing in Harare region. Men residing in Matebeleland South were however more likely to have had concurrent sexual partnerships in the last 12 months (OR 1.60. 95% CI 1.14 to 2.24), less likely however to have had multiple concurrent

sexual partnerships in the last 12 months (OR 0.14, 95% CI 0.05 to 0.40) and were less likely to have had coital debut at 17 years or younger (OR 0.54, 95% CI 0.35 to 0.83). Men residing in Masvingo were more likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 1.51, 95% CI 1.06 to 2.17) compared with men in Harare hosting the capital city. Men in Manicaland were less likely to have had coital debut at 17 or younger (OR 0.68, 95% CI 0.49 to 0.93) when compared with men residing in the Harare region. Men in Bulawayo were more likely to have had concurrent sexual partnerships in the last 12 months (OR 2.22, 95% CI 1.69 to 2.91) and more likely to have had coital debut at 17 years or younger (OR 1.36, 95% CI 1.02 to 1.81).

RELIGIOUS AFFILIATION

Considering religious affiliation, men belonging to Protestant and Pentecostal churches were less likely to have had concurrent sexual partnerships in the last 12 months (OR 0.77, 95% CI 0.65 to 0.91) and less likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 0.70, 95% CI.056 to 0.89) when compared with men with no religious affiliation at all. The men belonging to the Apostolic sect were less likely to have had multiple concurrent sexual partnerships in the last 12 months (OR 0.60, 95% CI 0.47 to 0.77), less likely to have had coital debut at 17 years or younger (OR 0.75, 95% CI 0.62 to 0.91) but were more likely to have had unprotected sex in their last encounter (OR 1.90, 95% CI 1.06 to 3.41) when compared with men with no religious affiliation. Men belonging to other Christian groups were less likely to have multiple concurrent sexual partnerships in the last 12 months (OR 0.42, 95% CI 0.23 to 0.77).

CHAPTER 6

DISCUSSION

CHARACTERISTICS OF THE RESPONDENTS

The main objective of this study was to examine the association between wealth and men's sexual behaviour in Zimbabwe. A close look at the characteristics of the study population revealed that most of the survey respondents were quite young, with men 15 -24 years old constituting 46.8% of the survey respondents. Similar findings were reported by Kongnyuy et al. (2006) in Cameroon where most of the study population was also quite young with the men 15 -29 approximately old making up 48.3% of the survey respondents. Global trends have shown the high proportions of "this young age group" in the populations in developing countries. The survey was also dominated by men from wealthy households as they comprised 50.9% of the survey respondents. The men from middle wealth households constituted 17.2% of the survey respondents whilst men from the poor households made up 31.9% of the survey respondents. In terms of levels of education of the male participants, 65.3% had secondary education followed by 28.8% who had primary education and 5.9% had higher education. Thus it can be summed up that the respondents comprised of mostly young men who were wealthy and with secondary education.

This study has also shown that 56% of the men that participated in the study had engaged in concurrent sexual partnerships in the 12 months preceding the survey and 8.9% had engaged in multiple concurrent sexual partnerships in the 12 months preceding the survey. It was also found out that 35.1% of these men had engaged in unprotected sex. The high concurrent rates among these men of 56% coupled with 35.1% of men engaging in unprotected sex could have been some

of the key factors that put the general population HIV prevalence rates in Zimbabwe at 19% in 2005. While the trend from 2001 at 27% to 19% in 2005 shows a decline, this HIV prevalence rate of 19% was still high. From these findings it seems that sexual behaviours especially multiple and concurrent sexual partnerships, unprotected sex were driving the epidemic. The question is where are these sexual behaviours in the infection equation for one to appreciate the contribution of the sexual behaviours mentioned above to HIV incidence in a population?

