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Is Marriage a Viable Strategy of Reducing HIV/AIDS Infection Among Women in Zimbabwe?

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FACULTY OF HUMANITIES

SCHOOL OF SOCIAL SCIENCES

SUPERVISOR

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DECLARATION

I **Jeremy Dickson Gumbo** declare that this research report is my own 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.

Jeremy Dickson Gumbo

12th August, 2011

Acknowledgements

Just like every success I have scored in my life, I owe the successful completion of this research project first and foremost to my **Lord Jesus Christ** and secondly to my ever supportive **God**-given wife Stella Regina Gumbo.

My sincere and special gratitude goes to Professor Clifford Odimegwu, for his guidance from the start of this work till finish, as my supervisor and as a mere advisor at times. Three times my supervisors were changed, but he has remained my main resort for advice. To Dr Leticia Fernandez, my supervisor at the crucial stage of drafting my research proposal, I also feel credited to you for improving my approach to research work.

I'm also grateful to my fellow post graduate students in Demography & Population Studies, for being supportive of my work in different ways. I wish them the best in their research work as well.

Dedication

To my family at large, that includes; my wife Stella, children Nyasha, Tapiwa, Zvikomborero & Tanatswa; my parents Jorum MacDonald and Naggie Olipha and my in-laws D.J. Makoni (Mr.) and P. Makoni (Mrs.)

Abbreviations

AOR : Adjusted Odds Ratio

CI : Confidence Interval

HIV/AIDS : Human Immune Deficiency Virus/Acquired Immune Deficiency Syndrome

MCPs : Multiple Concurrent Partners

ND : No Date

OR : Odds Ratio

RC : Reference Category

SSA : Sub Sahara Africa

STIs : Sexually Transmitted Infections

UNAIDS : Joint United Nations Programme on Acquired Immune Deficiency Syndrome

UOR : Unadjusted Odds Ratio

WHO : World Health Organization

ZDHS : Zimbabwe Demographic Health Survey

Abstract

Background**:** Using Zimbabwe Demographic Health Survey 2005-06 data, this study examined the viability of marriage as a prescription in reducing HIV/AIDS infection among Zimbabwean women. In a population where heterosexual intercourse is the main mode of transmission and the practice of multiple concurrent partners is highly prevalent and tolerated, the study examined HIV/AIDS prevalence among women according to their marital status and coresidence status. The study argues that low HIV/AIDS prevalence among currently married women, and coresiding women relative to never married and formerly married women, and non coresiding women respectively suggest that marriage is a viable behavioral measure in reducing HIV/AIDS infections.

Methods: A total of 4,491 women undertook HIV testing and were used in this study to examine HIV/AIDS prevalence according to marital status. Descriptive statistics from cross tabulations manipulated by STATA 11 were used in exploring HIV/AIDS prevalence among these women. Furthermore, various multivariate logistic regressions were carried out to isolate the effects of marital status, socioeconomic, demographic and sex risk behavior factors on HIV/AIDS infection.

Results**:** The major finding of the study was that currently married women had lowest HIV/AIDS prevalence compared to both never married and formerly married women. Furthermore, HIV/AIDS prevalence was lower among women coresiding than those not coresiding.

Conclusion: There is a strong association between marital status and HIV/AIDS status among Zimbabwean women, and marriage is a likely viable measure in reducing HIV/AIDS infections.

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CHAPTER 1

1.1 Introduction

Issues concerning women's well-being and welfare have become salient to population health since the International Conference on Population and Development in Cairo in 1994. The reasons for this are that women empowerment is a major step towards reducing child mortality, improving population health and enhancing the chances of reaching the Millennium Development Goals (Mosley and Chen, 1984). A major setback towards achieving these efforts has been the impact of HIV/AIDS pandemic among women in Sub-Sahara Africa (SSA) who by 2008 constituted an estimate of 55% of the total number of infected individuals in this region (Avert, 2008; Marawanyika, 2010). The main mode of HIV/AIDS transmission in this region, where the culture permits polygamy, and the practice of multiple concurrent sexual partnerships (MCPs) is highly prevalent, is through heterosexual intercourse (Bove and Valegia, 2009). The practice of MCPs is found in both sexes, but more prevalent among men (Leclerc-Madlala, 2004). In Zimbabwe the term "small house" has been coined to particularly describe men's extra marital behaviour (Chigandu, 2007; Ndlovu, 2004).The President of Zimbabwe, Robert Mugabe conceded that the "small house" phenomenon is now stuck in the Zimbabwean society and that men, including him, find it difficult to move out of it, though much to the suffering of women (Metro Zimbabwe, 2010).

1.2 Statement Problem

Research has identified the practice of MCPs as making individuals highly susceptible to sexually transmitted diseases like HIV/AIDS (Leclerc-Madlala, 2004; Clark, 2006). Men's MCPs practice in SSA is mainly driven by cultural norms e.g. acceptance of polygamy and perception among men that manhood is measured in the society by the number of sexual partners they have (Leclerc-Madlala). For women the reasons to have MCPs might vary from love for luxury goods and gifts that come with several partnerships especially with financially stable men, to desire to get sympathy and appreciation that could be lacking in current relationships. MCPs practice for subsistence though still one of the reasons, can no longer be viewed as the single driving cause for this practice by women (Leclerc-Madlala, 2004; Hattori et al., 2006). Research suggest that MCPs practice is highly prevalent among single individuals and lower among married individuals as there is assumed high sexual exclusivity in marriage (Hattori et al., 2006). It is therefore possible that since marriage most likely proffers long term sexual exclusivity, higher proportion of married individuals should be associated with lower risk of HIV/AIDS infection (Hattori et al., 2006). Such a perception might have most likely resulted in many people in Africa, e.g. policy makers, parents and women to view marriage, particularly monogamy, as offering safety from HIV/AIDS infection (Reniers, 2008). However, empirical evidence from some cities in Sub Sahara

Africa like Kampala, Cotonou, Yaoundé, Kisumu and Ndola suggests high HIV/AIDS prevalence among married individuals (Bauer, 2007; Shisana et al., 2004).

1.3 Research Question

Is there an association between marital status and HIV/AIDS infection among women in Zimbabwe?

1.4 Objectives of the Study

1. To estimate the prevalence and describe patterns of HIV/AIDS infection among never married, currently married and formerly married women in Zimbabwe.

2. To examine the relationship between various socioeconomic, demographic, and HIV/AIDS risk behaviour factors and women's HIV/AIDS status by marital status in Zimbabwe.

3. To compare patterns of HIV/AIDS infection in Zimbabwe between women coresiding and those not co residing.

1.5 Hypothesis

1. The research expects to find that never married women have a higher HIV/AIDS prevalence than currently married women in Zimbabwe.
2. The research also expects to find lower HIV/AIDS prevalence among currently married women than formerly married women in Zimbabwe.
3. Finally, the research expects to find lower HIV/AIDS prevalence among women coresiding than among non coresiding women.

1.6 Justification of Study

There has been little research on the subject of how women's marital status influences their risk of HIV/AIDS infection (Shisana, 2004). Most of the studies done have examined the relationship between marital status in general without looking at a specific sex and its association with HIV/AIDS status. Controlling for sex in such a study is crucial especially in a region like SSA where there is high prevalence of gender inequality (UNAIDS 2006).

A further significance of this topic is that women's right to control their sexual reproductive health are diminished by their exposure to HIV/AIDS (Dunkle et al., 2008). The new approach to women's reproductive health since the Cairo conference of 1994 emphasizes women's rights and empowerment. The adoption and implementation of this approach, especially in African countries where gender inequalities greatly compromise women's reproductive health, might enable women to take control of their sexuality and reproductive health (Gupta, 2000; UNAIDS/WHO, 2009).

Moreover, though it might be difficult to quantify with certainty the contribution of HIV/AIDS to mortality in SSA, the pandemic has become the leading mortality cause. In Southern Africa, HIV/AIDS could be accounting for more than 50% of total deaths today as suggested by statistics from South Africa where HIV/AIDS is estimated to have accounted for 57% of the total deaths in 2006 (Sausser et al, 2000; De Waal et al, 2003; Avert, 2008). Besides high death rates, the costs, morbidity, widowhood, orphanhood and other adverse effects resulting from this disease alone in Southern Africa are likely to be very high. This calls for more research around the topic to equip planners and the public in general to make well informed decisions.

Furthermore, the fact that from few studies done to date on the prevalence of HIV/AIDS infection by marital status in some African countries have not come up with similar results has motivated this study on Zimbabwe. For example studies in Ndola (Zambia), Yaoundé (Cameroon) and Cotonou (Benin) suggested high HIV/AIDS prevalence among individuals married contrary to findings from a study in South Africa (Shisana et al).

