

Intimate Partner Violence and the HIV Status of Women in Zambia

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Declaration

I, Lebo Thwala, declare that this research report is my own work. It is being submitted to the School of Social Sciences, Faculty of Humanities, University of Witwatersrand, Johannesburg. It is being submitted for the Master of Arts degree in Demography and Population Studies. I declare that to the best of my knowledge, the research has not been submitted before for any other degree or examination in any other university.

Lebo Thwala



14/07/2014

Dedication

I dedicate this research to my parents; Fridah and Gilbert Thwala who have inspired me to complete this research. Their motivation and encouragement has always propelled me to go beyond my limits to achieve whatever goal I set for myself.

Acknowledgments

Glory to Him, Whom in all things was created and all things consist. Thank you my Lord Jesus for everything that I am in You!

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Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
CSO	Central Statistical Office
HIV	Human Immunodeficiency Virus
NAC	National Aids Council
STI	Sexually Transmitted Infection
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNIFEM	United Nations Fund for Women
ZDHS	Zambian Demographic and Health Survey

Abstract

Background: The HIV/AIDS pandemic has largely affected women in Africa. Apart from the physiological susceptibility to HIV infection, factors such as intimate partner violence (IPV) are considered to heighten the risk of infection for women. In 2009, sixty percent of all new infections were contracted within married unions in Zambia. HIV prevalence rates for women continue to remain high in Zambia while IPV is a rampant social problem in this society. Thus, this study examines the relationship between intimate partner violence and HIV status of currently married women in Zambia.

Methods: The study used the 2007 Zambian Demographic and Health Survey data to achieve the objectives of the study. The study included a sample of 2 895 currently married women aged 15-49 who participated in the domestic violence module and the HIV test. The main independent variable of the study was IPV and covariates included: age of respondent, age at sexual debut, religion, highest education level, household wealth index, place of residence, the country's provinces, partners age and partners education. The dependent variable of the study was HIV status. Data analysis was conducted in three stages. Firstly, a univariate analysis was conducted to show the prevalence's of HIV and IPV. A bivariate analysis was also conducted; which illustrate the distribution of the population's characteristics by the dependent variable. Secondly, Binomial Logistic regression was used to examine the relationships between each of the independent variables and dependent variable. Thirdly, Multivariate Logistic Regression was used to examine the relationship between IPV and HIV status while controlling for selected covariates.

Results: HIV prevalence of 14 percent was found among currently married women while 43 percent of the women experienced violence from an intimate partner. It was found that women who experienced both physical and sexual violence were more likely to be HIV positive. The more educated and affluent the women were; the more likely they were to be HIV positive. Age of the respondent and partner's age were also found to have significant relationships with the HIV status of women.

Conclusion In Zambia, there was a relationship found between IPV and the HIV status of currently married women. The sustained high prevalence of IPV and HIV amongst women in Zambia is of social and public health concern and should be addressed if the country wants to effectively reduce the infection rate of women.

Keywords; intimate partner violence, HIV, currently married women

Chapter 1: Introduction

1.1 Background

The HIV infection and its subsequent AIDS disease have predominantly affected women over the last few decades (Quinn et.al, 2005). The HIV/AIDS pandemic has predominantly affected more women than men because of their susceptibility to the disease. A woman's biological susceptibility is a consequence of the vaginal microbial ecology and its physiology. A woman's genital area has a larger surface area where the HIV pathogen collects to ultimately infect the women. In addition, the risk of infection has been associated to hormonal changes and sexually transmitted diseases (Quinn et.al, 2005). Furthermore, demographic factors often become either a preventative or risk factors for HIV infection of women. Such factors include age, education and wealth status of women in many societies, depending on the level of the factors mentioned, maybe a preventative or risk factor for HIV infection (UNAIDS, 2010). The infection rate of women has persistently remained high and has increasingly become a public health and social issue which societies have been trying to remedy. In the effort to contain the high infection rate of women, factors like intimate partner violence (IPV) continue to place woman in vulnerable positions which may increase the risk of HIV infection as Ackermann et al (2010) notes.