CROSSTABULATION OF SEXUAL BEHAVIOUR AND WEALTH

The study found support for the research hypothesis and can conclude that there was association between men's household wealth and engagement in concurrent sexual partnerships. However the Cramer's V coefficient which measures the strength of the association showed that there is little if any association between concurrent sexual partnerships and household wealth. Crosstabulations also revealed that there was no association between multiple concurrent sexual partnerships and men's household wealth. This was confirmed by Cramer's V coefficient, that revealed that the strength of association to be of low, which is no association between concurrent sexual partnerships and household wealth basing on data from 2005/6 ZDHS. However the crosstabulations between unprotected sex and wealth, in the study, showed that there is association between unprotected sex and household wealth. This was confirmed by Cramer's V coefficient which showed moderate association between unprotected sex and household wealth basing on data from 2005/6 ZDHS.

BIVARIATE ANALYSIS

The study did not find support for the research hypothesis and could not conclude that wealth was associated with multiple concurrent sexual partnerships. However, bivariate analysis revealed that

wealth was associated with concurrent sexual partnerships and unprotected sex in the last encounter.

In the crosstabulations and bivariate analysis, there seems to be a consistent pattern in wealth not being associated with multiple concurrent sexual partnerships and also consistence in association of wealth and unprotected sex. Inconsistent associations were noted between concurrent sexual partnerships and wealth.

MULTIVARIATE ANALYSIS

Our contention in this study that wealth was associated with risky sexual behaviours among men in Zimbabwe was confirmed only for unprotected sex and not for multiple and concurrent sexual partnerships. After controlling for other factors, the men from middle wealth households were less likely to engage in unprotected sex compared to men from poor households. Our findings are consistent with Tladi (2006) who highlighted that the poor and less educated were more likely to engage in unprotected sex.

These findings are not consistent with findings from other researchers. Kongnyuy, et al. (2006) in their Cameroon study observed that the wealthier men in Cameroon were likely to engage in unprotected sex. Findings in this study are also inconsistent with the findings by Shelton et al. (2005) in which they reported that household wealth in Tanzania was associated with HIV prevalence. In Ghana wealthiest men were more likely to engage in unprotected sex (Kongnyuy, et. al, 2006).

Condom use is a mediating factor in the HIV infection equation that affects the potential for transmission of infection from infected partner. That's why some researchers have interchangeably focused on risky sexual behaviours and level of infection. Most debates have centred on associations between wealth status and levels of infection with some measuring sexual risk taking behaviours against wealth status.

The wealthy are more likely to adopt safer sexual behaviours. Borrowing from David Cohen, a UNDP senior advisor on HIV and Development with UNDP, wealth is generally associated with strong endowments of human and financial resources such high levels of education with associated high levels of literacy and more marketable skills, generally good health status and high labour productivity as a result. The wealthy households are often politically and socially recognised. These advantages of social inclusion increase their opportunities for interventions aimed at changing their sexual behaviours. Most of the IEC activities are likely to reach the wealthy households and usually relevant, operable given the reality of their lives. These people usually have the incentive and resources, unlike the poor ones, to adopt the recommended sexual behaviours like use of protection in this study.

However Fox (2010) and Bingenheimer (2010) believe that wealth provides the means to sustain sexual networks and that’s why there is an increase in HIV prevalence amongst the wealthy. These people are often educated, with higher disposable income of fungible economic resources which makes then adopt unsafe sexual behaviours. Literature has it that there has been a myriad of mixed associations however between wealth and sexual behaviours in the different countries. This may be explained by countries or regions being at different levels of the HIV epidemic different

cultural contexts and different levels of sexual behaviour transitions from unsafe to safe sexual behaviours (Kongnyuy, 2006).

However in this study, after controlling for age, education level, marital status, type of place of residence, region of residence and religion, the relationship between wealth status and sexual behaviours (concurrent sexual partnerships and multiple concurrent sexual partnerships) was statistically insignificant with p-Values greater than 0.05. These findings are consistent with the findings by Kimuna and Djamba (2005) who found that in Zambia none of the three proxies of wealth (household wealth index, education level and occupation) was associated with extramarital sex. The findings are also similar to Asare and Annim (2008)'s findings in which after controlling for other factors for males in Ghana, the association between wealth and sexual behaviour was statistically insignificant. The study findings are also consistent with the findings in Cote d'Ivoire that highlighted that household wealth was not significantly associated with men's extramarital sex as measured in this study as concurrent sexual partnerships in the last 12 months and multiple concurrent sexual partnerships in the last 12 months (Kimuna and Djamba, 2005).