1.7 Limitations

Reverse causation

A major limitation of this research is that HIV/AIDS status of women before transitioning into current marital status is not known. It is possible that some women who are HIV-positive and are currently married might have been infected with HIV/AIDS virus when they were still single, but their HIV/AIDS status in this research would be treated as if they acquired it in marriage. It is also not clear in the case of formerly married women who are HIV-positive, whether they acquired that status before marriage, in marriage or after they left marriage. Yet this research treats all HIV-positive formerly married women as if they acquired that status after exiting marriage.

Data restrictions

Furthermore, the study has been restricted to using ZDHS 2005-06 data, as it is possibly the only comprehensive national survey to conduct HIV/AIDS test. The use of at least two or more sources of data could have strengthened the study's findings, since findings could comparable. Furthermore this data is no longer recent for such a study; it is highly possible that major changes have since transpired within the Zimbabwean population in terms of HIV/AIDS infection by the time this study was carried out. The 2010 ZDHS data would have been more applicable and recent to estimate current patterns of HIV/AIDS distribution among women in Zimbabwe, but unfortunately by the time this study was carried out this data had not yet been published.

Heterosexual as the sole mode of HIV/AIDS transmission

The study also makes an assumption that, all HIV/AIDS infections among women in the three respective marital categories have been transmitted through heterosexual intercourse. Heterosexual intercourse may be accounting for bulk of HIV/AIDS infections in Zimbabwe as is the case elsewhere within SSA, but not all cases. Human errors e.g. during blood donations and transfusions, and accidents during medical treatments are some of the possible modes of HIV/AIDS transmissions in Zimbabwe.

1.8 Definition of terms

1.8.1 Marriage

The term in this study describes any form of union that an individual has entered into be it through legal or traditional means or by mere cohabitation.

1.8.2 Coresidence

The term refers to women who are currently married and are living under the same roof with their partners.

1.8.2 Non coresidence

These are currently married women who are living apart from their partners.

CHAPTER 2

2.1 Literature review

2.1.1 Background

Findings from the few studies that have assessed the association between marital status and HIV/AIDS infections have not been conclusive. There are some studies suggesting that there is high sexual exclusivity in marriage, and that therefore, married women may have lower risks of HIV/AIDS infection (Shisana et al., 2004; Hattori et al., 2006; Gregson et al, 1995). However, other studies suggest the possibility of high risk of HIV/AIDS infection in marriage (Kathy et al, 2009; Mutheng, ND; Reither et al, ND). As means to reduce HIV/AIDS infections, health researchers have recommended behavioural strategies like abstinence from sex until married, condom use and sexual exclusivity. However, the three prescriptions have not always been adopted. Some studies find that in long-term relationships condom use is low or inconsistent, and that multiple concurrent sexual partnerships (MCPs) are culturally tolerated and are a widespread practice (Reniers, 2008; Heise et al, 1995; Schatz, 2005).

2.1.2 Sub-Sahara Africa and HIV/AIDS Prevalence

Developing regions have been the worst affected by HIV/AIDS, and in particular women in Sub-Sahara Africa (SSA) (UNAIDS/WHO, 2009; Lyons, 1995). In SSA region, factors like gender inequality, polygamy, poverty, and MCPs practice could be greatly contributing to high prevalence of this disease (Hattori et al, 2006; Bove and Valegia, 2009). African societal norms and values often favour men's dominance over women. In most cases men have control over means of production and women are mainly left to do reproductive-related work (Gupta, 2000; UNAIDS/WHO, 2009). This results in women remaining economically disadvantaged and dependent on men, consequently greatly compromising women's power to negotiate safe sex. Gender inequality is likely to impact on HIV/AIDS infection among never married, currently married, and formerly married women differently. Women in this region who are not in marriage are likely to have more power in decision making in sexual issues than women in marriage. Payment of bride price (lobola) is likely to result in trade off of women's control over themselves to their partners. Hence women in marriage are likely to yield less power on their sexuality in face of their partners compared to women who are out of marriage.

Polygamy is a culturally distinctive feature of African marriage which allows men to marry more than one wife, and the most widely recognised demographic and health consequence of polygamy is its effect on HIV and other sexually transmitted infections (Gregson et al, 1995; Bove et al, 2009; Hattori et al, 2006).The number of women seeking sexual and material satisfaction outside marriage might be higher among women in polygamy than those in monogamous union (Hattori et al., 2006; Rodriguez, ND). The SSA region also possibly has the

highest poverty prevalence than any other region in the world (Hattori et al, 2006). This is likely to be accounted for by a variety of reasons, one of which could be the long term effects of colonization. A positive relationship between poverty and risk of HIV/AIDS infection has been identified, especially among currently married women (Hattori et al., 2006). Poverty has a likely effect to push women into the practice of MCPs.

The practice of MCPs by both men and women is partly one of the major drivers of HIV/AIDS transmission in SSA. Individuals may have many sexual partners at once or overlapping over a period of time. The odds of coming across an infected partner are higher for individuals who encounter many sexual partners in their life time relative to individuals who have had less or have remained sexually exclusive. The risk is likely to further increase with the frequency with which individuals change partners within a given time.

2.1.3 Southern Africa and HIV/AIDS Prevalence

Within SSA region, HIV/AIDS statistics suggests that Southern African has the highest prevalence (Ndlovu, 2004). Worst affected countries in Southern Africa are Botswana, Lesotho, South Africa, Swaziland and Zimbabwe. For this reason, researchers have termed Southern Africa the "epicentre of the pandemic" (Ndlovu, 2004; Sausser et al, 2000; Campel et al, 1999). The prevalence of the disease is high in Southern Africa much that some research has suggested that there is likelihood of having about 1 in every 10 young uninfected women being infected each year (Sausser et al, 2000). Transmissions of HIV/AIDS in Southern Africa can partly be associated with high circular migrations which have been going on for a very long time. Migrations are possible means of exporting and importing diseases from geographical separate areas. South Africa's vast reserves of mineral resources like gold and diamonds have meant regular demand for both skilled and unskilled labour force mainly from her neighbouring countries. Botswana, Zambia and Zimbabwe have also been centres of attraction to migrant workers in mines, with the Zimbabwe until its recent economic meltdown being arguably the biggest centre of attraction for migrant farm workers in the region.

The impact of HIV/AIDS in this region has been immense especially towards food shortages. Of course a number of countries in the region might have been partly affected by occasional droughts resulting in food shortages. However, many households are likely to have suffered more food shortages which are related to the effects of HIV/AIDS morbidity and mortality in recent years in Southern Africa. It is also highly possible that HIV/AIDS has increased labour shortages more than any other disease of late, both skilled and unskilled. The age group largely affected by the disease happen to be the economically active people who are likely to be highly sexually active. This also partly impacts on the depreciation of household resources which are now likely to be spent on meeting the nursing costs of terminally ill relatives. Morbidity and mortality due HIV/AIDS related diseases have also possibly led to an increased dependency

ratio in Southern Africa (Sausser et al, 2000). Economically active people who become bed reddened by the disease increase the figures in the category of the dependent population. Added to this, economically active people who die of the disease reduce the population of economically independent people.

2.1.4 Zimbabwe and HIV/AIDS Prevalence

HIV/AIDS history

In Zimbabwe, the first HIV/AIDS case was reported in 1985 (Rodriguez, ND; Avert, 2008). Deteriorating political and economic situation in the country in the late 1980s can partly be blamed for contributing to the increase of HIV/AIDS infection rate, as the adverse environment likely increased poverty. Besides poverty, this possibly contributed to numerous partner separations as the other partners left in search of greener pastures, though it is also possible that in certain instances partners relocated together or maybe followed up later. At the close of the 1980s adult infection rate was estimated at 10%, and it reached its peak in 1997 at about 30% (Rodriguez, ND). Currently, HIV/AIDS prevalence remains high, but has been going down, and seems to have stabilized at an estimated 15.3% since 2006 (Gregson, 2007; UNAIDS/WHO, 2009; Avert, 2008). This made Zimbabwe the second country within the SSA region, after Uganda to report HIV/AIDS infection decline.

Efforts to control HIV/AIDS transmissions

The government of Zimbabwe can partly be credited for the drop in HIV infection rate through their massive HIV/AIDS public awareness campaigns, especially during Dr Timothy Stamps' era as Minister of Health since the beginning of the 1990s to mid 2000s, and the author is also a witness of such efforts. Despite receiving a paltry donor funding of $4 per each HIV/AIDS affected person in Zimbabwe, compared to neighbouring Zambia which gets about $187 per affected person, the government has shown resilience in fighting HIV/AIDS spread (Gregson et al, 2007). The government has had extensive HIV/AIDS prevention campaigns. Furthermore better health facilities set up since the 1980s, and a policy of ensuring a highly educated population has possibly paid dividends in an effort to fight the HIV/AIDS scourge. Complementary efforts have also been made by non-governmental organizations partly through distribution of condoms in health centres, night clubs, hotels and tertiary education institutions.