The HIV/AIDS pandemic has affected many countries around the world, in particular the countries of sub-Saharan Africa (Quinn et.al, 2005). It was estimated that 1.8 million people died in 2009 compared to 2.1 million deaths in 2001. While there has been a significant gain in preventing thousands of deaths through antiretroviral treatment; mortality rates due to the disease are quite substantial in Africa. Out of the 1.8 million people who died of HIV related illnesses in 2009, 72 percent of those deaths were in Africa (UNAIDS, 2010). Although Southern Africa was burdened by 68 percent of the global share of the HIV/AIDS pandemic, there was reduction in the incidence cases reported. Out of the 33 countries that reported a 25 percent decrease in the incidence rate, 25 of those countries were in sub-Saharan Africa (UNAIDS, 2010).

Albeit there has been a decrease in the incidence rates; women are still at a higher risk of HIV infection than men are, especially in sub-Saharan Africa (Moon, 2007). According to the UNAIDS report, it was estimated that of the 11.3 million people who were living with HIV,

over 50 percent of those people were women. The exposure of girls and women to HIV is particularly high in sub-Saharan Africa; with almost 80 percent of all women living with HIV residing in Africa. Furthermore, it was estimated that the prevalence of HIV was at a rate of 13 women for every 10 infected men in Southern Africa while in West and East Africa this stood at 1.22:1 women for every 1 man (UNAIDS, 2010). Although the infection rates in the African regions are different; the risk of infection for African women emanates primarily from heterosexual relationships. The most vulnerable women at risk of infection are between the ages of 15 and 24. The infection rates for women between the ages of 20 and 24 are considered to be the highest.

Intimate partner violence (IPV) is internationally recognized as one of the worst human rights violation perpetrated towards an individual (UNIFEM, 2003). Intimate partner violence can be described as the behaviours, of an individual, in an intimate relationship that causes physical, psychological or sexual harm towards the partner. Such behaviour includes physical aggression, psychological violence, controlling acts and sexual violence (Feder et al, 2012). Intimate partner violence is considered to be the most pervasive form of violence against women, as it is an action that subordinates women under the control of their partner (Ghosh et al, 2012). Although there is some evidence that men are increasingly becoming victims of IPV, but substantially more women are victims of violence from their partners which has associated negative health and reproductive outcomes.

The prevalence of intimate partner violence is considered high in most countries around world and this is no different for African countries as Borwankar et al, 2008 notes. It was estimated that the prevalence of physical violence was at 20 percent in Malawi; 30 percent in Rwanda and Zimbabwe; near 40 percent in Kenya and Cameroon; and around 50 percent in Uganda (Borwankar, et al. 2008). Levels of sexual violence were reported to have been between 13 and 16 percent in Cameroon, Malawi, Rwanda and Zambia; 20 percent in Zimbabwe and over 30 percent in Uganda. In a Tanzanian study, it was estimated that between 16 and 17 percent of women experienced various forms of violence while only 1 percent experienced sexual violence from their partners (McCloskey, et al. 2005).

Gender inequality that exists in African societies reinforce the norm of violence in intimate relationships; some women going as far as to justify acts of violence in relationships (Klomegah, 2008). Women in violent relationships do not often recognize the full extent of the violence and in many cases do not relate the violence as a violent act perpetrated by a

man towards a woman, but rather the natural order of a relationship where the man has to be in a position of control (Ghosh et al 2005). Women who experience any form of violence from their partners will ultimately have no control over their social life, relationship with the partner, reproductive choices and inherently its health outcomes.