These findings are not consistent with the findings by Mitsunaga et al. (2005) who reported that wealthy men in Nigeria were more likely to have extramarital sex than the poor men. Shelton, et. al, (2005) also reported that in Tanzania amongst men there was no association between wealth and number of sexual partners or with a prostitute in the past 12 months. The findings are also similar to Asare and Annim (2008)'s findings in which after controlling for other factors for males in Kenya wealth was associated with sexual behaviour.

The reason why household wealth is not more strongly or consistently associated with men's multiple sexual partnerships is not clear (Bingenheimer, 2010). However there is a possibility that household is not identical to control of fungible economic or financial resources. A closer analysis of the wealth index, it is noted that for example cement floors and running water are not particularly fungible. Some goods may be readily transferable like television or bicycle and they are regarded more as household assets than individual assets or as individual assets of household members other than the respondent focused on by the study. It is also important to note that the mixture of items often included in the wealth index variable and the distribution of men's positions within a household are different in each country. It is against this background of methodological complexities that gives the weakness and inconsistency in the findings with respect to the Demographic and Health Survey wealth index. The association between wealth and men's multiple concurrent sexual partnerships is strongest and most consistent in West African countries where HIV prevalence has been noted to be lower than in East and Southern Africa. This finding may be plausible, but is may be attributable to reductions in multiple concurrent partnerships among the wealthier who are often better informed in high prevalence but not low prevalence settings (Bingenheimer, 2010).

Positive associations between wealth and multiple concurrent sexual partnerships have been recorded in other countries. There is however extensive evidence on the role of multiple and concurrent sexual partnerships in enhancing HIV infection in populations. These sexual behaviours influence whether the sexual contact is potentially infectious that influence exposure to infection. (Slaymaker, et. al, 2004). Networks of longer term multiple and concurrent sexual partnerships may contribute more to new infections (HIV incidence rates) than serial monogamy and once off

sexual encounters. Here primary partner may have no other partner but secondary partner may have another concurrent sexual partner in another sexual network and this creates a sexual web or network. Even though the average number of partners per person may be low, HIV risk in this network is high. Once one person in the concurrent sexual partnerships web is HIV infected, everyone in the web is at high risk because more people are exposed to the virus and also because recently infected people have very high viral loads and much more infectious (Shelton , et. al, 2005).

However note that wealth is a key factor in sustaining these networks. It is associated with mobility, time and resources to sustain concurrent sexual partnerships. The relationships may have a strong economic bearing but poverty may not be a key factor. Wealth also provides opportunities for social interaction, thereby creating opportunities for partnerships to develop (Shelton, et. al, 2005). It could safely be said that this wealth and economic disadvantage are a function of the HIV infection equation. This explains the other observed positive associations in other countries mentioned above like Nigeria, Cameroon and Tanzania and Kenya. As has already been mentioned, the differences in association between wealth and sexual behaviours or HIV risk noted amongst different countries may be attributed to the different socio-cultural practices and the different stages of the HIV epidemic in different countries (Kongnyuy, et. al, 2006).

CHAPTER 7

7.0 CONCLUSION AND RECOMMENDATIONS

7.1 CONCLUSION

The main objective of this study was to examine the association between wealth and men's sexual behaviour in Zimbabwe. Our contention or hypothesis in this study that wealth was associated with risky sexual behaviours among men in Zimbabwe was only confirmed for unprotected sex in the last encounter. After controlling for other factors, the men from middle wealth households were less likely to engage in unprotected sex compared to men from poor households. The hypotheses that (i) wealth was associated with multiple sexual partnerships and (ii) wealth was associated with concurrent sexual partnerships and were not confirmed in this study.