"Small house" phenomenon

One possible hindrance that might have compromised the success of these efforts by both Zimbabwean government and other organizations in effectively controlling HIV/AIDS spread may be the "small house" practice. This is a form of MCPs practice among men in Zimbabwe.

This term “small house” can be defined as a long term concurrent sexual relationship with another woman who is not the man’s regular partner (Chigandu, 2007). In this private set up, men assume the role of being heads of their “small house” households. Thus they fend for daily needs of the “small house”, by proving food, paying rentals, and even other extras like meeting educational requirements of the “small house” s own children. The relationship becomes a photo copy of the one the men have with their regular partners. For this reason, it is likely possible that these men often perceive their sexual relationships with “small houses” as safe from HIV/AIDS infection. Research has suggested that there has been no evidence of consistent condom use in such relationships (Gregson et al, 2007).

An advertisement screened on the Zimbabwean Broadcasting Corporation Television discouraging the “small house” practice asks if men know what their “small houses” do when they are not there. Then the answer suggests that she sleeps with Jonah, who has an affair with Nyarai, who in turn sleeps with Themba, and many long distance drivers (Masuku, 2009). The “small house” phenomenon has a potential effect of increasing HIV/AIDS infections among individuals both in and out of marriages.

Patriarchal Society

The Zimbabwean society has been largely identified as one where community priorities came first before individuals’ (Rodriguez, ND; Dunkle et al, 2008; Mhaka, 2010). For this reason cultural norms and values which are revered by the community which in most cases are in favour of men are likely to act as a vehicle for HIV/AIDS transmission among women through their male partners. Thandiwe from the Midlands province of Zimbabwe, has full blown AIDS, and concedes she knew her husband was promiscuous for a long time, but neither could she divorce him nor insist on condom use during sexual intercourse (Mhaka, 2010). Majority of women in Zimbabwe could be in this predicament.

2.1.5 Marital Status and HIV/AIDS Infection

Research carried out in the SSA region greatly suggests that there is a strong association between HIV/AIDS status and marital status (Shisana et al., 2004; Reither, 2009). However, it has remained unclear which marital category is associated with high risk of HIV/AIDS infection. Western theories suggest that there is high sexual exclusivity in marriage, and hence marriage is more likely to be protective against HIV/AIDS infections (Hattori et al, 2006). Probably this might be more applicable to western societies where generally women are largely in control of their sexuality. The view might meet some challenges in its applicability in SSA where gender inequality deprives women’s control on their sexuality especially those in marriage.

Sexual risk behaviour practices among married women might be due to a variety of reasons. Some might be going through abuse in their marriages. This might influence them to take

solace in having extra marital affairs, expecting to get the love and appreciation they assume to be missing in their marriages. Higher coital frequency associated with marriages is likely to further increase the risk of HIV/AIDS infection, the likely change of sexual partners by individuals by the time they marry increases the number of the individual's lifetime partners, and less chances of condom use are likely higher in marriages than outside marriage (Gregson et al, 2007; Slaymaker et al, ND). As a result being married has largely become synonymously perceived as increasing the individual's risk of HIV/AIDS infection in SSA especially among women (Hall, 2009; Rodriguez, ND; Dunkle, 2008). In this region though less research has been done to examine HIV infections in marriages, evidence available greatly suggests that women's greatest risk is in marriage (Dunkle, 2008; Bauer, 2007; Gregson et al, 1995; Hall, 2009).

Comparisons of HIV/AIDS infections by marital status from the studies cited above have mainly centred on currently married women against single women. Categorising women out of marriage as "single" is most likely to result in grouping together never married and formerly married women into one category. This study made an attempt to separate the two groups of women. The reason is that, it is more likely that risk of HIV/AIDS infection among never married and formerly married women greatly vary. Possible reason explaining why never married women especially in SSA are likely to have low risk of HIV/AIDS infection compared to currently married women is the assumed likely better control they have over their sexuality relative to the latter. From the case of Thandiwe noted earlier, it is more likely that payment of bride price is greatly misrepresented to suggest women's surrender of control over their lives to their husbands once the women's parents accepts the bride price. This possibly explains why women out of marriage have some substantial power to negotiate safe sex than women in marriage. The factors that are likely contribute to HIV/AIDS infection among women never married are MCPs practice, and inconsistent condom use especially in case of sexual intercourse with regular partners.

Formerly married women could have moved out of marriage as a way to avoid HIV/AIDS infection among other reasons. This is a strategy termed "negative selection" (Reniers, 2008; Kaler, 2004; Poulin, 2007). Partners suspecting their spouses of MCPs practice might initially try to engage their spouses in a dialogue to persuade them to desist from the practice. In case there is no change the affected partner may seek divorce as a measure to avoid further likely risk of HIV/AIDS infection from the relationship. However there is a possibility that individuals who divorced may most likely consider remarrying partners they perceive to have lower risk of HIV/AIDS infection, a strategy termed "positive selection" (Reniers, 2008). Possible factors likely to increase risk of HIV/AIDS infections among formerly married women are; the likelihood of many lifetime sexual partners, MCPs and also likely inconsistent condom use in case of a regular partner.

2.1.6 Behaviour Factors

Condom use

Condom use is today's strongest prevention method from HIV/AIDs infection (Pulerwitz et al., 2002, Mutheng, 2009). Consistent condom use during sexual intercourse always ensures that there is reduced seminal fluids interchange between the sexual partners. A research in Manicaland province of Zimbabwe noted that though casual sex has remained highly prevalent among men, however, because of consistent condom use (41.6% in 1998, 42.2% in 2003), HIV/AIDS prevalence has been declining (Gregson et al, 2007). Women's power to negotiate safe sex can be compromised by many factors like region's gender preferences, their wealth status and educational level to mention some.

Coresidence

There is also likely to be a significant variation of the risk of HIV/AIDs infection between coresident and non coresident partners. Coresidence is greatly associated with better partner monitoring, thereby likely reducing MCPs practice compared to non coresidence. In most cases non coresidence in SSA region is a result of partners migrating away from their homes to distance places for economic reasons. Migrant workers are more prone to risky sexual behaviours than non-migrant workers, especially if unaccompanied by partners (Deane et al; 2010, Clark, 2006).

STI infections

STI infections are likely to be strongly associated with HIV/AIDS infection. Preventing and treatment of STI in time is likely to reduce HIV/AIDS infections and transmission. STIs create open wounds and lacerations on the skin along the genital track and this facilitates the penetration of the virus into the blood stream of the victim. Ulcerative sexually transmitted diseases like syphilis and herpes cause both genital shedding and bleeding and this increases risk of HIV infection during sexual intercourse. Moreover further studies have shown that STIs increases susceptibility to HIV/AIDS infection by recruiting HIV-susceptible inflammatory cells to the genital tract which amplifies HIV infectiousness (O'Farrell, 2002; Gregson et al, 2005).

Sexual exclusivity

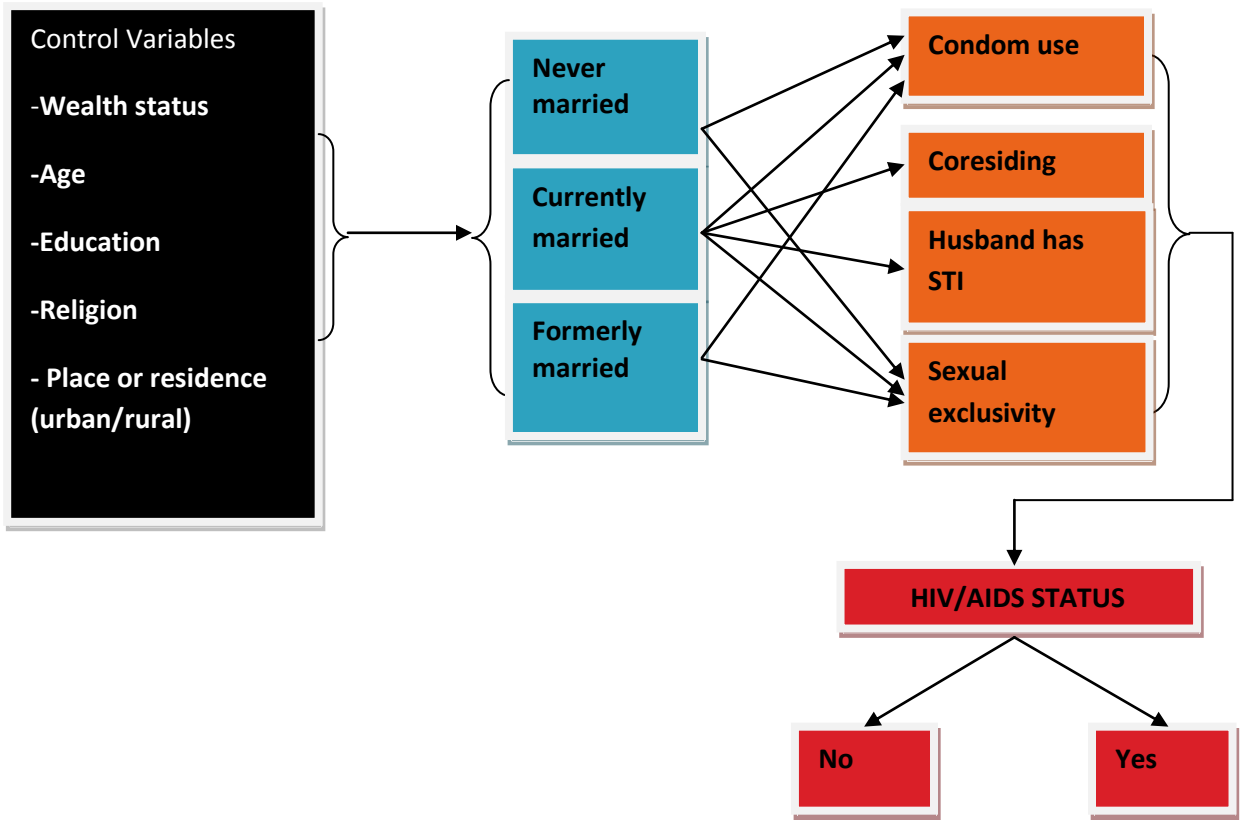
Having many sexual partners by an individual is a behavioural practice that increases the individual's risk of HIV/AIDS infection. An individual may have many sexual partners at once (MCPs), or over a period of time. Like in a study in Zimbabwe, findings were that women reporting many sexual partners had high risk of HIV/AIDS infection (Gregston et al, 2007).