1.2 Problem statement

Zambia has been prominently affected by the HIV/AIDS pandemic over recent years with women primarily affected (UNGASS 2011). The prevalence of HIV amongst women has remained stagnant at 16 percent and has not demonstrated any significant decline between the years 2001 and 2007. It was estimated that the HIV prevalence for women between the ages of 15-49 was at 15 and 13 percent, respectively, while the number of women living with HIV increased from 47 000 to 56 000 between the two years (UNGASS 2011). Furthermore, it was estimated that women were 1.4 times more likely to be infected with HIV compared to men (NAC, 2004). Glynn et al (2001) estimated that the prevalence of HIV among women aged 15-19 was six times to that of men in the same age group while it was 3 times, for the age group 20-24. Prevalence rates in the country were highest among women aged 25-34 while the prevalence in the older age group of 35-49 were lower than that of the males in the same age group (NAC, 2004).

According to estimates from Zambia, over 60 percent of all new HIV infections in urban areas were contracted among currently married and cohabiting unions (Dunkle et al, 2008). In a survey conducted in 2003, women reported an increased anxiety of the likelihood that their partners might infect them with HIV (NAC, 2004). The same survey reported that between 7 and 11 percent of married couples were using condoms with their intimate partners. According Dunkle et al (2008) condom use was lower in cohabiting and married unions than non-cohabiting unions. Furthermore, amongst both men and women who reported having sexually transmitted infections (STI's); only 11 and 10 percent of men and women, respectively. Glynn et al (2001) established that married unions are risk factors for the HIV infection rate of women. Consequently, the low condom use amongst currently married and cohabiting couples may heighten the risk of contracting STI's including HIV. This risk of HIV infection might be particularly heightened for women because of their biological susceptibility.

Although unsafe heterosexual contact is the main channel of the spread of HIV/AIDS, there are certain factors that contribute to high risk of HIV infection such as intimate partner

violence (Feder et al, 2012). The presence of violence in an intimate relationship renders a woman vulnerable to the man's dominance, to the extent that the negotiation for the use of condoms is non-existent and consensual sexual contact a decreasing possibility (Klomegah, 2008). Gendered notions that exist in this society are deeply embedded in its social fabric; continue to perpetuate violence against women (Lawako, 2008).

Women that experience physical or sexual violence from their partners are at a greater risk of having adverse reproductive health outcomes than women who do not experience such from their partners. Induced abortions, miscarriages, unwanted pregnancies and STI's, more specifically HIV, have been associated with intimate partner violence in other settings (Moon, 2007).

Intimate partner violence in Zambia is a prevailing problem with the country's prevalence rate between 45 and 50 percent, the second highest prevalence rate after Uganda, with a prevalence of 50 percent (Borwankar, et al. 2008). It is therefore important to examine the relationship between intimate partner violence and the HIV status among currently married women in Zambia given the high prevalence of HIV and IPV in country.

1.3 Research Question

Is there a relationship between intimate partner violence and the HIV status of currently married women in Zambia?

1.4 Objectives

General Objective

- 1) To examine the relationship between intimate partner violence and HIV status of among currently married women in Zambia

Specific Objectives

- 1) To estimate the prevalence of HIV and IPV among currently married women in Zambia
- 2) To examine the patterns of HIV by selected characteristics of the women
- 3) To examine the relationship between intimate partner violence and HIV status while controlling for other selected covariates

1.5 Justification

There have been very few studies that have focused on factors which may contribute to the high HIV infection rate among currently married women in Zambia. Even though the direct cause of the HIV infection of women is widely recognized, very little is known about the characteristics of currently married women who are infected with HIV. The characteristics of currently married women that are infected with HIV are important factors on their own and cannot be considered to be the same as the characteristics of non married women. Currently married women are constantly engaging in sexual contact with an intimate partner which over the duration of the relationship may increase the risk of infection; especially in the absence of consistent condom use. The characteristics of women that are infected with the HIV virus provide an insight into what factors are at play which may increase the risk of HIV infection. Therefore, the study seeks to provide insight into the characteristics of woman living with HIV and the subsequent relationships with the positive status. Furthermore, the study hopes to reduce the elusiveness of the population that are the most vulnerable to HIV.