7.2 RECOMMENDATIONS

There is need to continue with investment in targeted behaviour change interventions that emphasize on education on HIV and AIDS and the provision of general information across the social strata. Equitable distribution of wealth and sound economic policies are critical in improving the general welfare of nationals so as to eliminate some of the factors that cloud the associations between socioeconomic and demographic factors and sexual behaviours of individuals or subgroups.

While most interventions have specifically emphasized on the sexual risk taking of young people, there is need to also include the older age groups. There has been less effort in terms of focus on the subgroups and individuals in the higher income or wealthy and older categories that can use

their “fungible economic resources” as described by Bingenheimer (2010) or disposable income for risky sexual behaviours and sustaining sexual networks.

Most interventions have also focused on the sexual networking of young females with older males but emphasizing more on the young females. These interventions have deliberately neglected the older males especially the married or those in unions that drive and sustain these sexual networks with young women. Thus the older males especially the married or those in some union constitute a target group for HIV intervention because these older men often have disposable income that creates an enabling environment for sexual risk taking behaviour (Asare and Annim, 2008).

The changing phases of HIV infection demonstrates that there are a number of socio-demographic factors that explain sexual risk- taking behaviour that exposes people to risk. Poverty is no longer the only key factor that drives the pandemic amongst men. Interventions must focus on behaviour change in the area of multiple concurrent sexual partnerships going beyond the ABC strategy. Whilst behaviour change takes time but the success cases in Uganda and Ghana show that behaviour change strategies provide results in reducing risky sexual behaviours (Asare and Annim, 2008)

Multiple and concurrent sexual partnerships drive epidemics so fast. Even though the average number of partners per person may be low, HIV risk in a sexual network is high. Serious attention should be given to partner reduction to reduce the prevalence rates. In Zimbabwe there must be concerted effort to maximize the success of prevention strategies relating to multiple and concurrent sexual partnerships by ensuring the prioritization of reduction in multiple concurrent sexual partnerships. This should include a reduction in the number and density of sexual networks

through social and behavioural change. It may be necessary, where feasible, to address structural factors (such as lengthy separation of partners due to employment practices and economic migration) that increase the likelihood of multiple concurrent sexual partnerships (UNAIDS, 2009).

The second priority of the interventions should be a reduction in the transmission of HIV within multiple and concurrent partnerships, and particularly within known discordant relationships (involving one partner who is HIV positive and the other HIV negative); including through consistent, correct male or female condom use, male circumcision, HIV counselling and testing (though antibody tests during the acute infection phase are generally negative) and antiretroviral therapy (ART) adherence (UNAIDS, 2009).

Finally, it must be reiterated that equitable distribution of wealth and sound economic policies are critical in improving the general welfare of nationals so to reduce or eliminate some of the factors that cloud the associations between socioeconomic and demographic factors and sexual behaviours of individuals.

7.3 LIMITATIONS OF THE STUDY

When interpreting these findings it is critical to take note of the following limitations in the research design and methodology. In this study we did not control for unsafe health practices. It has been reported that epidemiological studies on HIV in sub-Saharan Africa may be driven by iatrogenic transmission through unsafe injections. There is no clear evidence that HIV transmission occurs through use of unsafe (unclean) medical injections in Zimbabwe, but data is limited (ZNAC, 2011). When unsafe health care is controlled for the apparent associations between sexual behaviours and HIV infection become non-significant. In this study we did not consider the

potential confounding effect of polygamy on the relationships found. Some men reported having two or more wives (Kongnyuy, et. al, 2006).

The data used for this study was based on self reported data of which accuracy of self reports of sexual and other sensitive behaviours has always posed challenges to many social and behavioural scientists (Bingenheimer, 2010; Cleland, et. al, 2004). There are known factors that appear to influence the accuracy of retrospective self report of sexual behaviour that include the demands of the recall task and related memory error, and the social context of assessment which can influence self report bias (Schroder , et. al, 2003). Several internationally important studies on data validity and behavioural survey methodology have been conducted in Zimbabwe. These have demonstrated that self-reported data have poor validity and that interview methodology was critical. To some extent underreporting of multiple sexual partnerships is more serious amongst women than men and as a result the limitation may not be as severe for men but may suffer over reporting e.g., the never married men may exaggerate their sexual experiences with married men underreporting their extramarital experiences. The differential reporting could introduce bias causing distortions in results with respect to some demographic characteristics like marriage than others (Kongnyuy, et. al, 2006; Bingenheimer, 2010).