Sexual exclusivity therefore, especially if practised by both partners is highly protective against HIV/AIDS infections and other sexually transmitted diseases.

2.2 Conceptual Framework

Marital status has no direct effect on HIV/AIDS status of women studied. This association is intermediated by behaviour factors of condom use, coresidence, husband has STI, and sexual exclusivity. Currently married women's effect on HIV/AIDS status goes through all the four behaviour factors, whereas never married and formerly women are likely to only go through condom use and sexual exclusivity. Socioeconomic and demographic factors are control variables.

Control variables: Socioeconomic-Demographic Factors. **Main variable:** Marital Status. **Intermediate & control variables:** Behaviour Factors.



CHAPTER 3

Methodology

3.1 Study Design

This study was conducted using Zimbabwe Demographic Health Survey (ZDHS) data for 2005-06 for women in the reproductive age 15 to 49 years. The ZDHS data of 2005-06 is a national survey, representative of all Zimbabwean women aged between 15-49 years and men aged between 15-54 years. It is the fourth national survey after those in 1988, 1994 and 1999, and is the only complete national survey so far to conduct an HIV/AIDS test (Central Statistic Office Zimbabwe, 2006). The 2002 Zimbabwe Master Sample (ZMS02), developed by Central Statistics Office (CSO) after 2002 population census was used as the sampling frame. For all the ten provinces of Zimbabwe a total of 34 strata were formed. The eight provinces which are not entirely urban i.e. Matabeleland North, Matabeleland South, Midlands, Masvingo, Manicaland, Mashonaland East, Mashonaland central and Mashonaland West, were stratified into four. The stratifications were communal, large scale commercial farming, urban and semi-urban areas, and small commercial farming areas and resettlement areas. For the provinces which are entirely urban i.e. Bulawayo and Harare one stratum (urban) was formed.

A total of 10,800 households were identified for the sample. However, by the time of the sampling 9,778 households were currently occupied, but by the time of the interview 9,285 households were only successfully interviewed. This produced a 95% household response rate. The main reason for the shortfall was that by the time of the interview some household in the sample were extinct. The survey interviewed 8,907 women from the initially identified 9870, giving a 90% response rate. Of the 8761 men identified, 7175 were successfully interviewed, yielding an 82% response rate. The main reason for non-response from the sampled women and men was the non availability of the expected respondents at their homes during repeated visits. Men were more frequently absent for longer periods from their homes than women, contributing to a lower response rate for men than women.

The survey covered topics like; fertility, sexuality, mortality, family planning, breast feeding, health, HIV/AIDS prevalence and other sexually transmitted diseases (CSO, 2009).

3.2 Study Population

A sub-sample of over 4,491 women was tested for HIV infection, and their privacy is strictly protected through CASEID technique. This is the population of interest in this study. The data was produced through merging of the individual's questionnaire data file with the HIV data file. The merging technique applied is common identification method. This data merging method

ensured the matching of results of blood test from the HIV data file with the relevant women tested for HIV from the individual data file.

3.3 Variables

3.3.1 Variables classification

Variables used in the study are classified as socioeconomic, demographic, and sex risk behaviour. Refer to Table 3 below.

3.4 Variables Definition

3.4.1 Dependent variable:

The dependent variable is women's HIV/AIDS status. The variable has a binary outcome of No and Yes for HIV-negative and positive women respectively.

3.4.2 Main Explanatory Variable

The central explanatory variable in this research is marital status. Three main marital categories are distinguished: never married, currently married, and formerly married. Never married refers to women of reproductive age who have never been in union. Currently married women include individuals in any form of unions i.e. by cohabitation, traditionally or legally married in a monogamous or polygamous union. Married women are further classified as either coresident or not coresident. Formerly married include divorced, separated and widowed women.

3.4.3 Other Variables

Intermediate & control

Behaviour factors with direct effect on HIV/AIDS infection include no condom use, non coresidence, husband has STI, and sexual exclusivity or not.

Control

Wealth status is categorised into three, poor women (bottom 40 percentile of the wealth distribution), includes women classified both poor and very poor. The second category is for women of medium wealth status (mid 20 percentile). Whereas rich women (top 40 percentile) includes women classified both rich and richest. Education level is coded as less than primary, primary to less than completed secondary, and completed secondary and above. Religion is categorised as Traditional, Christian, and Islam Others. Though religion tends to be stable, socioeconomic factors may change over time; however this study considers socioeconomic status and religious affiliation as at the time it was collected by the ZDHS data. Age is coded 15-24 years, 25-34 years and 35-49 years and place of residence as rural, or urban.

3.5 Measures

Women who never had sex

Women who never had sex were deliberately excluded from the study. This study focuses on women's HIV/AIDS *status after having had heterosexual intercourse.*

Multicolinearity

Inclusion of marital status and coresidence at once in any multivariate analysis was avoided as the two variables were highly correlated.

Controlling for various factors

In analysing the effect of women's marital status on HIV/AIDS status, the study controlled for various factors. Model 1 controlled for all other variables, model 2 controlled for socioeconomic factors, model 3 for demographic factors and model 4 controlled for behaviour factors. When analysing the effect of women's coresidence status and HIV/AIDS status, again four logistic regressions in the same order as above were carried out.

3.6 Data Analysis

Descriptive statistics were used to examine the prevalence of HIV/AIDS infection among women according to both their marital status and coresidence. A two variable cross tabulation for marital status against HIV/AIDS was performed. Furthermore, three variable Cross tabulations of each variable that would be used in the logistic regression model were carried out against marital status and HIV/AIDS status. The same was done for coresidence. The formula applied in computing the estimates for HIV prevalence according to marital status, and according to coresidence status for different characteristics is shown using example of wealth status in Example 1 (Table1) and Example 2 (Table 2)

3.7 Formula for computing HIV/AIDS prevalence according to women's marital status.

Example 1

Table 1

Wealth status	Never married		Currently married		Formerly married		Never married	Currently married	Formerly married
	Pop Exposed	Pop HIV +	Pop exposed	Pop HIV+	Pop exposed	Pop HIV+	% HIV positive	% HIV positive	% HIV positive
poor	A	a	F	f	I	i	(a/A)*100	(f/F)*100	(i/I)*100
medium	B	b	G	g	J	j	(b/B)*100	(g/G)*100	(j/J)*100
rich	C	c	H	h	K	k	(c/C)*100	(h/H)*100	(k/K)*100

Pop = population, HIV+ = HIV positive.

3.8 Formula for computing HIV/AIDS prevalence according to women's co residence status

Example 2

Table 2

Wealth Status	Coresidence		Non coresidence		Coresidence	Non coresidence
	Pop exposed	Pop HIV+	Pop Exposed	Pop HIV+	% HIV positive	% HIV positive
poor	A	a	D	d	(a/A)*100	(d/D)*100
medium	B	b	E	e	(b/B)*100	(e/E)*100
rich	C	c	F	f	(c/C)*100	(f/F)*100

Bivariate analysis using logistic regression was performed for all the variables considered for the bigger models to examine unadjusted odds ratios. Four multivariate models were run to isolate the effect of marital status on HIV/AIDS status, and another four to isolate effect of coresidence on HIV/AIDS status.