It is imperative to understand the extent of IPV's effect on the HIV infection rate of currently married women in Zambia. In study conducted in South Africa, it was demonstrated that intimate partner violence plays a major role in the HIV infection rate of women. Although the study was not conducted on a national level, the study reported a 6 percent incidence rate, which was in-line with the country's HIV prevalence for women (Jewkes et.al, 2010). The presence of IPV in a relationship reduces the negotiation power pertaining to condom use and other aspects of the relationship, which would occur in a non-violent relationship. South African women have revealed that they cannot insist on condom use because to their partners it is an admission of unfaithfulness (Ackermann et.al, 2010). Women who are economically dependent on their spouses; come from poor households; did not completed school or attained a lower level education were more likely to be victims of intimate partner violence and be infected with HIV (Jewkes et.al, 2010). Given the high prevalence of IPV and HIV in Zambia, it is important to establish whether IPV is a risk factor in the HIV infection rate of women.

Lastly, study seeks to contribute to the conversation on IPV and HIV infection of women in Africa. Most of the available evidence on the topic is predominantly from South African studies, which are often not representative of the country itself. Furthermore, the experiences of South African women cannot represent the experiences of women in sub-Southern Africa

and more importantly IPV's effect on the HIV infection rates in other countries. The study will contribute to the limited knowledge of the topic in Africa, to create awareness about the problem. Awareness about the issue of HIV and IPV is fundamental before authorities are to take action on a specific problem. Even though the study has not determined an outcome yet, it is hoped that the study would create the awareness about the problem of HIV and IPV to formulate policies to address it.

Chapter 2: Literature Review

2.1 Introduction

The following chapter firstly, reviews literature on HIV and some of the socio economic variables that are considered as important factors when studying the HIV status of a population. The chapter considers some of the other factors, besides IPV, such as age of respondent, highest educational level and household wealth index as predictor variables that may affect the HIV status of women. Secondly, the chapter briefly discusses a conceptual framework, by author, which attempts to conceptualize the relationship between IPV, socioeconomic variables and the HIV status. Lastly, the hypothesis is presented.

2.2 Literature Review

2.2.1 Patterns of HIV in Southern Africa

Young women in Southern Africa have been primarily affected by the HIV/AIDS pandemic. Population based estimates of 2008 have shown that the most vulnerable youth group were women between the ages of 15 and 24. The highest prevalence's have been estimated to be found in Botswana, Lesotho and South Africa with estimates at over 20 percent while in Swaziland this estimate was at 38 percent (Gouws et al, 2008). The progression of infection rates were lowest at the age of 15 and would generally peak in the late twenties for women while this process is be slower for men of the same age. Some of the reasons for this occurrence are considered to be due to their biological susceptibility to HIV infection and that younger women are more likely to have older sexual partners who are at relatively higher risk of being HIV positive (Williams et al, 2000 and Gouws et al, 2008).

It has been established through literature that the younger the age of sexual debut is; the higher the risk of contracting HIV throughout an individual's life. Women who become sexually active at younger ages have been found to be more vulnerable to HIV infection. In South Africa, HIV prevalence of 37 percent was found among women that were either migrants or non-migrants (Zuma et al, 2003). Of the women who tested positive, 50 percent were between the ages of 26-35. In Zimbabwe it was found that women who had reported sexual debut at 15 years or younger; 54 percent were infected with HIV compared to 38 percent who reported sexual debut at older ages (Pettfora et al, 2004). It was further found

that the median age of coital debut for the sample was 18 years while 11.8 percent reported coital debut at 15 years of age or younger.

2.2.2 The effect of intimate partner violence on HIV status

Intimate partner violence is a major concern internationally and increasingly proving that it has its own dynamics in every society (Jewkes, 2002). In most societies the underlying cause of violence against women emanates from notions of masculinity and how these notions are threatened in society. Over the last few decades women have increasingly become more independent through the opportunities of going to school and gaining employment; this advancement of the female sex has, to the male sex, threatened their understanding of how they, as males, function in society. Consequently, these arising power struggles manifest themselves in intimate relationships where traditional gender roles are still well defined (Jewkes, 2002).