Sexual behaviours and demographic variables used in this study do not look at the social contexts of the men under study for these are critical to get the big picture and also that some of these aspects of sexual behaviour discussed in this study may not have the same socio-demographic correlates as multiple and concurrent sexual partnerships, coital debut at 17 years or younger and unprotected sex or use of condom etc. All major components of behavioural risk and their

complex and contradictory relationships with socio- demographic variables are critical for one to get a complete picture of men's behavioural risk for HIV acquisition of transmission in sub Saharan Africa (Bingenheimer, 2010).

It is important to also note that household wealth and education are not necessarily the best proxies for men's control of fungible economic resources. Also urban residence may not necessarily be a complete indicator of men's exposure to social control mechanisms (Bingenheimer, 2010). Finally, another limitation is that the Zimbabwe DHS did not collect information on the sex of the partners as there is evidence of homosexual relationships in Zimbabwe and anal sex has been reported elsewhere and thus sexual practices recorded may not necessarily reflect the population at large (Kongnyuy , et. al, 2006).

7.4 Areas of further research

The absence of a regular sexual partner can initiate sexual networking with social or economic dimensions. The influence of being single on sexual risk-taking behaviour is an area needing research attention (Asare and Annim, 2008). Also if wealth is not significantly associated with multiple and concurrent partnerships what are the key drivers of "small houses" in Zimbabwe and what are the regional patterns and trends relating to the "small house" phenomenon?

Whilst this study attempted to provide insight into socioeconomic and demographic variables influencing sexual behaviour of men, more research is needed to provide more understanding of the variables or factors that predispose individuals to taking sexual risks as this assists in expanding the range of information and services needed by such individuals or subgroups.

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APPENDIX ONE

APPENDIX 3.2 RECODING AND DEFINITION OF INDEPENDENT VARIABLES

VARIABLES	MEASUREMENT	VARIABLE EXTRACTED FROM 2005/6 DHS	VARIABLE TRANSFORMATION (RECODING) / DEFINITION
Wealth	Household Wealth of men who participated in the survey	Wealth index	For the purposes of this study the 2005/6 ZDHS variable was recoded into the following categories: (Poorest + poorer) were recoded as: Poor households (1) Middle) were recoded as: Middle wealth households (2) (Richer + richest) were recoded as: wealthy households. (3)
Education level	Education level of survey participants	Education level	For the purposes of this study the 2005/6 ZDHS variable categories were recoded into the following categories: (No education+ primary) were recoded as: Primary education (1) (Secondary education (2) Higher education (3)
Age	Age of participants	Current age	The 2005/6 ZDHS variable was then recoded into different variable with the following categories: 15-24 age group (1) 25-34 age group (2) 34-44 age group (3) 45+ age group (4)

Marital Status	Marital status of the participants	Marital status	The 2005/6 ZDHS variable categories were recoded into the following categories: Never married (1) Married /Living together (2) Divorced/ not living together/widowed (3)
Place of residence	Indicated place of residence of survey participants	Place of residence	Place of residence were recoded in the 2005/6 ZDHS and categorized as: Rural (1) Urban (2)
Region	Indicated region of residence of survey participants	Region of residence	Region of residence in the 2005/6 ZDHS was recoded as regions with following categories: Harare (1), Bulawayo (2) , Manicaland (3), (Mashonaland East (4) Mashonaland West (5), Mashonaland Central (6) Masvingo (7) , Matabeleland North (8) Matebeleland South (9), Midlands (10)

Religion	Indicated religious affiliation of survey respondents	Religious affiliation	For the purposes of this study the 2005/6 ZDHS Religious affiliation variable categories were recoded as follows: None (1) Roman Catholic (2) Protestant / Pentecostal (3) Apostolic sect (4) Other Christian (5) Traditional (6) Muslim (missing, too few cases)