The model is stated below as,

$$\textit{In Prob}[\text{HIV= Y/HIV=N}]=\alpha+\beta_1 M.S+\beta_2 W.S+\beta_3 E.L+\beta_4 R+\beta_5 A+\beta_6 P.R+\beta_7 C.U+\beta_8 C.R+\beta_9 H+\beta_{10} S.P$$

This equation models the probability of an HIV-positive result (HIV=Y) versus an HIV-negative result (HIV=N) as a function of set of explanatory variables outlined in the model. Whereas α is

the constant, which indicates the probability of rejecting the hypothesis being tested; and the Xi are the set of explanatory variables. These include marital status (M.S) wealth status (W.S) education level (E.L), religion (R), condom use (C.U), co-residing (C.R), Husband has STI infection (H), number of sexual partners (S.P)

The study used STATA version 11 for data manipulation. All tests were done at 5% significance level and at a confidence interval of 95%. For all associations tested between variables in the study, odds ratios (ORs) were used to interpret the strengths of the respective associations.

3.9 Table 3. Variables Table

CHARECTERISTIC	CATEGORIES
Demographic Variables	
Marital status	Never married Currently married Formerly married
age	15-24 years 25-34 years 35-49 years
Place of residence	Rural Urban
Socioeconomic Variables	
Wealth status	Poor Medium Rich
Education	No primary ≥ primary < completed secondary Completed secondary
Socio cultural Variable	
religion	Traditional Christianity Islam and others
Sex risk Behavior Variables	
Co residence	Yes No
Condom use	No Yes
Husband has STI	No Yes
Sexual exclusivity	No Yes

3.10 Table 4: Zimbabwe's Provinces

Name of Province	Stratification of Province
Bulawayo	Urban
Harare	Urban
Manicaland	Urban Semi urban Communal Commercial farming
Masvingo	Urban Semi urban Communal Commercial farming
Mashonaland Central	Urban Semi urban Communal Commercial farming
Mashonaland East	Urban Semi urban Communal Commercial farming
Mashonaland West	Urban Semi urban Communal Commercial farming
Matebeleland North	Urban Semi urban Communal Commercial farming
Matebeleland South	Urban Semi urban Communal Commercial farming

CHAPTER 4

4.1 Profile of Respondents: Marital Status

Table 5 shows results from cross tabulations, describing the distribution of HIV/AIDS infections by each characteristic according to marital status. Overall total HIV/AIDS prevalence suggests that currently married women had lowest HIV/AIDS prevalence of 18.02%. Never married women had 28.10% and 45% for formerly married women.

Among individuals classified as poor currently married women had lowest prevalence of HIV/AIDS of 16.9%, followed by never married at 28.1% and formerly married at 37.3%. Currently married women of both medium and rich wealth status also had lowest HIV/AIDS prevalence of 17.2% and 21% respectively. Never married women were second in both categories at 30.2% and 26.7% respectively. Acquiring high education among Zimbabwean women was associated with lower risk of HIV/AIDS infection. Among individuals who completed secondary and above education, formerly women had 6.16% HIV/AIDS prevalence, the lowest prevalence recorded for any characteristic. Currently married women had 13% and never married had 20%. In the other two categories of no primary education, and completed primary to less than completed secondary education, currently married women had lowest HIV prevalence of15.5% and 20.2% respectively. In both the latter categories, formerly married women had highest HIV/AIDS prevalence. Women who believed in traditional religion, prevalence of HIV/AIDS was 21.7% for currently married women, 25% for never married and 33.3% for formerly married. Among Christian women, highest HIV/AIDS prevalence was among formerly married, 45.5%, followed by never married at 32.9% and lowest among women currently in marriage at 18.5%. Even for Islam and other religions formerly married women had highest HIV/AIDS prevalence whereas currently married women had lowest.

Prevalence of HIV/AIDS was lowest among women aged 15-24 years for all the three marital categories i.e. 21.7% for never married, 14.4% currently married and 30% formerly married. This is relative to 42.3% for never married, 22.2% for currently married and 53.4% for formerly married women respectively among women aged 25-34 years. HIV/AIDS prevalence among women aged 35-49 years consistently remained second lowest in all the three marital categories to that of age group 15-24 years. Among women residing in urban areas currently married women had 19.9%, never married women 24.7% and formerly married women 50%. Among women residing in rural areas formerly married remained the group of high risk of HIV/AIDS infection, whereas currently married women had lowest risk.

Among women reporting condom use formerly married women had highest HIV/AIDS prevalence of 41.4%, followed by never married women 26%. Currently married women had lowest prevalence of 16%. For women reporting condom use formerly married women still had highest HIV/AIDS prevalence, whereas currently married women maintaining lowest HIV/AIDS prevalence.

Prevalence of HIV/AIDS among currently married women reporting husband with no STIs did not vary so much from that of women reporting husband having STI. Currently married women reporting husband with no STI's HIV/AIDS prevalence was at 17.6% compared to 18.5% for women reporting husband with STI. When assessing risky of HIV/AIDS infection between sexually exclusive and none sexually exclusive women, findings were that the former had lower risk of HIV/AIDS infection. Currently married women had lowest HIV/AIDS prevalence among both sexually exclusive and none sexual exclusive women, 16.8% and 19.4% respectively. Highest HIV/AIDS infections were among formerly married women 34.8% and 51.6% respectively as well.

4.2 Table 5. Prevalence of HIV/AIDS by marital status

		Marital Status		
Characteristics	% of Respondents by characteristic	Never married % HIV positive	Currently married % HIV positive	Formerly married % HIV positive
Wealth status				
Poor	47.98	28.1	16.9	37.3
Medium	18.26	30.2	17.2	57.5
Rich	33.76	26.7	21.0	49.6
Educational level				
No primary	36.26	29.2	15.5	44.4
≥ primary < completed secondary	61.00	28	20.2	47.4
Completed secondary &above	2.74	20	13	6.16
Religion				
Traditional	4.13	25	21.7	33.3
Christianity	95.07	32.9	18.5	45.5
Islam and others	0.80	50	14.8	0
Age				
15-24 years	38.62	21.7	14.4	30
25-34 years	45.60	42.3	22.2	53.4
35-49 years	15.78	27.7	15.4	50
Place of residence				
Urban	25.54	24.7	19.9	50
Rural	74.46	29.5	17.8	43.6
Condom use				
No	45.54	26	16	41.4
Yes	54.46	30	20	47.1
Husband has STI				
No	19.58	-	17.6	-
Yes	80.42	-	18.5	-
Sexual exclusivity				
No	55.26	28.6	19.4	51.6
yes	44.74	27.4	16.8	34.8
Total		28.1	18.02	45

Shaded areas= lowest HIV/AIDS prevalence category.

4.3 Profile of Respondents: Coresidence

The study further estimated the prevalence of HIV/AIDS infection of women according to their coresidence status. Overall HIV/AIDS prevalence by women's coresidence was 18% for coresiding women and 19.14% for non coresiding women.

HIV/AIDS prevalence by women's wealth status suggests that poor women coresiding had lower HIV/AIDS prevalence than poor women not coresiding. Among the other categories of wealth status i.e. medium and rich women, coresiding women still remained the group of lower risk of HIV/AIDS infection. Within the characteristic of educational level, findings still suggest that coresidence is more protective against HIV/AIDS infection compared to non coresidence. Coresiding women with; no primary education, primary to less completed secondary education and those with complete secondary and above had 14.15%, 20.67% and 13.64% HIV/AIDS prevalence respectively. This is compared to non coresiding women with 20.26%, 18.92% and 11.52% respectively. Women believing in traditional religion and were coresiding had HIV/AIDS prevalence of 8.9%, but there was no record for non coresiding women. Christian coresiding women had a prevalence rate of 18.16% relative to 19.63% for non coresiding women. There was not much difference in prevalence of HIV/AIDS between coresiding and none coresiding women believing in Islam and other religions, i.e.15% and 14.29% respectively.

Among women in age groups 15-24 and 35-49 years prevalence of HIV/AIDS is lower among women coresiding than among women not coresiding. Whereas women coresiding and aged 25-34 years had higher HIV/AIDS prevalence compared to those not coresiding 22.51% and 21.24% respectively. Urban women coresiding had higher HIV/AIDS prevalence of 20.4% than urban women not coresiding's 17.29%. This contradicted results from women in rural areas. Rural women coresiding have lower prevalence of HIV/AIDS of 17% than their counterparts not coresiding's 19.7%.

As for women reporting no condom use, coresiding women had higher prevalence of HIV/AIDS infection i.e. 16.67% compared to non coresiding women with 14.24%. However, among women reporting condom use, coresiding women had lower HIV/AIDS prevalence of 19.04% compared to non coresiding women who had 23%. Among women whose partners reported no STI infection, coresiding women had lower risk of HIV/AIDS infections i.e. 16.01% compared to non co residing women's 23.81%. However, coresiding women whose husbands had reported STI had slightly higher HIV/AIDS infection of 18.59% than non coresiding women's 18.18%. Women coresiding and had many sexual partners had HIV/AIDS prevalence of 18.84% compared to 20.98% for women not coresiding. Coresiding women who were sexually exclusive had HIV/AIDS prevalence of 16.93% compared to 16.62% for their non coresiding counterparts.