In a study conducted in Zambia, which aimed at examining the perceptions of intimate violence found that men often justified the situations of abuse; stating that it was as a result of the women transgressing against the partner with regards to gender roles (Klomegah, 2008). The study revealed that women who were educated and employed were more likely to experience violence from their partner. In Tanzania it was found that women who were in unequal relationships were more likely to be abused by an intimate partner (McCloskey et al, 2005). The study found that women that had no or primary education; were in polygamous marriages and had no children or more than 5 children were more likely to be abused. In this study, it was further established that men who made a lower financial contribution than their partners were more likely to abuse their partners.

Although intimate partner violence has increasingly become a recognized social ill against women, it has also impacted negatively on general health and reproductive health outcomes. General health implications that have been associated with intimate partner violence range from common headaches, smoking, and alcohol abuse to the constant intake of soft and hard drugs (Grass et al, 2010). Women often resort to the latter health risk behaviours to deal with the effects of violence from their intimate partners. With regards to the reproductive health, women who experience violence from a partner are more likely to experience unwanted pregnancies, miscarriages and induced abortions (Cripe, 2008). Furthermore, the presence of intimate partner violence in a relationship has been associated with the increased risk of contracting STI's such as Syphilis, Gonorrhea and HIV.

Violence perpetrated against women by an intimate partner substantially increases the risk of HIV infection (Anderssona, et.al, 2008). In any intimate relationship where partners do not consistently use condoms with each other are both at risk of HIV infection. In an intimate relationship the presence of violence especially against the woman heightens her risk of infection because of her inability to negotiate safe sexual contact. The risk of infection continues to increase over the duration of the relationship because as the level of equality decreases, the risk of infection increases. The level of mutual consent and communication becomes unequal as the woman is subjected to acts of control and abuse (Anderssona, et.al, 2008). In cohort study conducted in South Africa it was found that women who experienced violence from an intimate partner had a higher incidence – of HIV infection- compared to women who did not experience any form of violence. The study further revealed that women in relationships where gender inequality was high and experienced violence from an intimate partner were more likely to have contracted HIV. The study was conducted over a period of two years and demonstrated that women who did not have sexual contact with their partners at 12 months into the study decreased from 4 to 2 percent by the end of study (Jewkes, et al, 2010). Women, who were sexually active and were in relationships where inequality was high, at the beginning of the study, were more likely to be infected with HIV. The study estimated that the incidence of HIV infection was at 6 percent which was the similar to the national estimate of 6.5 percent for women.

The findings were similar with a Kenyan study which found that of 520 women included in the sample of whom experienced violence from an intimate partner; 40 percent were found to be HIV positive (Fonck et al, 2005). Married women had a higher risk of experiencing violence from a partner while ever married women were 3 times more likely to have experienced lifetime violence compared to women who were never married. Furthermore, the study found that women who attained a lower education were more likely to have experienced violence (Fonck et al, 2005). However, the trend of IPV and HIV infection is not common for all women in unions. A study conducted in America (2009) illustrated that the prevalence of IPV and HIV among women in intimate relationships was at 5.5 and 0.17 percent, respectively (Sarren et al, 2009). In the study, women who were never married; separated or divorced; and widowed were more likely to have been diagnosed with HIV compared to married and cohabiting women (Sarren, et al, 2009). However, the study still

observed a significant relationship between IPV and HIV status with women who experienced violence 3 times more likely to be diagnosed with HIV.

2.2.3 Socioeconomic factors and HIV status

Previously, the HIV/AIDS pandemic was thought of as a disease of the poor and the less educated but this trend has changed (Mishra et al, 2007). In recent times the HIV/AIDS pandemic has been more associated with the educated and affluent. Although, there has been an increase in the HIV prevalence among the more educated and affluent; the relationship is not causal. The educated and affluent are more prone to meeting different people in multiple networks, which may alter their behaviours (Jukes et al, 2008). While education may give an individual the knowledge and power to negotiate their sexual partnerships but the risk of infection seems to be greater for the educated. Wealth increases the social mobility and thus access to sexual networks with multiple partners (Mishra et al, 2007). Thus, the relationships that exist are due to the behaviours of the educated and affluent which increase the risk of HIV infection.