4.4 Table 6. Prevalence of HIV/AIDS by coresidence

Characteristics	% of respondents by characteristic	Coresidence % HIV positive	Non Coresidence % HIV positive
Wealth Status			
Poor	47.98	16.4	19.21
Medium	18.26	17.24	17.87
Rich	33.76	21.03	21.27
Educational Level			
No primary	36.26	14.15	20.26
≥ primary < completed secondary	61.00	20.67	18.92
Completed secondary &above	2.74	13.64	11.54
Religion			
Traditional	4.13	8.9	0
Christianity	95.07	18.16	19.63
Islam and others	0.80	15	14.29
Age			
15-24 years	38.62	13.87	15.85
25-34 years	45.60	22.51	21.24
35-49 years	15.78	13.53	20.97
Place of Residence			
Urban	25.54	20.36	17.29
Rural	74.46	17.13	19.44
Condom Use			
No	45.54	16.67	14.24
Yes	54.46	19.04	23
Husband has STI			
No	19.58	16.01	23.81
Yes	80.42	18.59	18.18
Sexual exclusivity			
No	55.26	18.84	20.98
yes	44.74	16.93	16.62
Total		17.99	19.14

Shaded areas= lowest HIV/AIDS prevalence category.

CHAPTER 5:

5.1 Bivariate analysis

This analysis tested for the association between each variable identified for the study and HIV/AIDS status and produced unadjusted odds ratio (UOR) in Table 6.

Marital status

The odds of being HIV infected among currently married women are 43% less when compared to never married women. The association between being currently married and HIV/AIDS status is highly significant with a p-value 0.000 and confidence interval (CI) of 0.45-0.73. The likelihood of being HIV/AIDS infected among formerly married women is 109% relative to never married women, and the association between being formerly married and HIV/AIDS status is also very significant with p-value 0.000, CI 1.55-2.83.

Coresidence

The association between women who are not co residing and HIV/AIDS status is insignificant, p value 0.426, CI 0.89-1.30. The odds of having HIV/AIDS infection are 8% higher for women who are not coresiding compared to women coresiding.

Wealth Status

Women, who are in the medium 20 percentile, are 20% more likely to be HIV/AIDS infected relative to women in the bottom 40% percentile. The relationship between women in 20 percentile medium and HIV/AIDS status is not significant, p-value 0.067 and CI 0.99-1.45. The odds of being HIV/AIDS infected among women in the top 40 percentile are 30% higher compared to women from the bottom 40 percentile. Rich women (top 40% percentile) are significantly associated with being HIV positive, p-value 0.001, CI 1.11-1.53.

Education Level

There is a significant association between women who have obtained between primary education and up to incomplete secondary education and being HIV/AIDS status, p-value 0.003, CI 1.08-1.46. These women have 26% higher odds of being HIV/AIDS infected relative to women who have achieved no primary education. Women who have achieved secondary education and above have 33% less odds of having HIV/AIDS infection than least educated women. The association between being highly educated and HIV/AIDS status among women is insignificant, p-value 0.165, CI 039-1.18.

Religion

Christian women have almost 3 times (144%) higher likelihood of having HIV/AIDS infection than women believing in Traditional religion. This association between being a Christian and HIV/AID status among women is highly significant, p-value 0.000 and CI 1.49-4.00. Women who believe in Islam and Other religions have 78% higher odds of having HIV/AIDS infection than

women who believe in Traditional religion. The association between believe in Islam and Other religions and HIV/AIDS infection is not significant, p-value 0.306, CI 0.61-5.15.

Age

Women's age groups of 25-34 years and 35-49 years are significantly associated with HIV/AIDS status p-value 0.000, CI 1.51-2.07 and p-value 0.032, CI 1.02-1.60 respectively. Women aged 25-34 years have 77% higher odds of being HIV/AIDS infected compared to adolescent women (15-24 years). The likelihood of being HIV/AIDS infected among elderly women i.e.35-49 years is 27% higher compared to the adolescent group.

Place of residence

Staying in the rural areas had no significant association with HIV/AIDS status among women, p-value 0.265, CI 0.77-1.07. The odds of HIV/AIDS infection for rural women were 9% lower relative to urban women.

Condom use

Women who reported condom use have 35% higher odds of being HIV positive than women reporting no condom use, and the association between condom use and HIV/AIDS status is highly significant p-value 0.000, CI 1.16-1.55. However interpretation of this finding need to be treated with care, because what matters most is reporting consistent condom rather than mere reporting condom use in the past which could have been irregular.

Husband has STI

Women who reported husbands infected with STI had higher odds of HIV/AIDS infection of 5% relative to women whose husbands had no STIs. The association between women whose husbands had STI and HIV/AIDS status is not significant, p-value 0.578 CI was 0.88-1.27.

Sexual exclusivity

There is a highly significant association between women having one sexual partner and HIV/AIDS status, p-value 0.000, CI 0.67-0.89. Women who reported one sexual partner had 30% less odds of being infected with HIV/AIDS virus than women who had many sexual partners.

5.2 Table 7**.** Bivariate analysis results table

CHARECTERISTICS		
	UOR	Confidence Interval
Marital Status		
Never married	RC	
Currently married	0.57	0.45 - 0.73***
Formerly married	2.09	1.55 - 2.83***
Wealth Status		
Poor	RC	
Medium	1.20	0.99-1.45
Rich	1.30	1.11-1.53**
Education Level		
No primary	RC	
≥primary<completed secondary	1.26	1.08-1.46**
completed secondary & above	0.67	0.39-1.18
Religion		
Traditional religion	RC	
Christianity	2.44	1.49-4.00***
Islam and Others	1.76	0.61-5.15
Age		
15-24 years	RC	
25-34 years	1.77	1.51-2.07***
35-49 years	1.27	1.02-1.60*
Place of residence		
Urban	RC	
Rural	0.91	0.77-1.07
Condom use		
No	RC	
Yes	1.35	1.16-1.55***
Husband has STI		
No	RC	
Yes	1.05	0.88-1.27
Sexual exclusivity		
No	RC	
Yes	0.77	0.67-0.89***
Coresidence		
Yes	RC	
No	1.08	0.89-1.30

P<0.001***, p-value<0.010**, p-value<0.050* CI=Confidence Interval, Shaded areas= lowest HIV/AIDS prevalence category.

CHAPTER 6

6.1 Multivariate analysis: Marital status

Models 1-4 analysed the association between marital status and HIV/AIDS status, controlling for various factors (Table 7). Models 5-8 analysed the association between coresidence and HIV/AIDS status, controlling for same factors as in models1-4 (Table 8).

6.1.1 Model 1

This model controlled for all explanatory factors considered for this study except coresidence which was highly correlated with marital status.

Marital Status
The odds of having HIV/AIDS among currently married women was 45% less compared to never married women, and the association between being currently married and HIV/AIDS status was very significant with p-value 0.000, CI 0.42-0.72. The odds of having HIV/AIDS among formerly married women were more than double, i.e. 102% relative to never married women. The association between being formerly married women and HIV status was also highly significant, p-value 0.000, CI 1.44-2.82.

Other characteristic
Among other explanatory characteristics, the odds of having HIV/AIDS infection were 69% greater for women classified rich than their counterparts' classified poor, and the association between being rich and HIV/AIDS status among women was significant. Women classified as of medium wealth status had 10% odds of being HIV/AIDS infected relative to poor women, but their association with HIV/AIDS status was insignificant. When analysing the effect of education level, woman with secondary and above education had 46% less odds of being HIV/AIDS infected than women with no primary education. The association between high education status and HIV/AIDS status is significant. As for religion, Christian women had almost double odds of being HIV/AIDS infected (99%) relative to women believing in Traditional religion, and this association was highly significant. Islam and other religions had 73% greater odds of having HIV/AIDS infection than Traditional religion, but the association was insignificant.

Odds for having HIV/AIDS infection were 94.8% and 47% greater for women aged 25-34 and 35-49 years respectively relative to women aged 15-24 years. The associations for both groups of women aged 25-34 and 35-49 years and HIV/AIDS status were highly significant with p-values of 0.000 and 0.003 respectively. The findings show that risk of HIV/AIDS infection increased with age to 34 years and gradually declined after 35 years. An analysis of place of residence suggested that the association between rural women and HIV/AIDS status is significant p-value 0.019. The odds of having HIV/AIDS infection were 40% more for rural women than for urban women.

Odds of having HIV/AIDS infection are greater by 30% for women who use condoms than women reporting no condom use. The association between women reporting condom use and HIV/AIDS status is highly significant, p-value 0.002. Odds for HIV/AIDS infection among women reporting husbands with STI are 4% lower than for women reporting Husbands with no STI infection. The association between women whose husband were infected with STI and HIV/AIDS status is highly insignificant with p-value 0.699. Women with one sexual partner are significantly associated with lower HIV/AIDS infection when compared to. They have 28% lower odds of HIV/AIDS infection than women reporting many sexual partners.

6.1.2 Model 2: Controlling for socioeconomic factors

When controlling for socioeconomic factors, the odds of currently married women getting HIV/AIDS infection were 35% lower than for never married women. Formerly married women had 144% higher odds of HIV/AIDS infection compared to never married women. Being either currently or formerly married among these women is significantly associated with HIV/AIDS status as suggested by p-value of 0.000, CI 0.50-0.84 and p-value 0.000 with CI 1.77-3.37 respectively.

6.1.3 Model 3: Controlling for demographic factors

Holding demographic factors constant, the likelihood of currently married women getting HIV/AIDS infection was 50% less, and for formerly married women was 86% higher both relative to never married women. Associations between being currently married as well as being formerly married and HIV/AIDS status were significant at p-value 0.000, CI 0.39-0.63 and p-value 0.000, CI 1.37-2.52.

6.1.4 Model 4: Controlling for sex risk behaviour factors

When holding constant sex risk behaviour factors, being either currently married or formerly married among women remained significantly associated with HIV/AIDS status as suggested by p-value 0.000, CI 0.45-0.73 and p-value 0.000, CI 1.51-2.78 respectively. The likelihood of currently married women getting HIV/AIDS infection was 42% lower than for never married women, while for formerly married women the likelihood was 105% higher.

6.1.5 Table 8. Multivariate analysis models' results table for marital status

CHARECTERISTICS	Model 1		Model 2		Model 3		Model 4	
	AOR	CI	AOR	CI	AOR	CI	AOR	CI
Marital Status								
Never married	RC		RC		RC		RC	
Currently married	0.55	0.42-0.72***	0.65	0.50-0.84***	0.50	0.39-0.63***	0.58	0.45-0.73***
Formerly married	2.02	1.44-2.82***	2.44	1.77-3.37***	1.86	1.37-2.52***	2.05	1.51-2.78***
Wealth Status								
Poor	RC		RC					
Medium	1.10	0.89-1.37	1.11	0.89-1.38	-	-	-	-
Rich	1.69	1.29-2.22***	1.30	1.08-1.56***				
Education Level								
No primary	RC		RC					
≥primary<completed secondary	1.21	1.01-1.46	1.17	0.98-1.41	-	-	-	-
completed secondary & above	0.54	0.30-0.97*	0.58	0.33-1.06*				
Religion								
Traditional religion	RC		RC					
Christianity	1.99	1.19-3.34**	2.06	1.24-3.41**	-	-	-	-
Islam and Others	1.73	0.58-5.21	1.60	0.33-4.78				
Age								
15-24 years	RC				RC			
25-34 years	1.95	1.63-2.34***	-	-	1.88	1.60-2.31***	-	-
35-49 years	1.47	1.14-1.89**			1.27	1.01-1.61*		
Place of residence								
Urban	RC		-	-	RC		-	-
Rural	1.40	1.06-1.86*			0.90	0.76-1.07		
Condom use								
No	RC		-	-	-	-	RC	
Yes	1.30	1.11-1.54**					1.29	1.11-1.50**
Husband has STI								
No	RC		-	-	-	-	RC	
Yes	0.96	0.78-1.18					1.06	0.88-1.29
Sexual exclusivity								
No							RC	
Yes	0.72	0.16-0.85***	-	-	-	-	0.78	0.67-0.90**

p<0.001***, p<0.01**, p<0.05*, CI=Confidence Interval, Shaded areas= lowest HIV/AIDS prevalence category.

6.2 Multivariate analysis: Coresidence

6.2.1 Model 5: Controlling for Other factors

Coresidence
When holding constant all other factors, the association between not coresiding and HIV/AIDS status was highly insignificant with p-value 0.337 and CI 0.90-1.36. Women not coresiding have 10% higher likelihood of being HIV/AIDS infected compared to coresiding women.

Other Characteristics
Women whose wealth status is classified as medium had OR of 0.91. Their association with HIV/AIDS status was not significant. This suggested that when compared to women of poor wealth status, medium women had 9% lower odds of being HIV/AIDS infected than poor women. However the odds of HIV/AIDS infection were 65% higher for rich women when compared to poor women. The association between women categorised as rich and HIV/AIDS status was significant. Women with primary to incomplete secondary education had OR of 1.31. The association between these women and HIV/AIDS status is significant. Women with Secondary and above education recorded OR of 0.63 and had a non significant association with HIV/AIDS status. The odds are 37% lower for these highly educated women to be HIV/AIDS infected compared to women with no primary education. Pertaining to religious affiliations, Christian had higher odds of 107% of having HIV/AIDS infection compared to women affiliated to Traditional religion. Women who belong to Islam and Other religions had an insignificant association with HIV/AIDS status but higher odds of 72% of being HIV/AIDS infected compared to women who belong to Traditional religion.

Women whose ages are categorised 25-34 years and 35-49 years had significant associations with HIV/AIDS infections p-values 0.000 and 0.045 respectively. Odds were 75% higher for women aged 25-34 to be HIV/AIDS infected relative to women aged 15-24 years. Whereas, women aged 35-49 years also had higher odds of being HIV/AIDS infected of 36% compared to never married women. Women reporting condom use had a significant association with HIV/AIDS status, with a p-value of 0.004. Women reporting condom use had 30% higher odds of being HIV/AIDS infected than women not using condoms. Women reporting husband with STI had 7% less odds of being HIV/AIDS infected than women whose husband did not have STI. Women reporting one sexual partner had 25% less likelihood of being HIV/AIDS infected compared to women who have many sexual partners and the association with HIV/AIDS status was highly significant.

6.2.2 Model 6: Controlling for socioeconomic factors

An analysis of the association between coresidence and HIV/AIDS status controlling for socioeconomic factors suggested that non coresiding women had 13% higher odds of being HV/AIDS infected than coresiding women. The association between not coresiding and HIV/AIDS status is insignificant with p-value 0.225 and CI 0.93-1.39.

6.2.3 Model 7: Controlling for demographic factors

When controlling for demographic factors, the association between women not coresiding and HIV/AIDS status remained insignificant with p-value 0.293, CI 0.921.34. Women not coresiding had 11% higher odds of being HIV/AIDS infected than for women coresiding.

6.2.4 Model 8: Controlling for sex risk behaviour factors

In controlling for sex risk behaviour factors, the findings maintained an insignificant association between non coresiding women and HIV/AIDS status, p-value 0.575, CI 0.84-1.28.The odds of being HIV/AIDS infected among women not co residing was 6% higher than for women coresiding.

6.2.5 Table 9. Multivariate analysis models' results for coresidence

CHARECTERISTICS	MODEL 5		MODEL 6		MODEL 7		MODEL 8	
	AOR	CI	AOR	CI	AOR	CI	AOR	CI
Coresidence								
Yes	RC		RC		RC		RC	
No	1.11	0.90-1.36	1.13	0.70-1.39	1.11	0.92-1.34	1.06	0.87-1.28
Wealth status								
Poor	RC		RC					
Medium	0.91	0.70-1.19	0.91	0.70-1.18	-	-	-	-
Rich	1.65	1.22-2.23**	1.30	1.05-1.61*				
Education level								
No primary	RC		RC					
≥primary<completed secondary	1.31	1.06-1.63*	1.24	1.01-1.54*	-	-	-	-
Completed secondary & above	0.63	0.33-1.22	0.65	0.34-1.24				
Religion								
Traditional	RC							
Christianity	2.07	1.15-3.73*	2.18	1.22-3.91**	-	-	-	-
Islam & Others	1.72	0.50-5.82	1.65	0.49-5.56				
Age								
15-24 years	RC				RC			
25-34 years	1.75	1.42-2.15***	-	-	1.69	1.40-2.05***	-	-
35-49 years	1.36	1.01-1.82*			1.09	0.83-1.43		
Place of residence								
Urban	RC		-	-	RC		-	-
Rural	1.38	1.08-1.57			0.88	0.72-1.06		
Condom use								
No	RC		-	-	-	-	RC	
Yes	1.30	0.90-1.36**					1.30	1.10-1.55**
Husband has STI?								
No	RC		-	-	-	-	RC	
Yes	0.93	0.74-1.17					1.07	0.86-1.32
Sexual exclusivity								
No	RC		-	-	-	-	RC	
Yes	0.75	0.62-0.90**					0.82	0.70-0.98*

p<0.001***, p<0.010**, p<0.050*, CI=Confidence Interval, Shaded areas= lowest HIV/AIDS prevalence category.

CHAPTER 7

7.1 Discussion

The purpose of this study was to examine if marriage could be a viable prescript for reducing HIV/AIDS infection, in a population where heterosexual intercourse complemented by MCPs practice is the main mode of transmission. To examine this, the study estimated HIV/AIDS prevalence among women's three marital categories of never married, currently married and formerly married women using Zimbabwe Demographic Survey data of 2005-06. The study further examined HIV/AIDS prevalence among women who are coresiding compared to those who are not. The study argues that; low HIV/AIDS prevalence among currently married women compared to never married and formerly married women, as well as lower HIV/AIDS prevalence among coresiding women compared to women not coresiding suggests the viability of marriage as a behavioral strategy in reducing HIV/AIDS infection among Zimbabwean women.

Both bivariate and multivariate analyses findings suggest that there is a highly significant association between marital status and HIV/AIDS status. The few related studies done in SSA concur with such findings. Among the three marital categories, currently married women in Zimbabwe were strongly associated with low HIV/AIDS infection compared to either of the two categories of women not in marriage. This is a major departure from findings obtained from the few studies referred above. Such studies had mainly suggested lower HIV/AIDS infections among never married women. Possible explanations behind such findings could be gender inequality in favor of men and poverty within the SSA, which are likely to increase the exposure of currently married women to HIV/AIDS infection more than women out of marriage (Mhaka, 2010). Being in marriage in such a society might result in women often being economically impoverished and dependent on men as they are mainly expected to be confined at home to perform reproductive rather than productive work. Men in turn might be sexually abusive as they wield more power because women are mainly economically dependent on them. Married women might be forced into sex risk behaviors like MCPs practice most likely for financial gain or seeking comfort from perceived abusive relationships.

This study's findings however, confirm earlier findings from a study in South Africa by Shisana et al (2004). These two studies seem to suggest a possibility of sub regional differences in HIV/AIDS prevalence according to marital status in SSA. Notably, studies that have suggested high HIV/AIDS prevalence among currently married women relative to never married are predominantly from West Africa. Yet this study and the one done by Shisana et al (2004) are for countries in Southern Africa. The contradiction could partly be a result of sub regional differences in terms of the extent to which gender inequality is prevalent, as well as impact of poverty on women. It is possible to suggest that, in countries where gender inequality is more pronounced, aided by high poverty prevalence, HIV/AIDS prevalence is likely to be higher

among currently married women relative to never married. It is likely that high prevalence of gender inequality and poverty in a society is more likely to increase risk of HIV/AIDS infection among women currently married (Hattori et al, 2006).

From the four multivariate regressions analysis models run controlling for various factors, the relationship between marital status and HIV/AIDS infection remained undistorted by maintaining a highly significant p-value<0.000. Only some small adjustments in the odds of having HIV/AIDS infection among currently married and formerly married women relative to never married women were noted when control factors were introduced. This suggests that socioeconomic, demographic and sex risk behaviour characteristics used in this study to analyze the association between marital status and HIV/AIDS did not have a significant confounding effect. These characteristics rather acted as intervening factors in the analyses of the association of interest in this study.

The relationship between coresidence and HIV/ADIDS status was insignificant both at Bivariate and multivariate analysis levels. However, interpretations of odds ratios suggested that women coresiding had slightly lower HIV/AIDS prevalence than women not coresiding. Such findings comply with suggestion raised by some researchers that coresidence improves spousal monitoring, thereby reducing risk behaviour practices among partners. Furthermore, this indirectly confirms viability of marriage in reducing HIV/AIDS among women studied. For coresiding women are more reflective of the essence of a really marriage set up, where partners live together. Yet non co residing women partly embodies the life set up likely similar to women not in marriage, by living separately from partner.

The “small house” phenomenon in Zimbabwe is likely to have escalated HIV/AIDS infections among women in marriages, through their partners. However, despite this possibility, findings from this study could not confirm the role played by the small house practice in fuelling HIV/AIDS transmission, as the 2005-06 ZDHS data did not record information on this practice. Moreover, it can be argued that, the possible effect of this practice in escalating HIV/AIDS infections in marriages was indirectly weakened by the fact that findings from the study suggested low HIV/AIDS prevalence among married Zimbabwean women. Effects of small house practice on HIV infection is therefore an area that warrants more robust research as more of what is known has been based on hearsay.

In further compressing the study together certain complexities could be identified. The study’s overall finding suggested formerly married women to be the category of highest risk of HIV/AIDS infection, followed by never married. However there was a major discrepancy when analyzing HIV/AIDS prevalence by educational level attained by women; formerly married women who acquired highest education had lowest HIV/AIDS prevalence of 6.16%, relative to their counterparts who are currently married 13%, never married 20%. This suggests that

attaining completed secondary and above education, and being formerly married reduces risk of HIV/AIDS infection among Zimbabwean women. Maybe this is a result of positive combination of high education obtained and experiences of how to deal with men in sexual matters likely acquired by formerly married women through time.

The results obtained for condom use also presented some complexities. Both cross tabulation and logistic regression results suggest high HIV/AIDS prevalence among women using condoms relative to those not using condoms, a finding similar to one by Shisana et al (2004). Such a finding greatly contradicts suggestion from most research as well as common sense. This could be a result of high proportions of people who were aware of their HIV/AIDS status and now adopted condom use to avoid re infections; hence they reported condom use in their last sexual encounters (Shisana et al, 2004).

The findings from coresidence also had some inconsistencies. Coresiding urban women had higher HIV/AIDS prevalence compared to non coresiding urban women. Whereas rural co residing women had lower HIV/AIDS prevalence compared to rural non coresiding women. Possibly urban poverty is pushing coresiding women into MCPs practice, as Zimbabwe has been going through an economic crunch since the late 1990s. Non coresidence urban women are possibly better taken care off financially by partners who have migrated elsewhere most likely in pursuit of greener pastures. The role of remittances in sustaining the general welfare of the majority of Zimbabweans since the late 1990s is an issue beyond the scope of this study, but cannot be underestimated. Individuals who received remittances from relatives abroad are more likely to have enjoyed better living standards than those entirely dependent on local based bread winners especially during this period of economic slump in Zimbabwe.

CHAPTER 8

8.1 Conclusion and recommendations

8.1.1 Conclusion

This study found that marital status substantially determines Zimbabwean women's risk of HIV/AIDS infection. Evidence from the study greatly suggests high risk of HIV/AIDS infection among women not in marriage relative to those currently in marriage. Formerly married women are the group of highest risk followed by never married women.

. Lowest HIV/AIDS prevalence among women married women is possibly a result of high sexual exclusivity. However, high sexual exclusivity among married Zimbabwean women might be ineffective in reducing HIV/AIDS infections in case of partners who have extra marital affairs, a practice highly prevalent in especially among Zimbabwean men. Higher prevalence of consistent condom use by Zimbabwean men in their extra marital affairs could therefore be complementing the practice of sexual exclusivity among married women in reducing HIV/AIDS infections among currently married women.

. Coresidence is more protective against HIV/AIDS infections compared to non coresidence. However, evidence from the study suggested very little differences in HIV/AIDS prevalence between coresiding and non coresiding women.

. Factors in this study that have been found to be associated with lower HIV/AIDS prevalence among women in Zimbabwe include: acquiring highest education, sexual exclusivity, and young age (15-24 years). Factors strongly associated with high HIV/AIDS prevalence among Zimbabwean women are: having many sexual partners, being rich and older age (25-49years).

8.1.2 Recommendations

. The study recommends policy makers to promote the traditional perception of marriage in Zimbabwe as a scared institution. This way marriage might turn out to be a possible and highly effective behavioral measure in the fight against HIV/AIDS in Zimbabwe and maybe elsewhere around the globe. The fact that lowest HIV/AIDS prevalence among women was estimated to be among currently married women in this study could be used as a motivation to preserve marriage as a scared, respected and an attractive institution.

. Moreover, if marriage is to work effectively as a custodian against HIV/AIDS infections, this study recommends decision makers and the public in general to target on reducing child and adolescent HIV/AIDS infection. This will possibly reduce the number of individuals who later enter into marriage already HIV/AIDS infected.

. Thirdly, it is crucial for policy makers and the public to be informed of the differences in HIV/AIDS prevalence like according to sex, marital status, and socioeconomic status, to mention some, for proper strategizing purposes. Based on findings from this study, programs to reduce HIV/AIDS infection among Zimbabwean women need to be separately identified for each

marital category. Factors exposing women to risk of HIV/AIDS infection largely vary with marital status.

. The study also recommends promotion of practices that empower women to independently fight this scourge. Of importance here as found from the study could be the promotion of women empowerment through achieving higher education. Zimbabwe has a good platform by having the highest literacy rate in Africa from which policy makers can take advantage of, towards achieving this goal.

. Any efforts to be implemented to control HIV/AIDS transmission among women should also include their male counterparts, since evidence points towards heterosexual intercourse as the principal mode of transmission. Through heterosexual intercourse HIV/AIDS transmissions are a shared responsibility, as the infection of either one of the sexual partners would most likely result in the eventual infection of the other.

. Coresidence also needs to be encouraged as to some extent it increases spousal monitoring thereby reducing risk behaviors among sexual partners.

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