In a study conducted in rural South Africa that was aimed at assessing the association amongst HIV infection, school attendance and sexual behaviour, revealed that there was an association between school attendance and HIV for male students but not for female students (Hargreaves et.al, 2007). Male students were less likely to be HIV positive compared to males who were not students. For female students there was no association found. The study further revealed that the HIV prevalence for female students was at 9.8 percent compared to 3.4 percent for male students. The knowledge of HIV/AIDS and testing was more common among female students that attended school or college, even more so for those that received communication about their sexuality (Hargreaves et al, 2007). The lack of association between school attendance and HIV infection for females is an indication of the power inequalities in intimate relationships; even though it has been shown that females were more knowledgeable about their sexuality and HIV.

Fortson (2008) found that the infection rates were higher among individuals that had between 6 and 12 years of schooling compared to those who had more than 12 years of schooling. Although school attendance is an important underlying factor that reduces the risk of exposure to sexual contact and infection; the length of time spent at schooling is vital if education is to be considered a preventative factor.

In Cameroon, Tanzania, Malawi and Uganda, affluent women were significantly more affected by HIV compared those who were poor (Mishra et al, 2007). HIV prevalence was higher for adults in the wealthiest income category than those in the poorest category (Mishra et al, 2007). There was no difference between men and women, separately, in this trend except for the countries of Ghana and Lesotho where the HIV prevalence was lower in the wealthiest category compared to the poorest category as noted by Mishra et al, 2007. The study further noted that HIV prevalence increases steadily with socioeconomic status. However, another study aimed at assessing the relationship between socioeconomic status and HIV infection in an urban population in Kenya; found that men and women with a lower socioeconomic status were at a higher risk of infection than those of a higher socioeconomic status (Hargreaves et al, 2002). Women with a low socioeconomic status were the most vulnerable to HIV infection as Hargreaves et al, 2002 notes. The relationship between wealth status and HIV is complex and different in many societies as demonstrated by the latter studies.

2.3 Conceptual Framework

This study is based on a framework adapted from a paper by Boerma et al, (2005). The title of the conceptual framework used by Boerma et al, (2005) is, “Proximate-determinants for factors affecting the risk of sexual transmission of HIV”. Their framework demonstrates the link between the underlying factors and the biological systems mediated by the proximate determinants in the HIV infection of an individual. The proximate determinants have a direct influence on the biological system which results in the health outcome: HIV infection as noted by Boerma et al, (2005). HIV infection ultimately causes the AIDS disease which ends in the demographic outcome of mortality. The underlying factors have no direct effect on the infection of an individual but play a significant contextual influence in the risk of infection (Boerma et al, 2005)

For the purpose of this study, the Boerma et al (2005) framework is adapted to demonstrate how IPV influences the HIV status of women. The underlying and proximate determinants as well as the health outcome are kept to illustrate the pathway that influences HIV infection (Boerma et al, 2005). The study excluded the biological systems involved in infection and demographic outcome of mortality. Although the framework focuses on every aspect that heighten the risk of HIV infection, this study mainly focuses on the proximate determinant, specifically IPV, and how its presence may or may not increase the infection rate amongst

women. IPV is considered as a proximate determinant of HIV infection as it is a behavioural factor which heightens the risk of HIV infection. The underlying determinants do not directly influence the HIV status of a woman but are factors that work through IPV to increase or decrease the risk of HIV infection.

Figure 1 demonstrates the relationships that the study observes with particular interest on IPV. Some of the woman's characteristics included: age, age at sexual debut, religion, highest educational level, household wealth index, place of residence and provinces. The partner's characteristics include: age and educational attainment. The characteristics of the woman and the partner, as well as IPV have independent relationships with the outcome of the woman's HIV status. Even though, the underlying determinants do not have direct causal relationships with the HIV status, each characteristic has an influence on the HIV status of the woman.

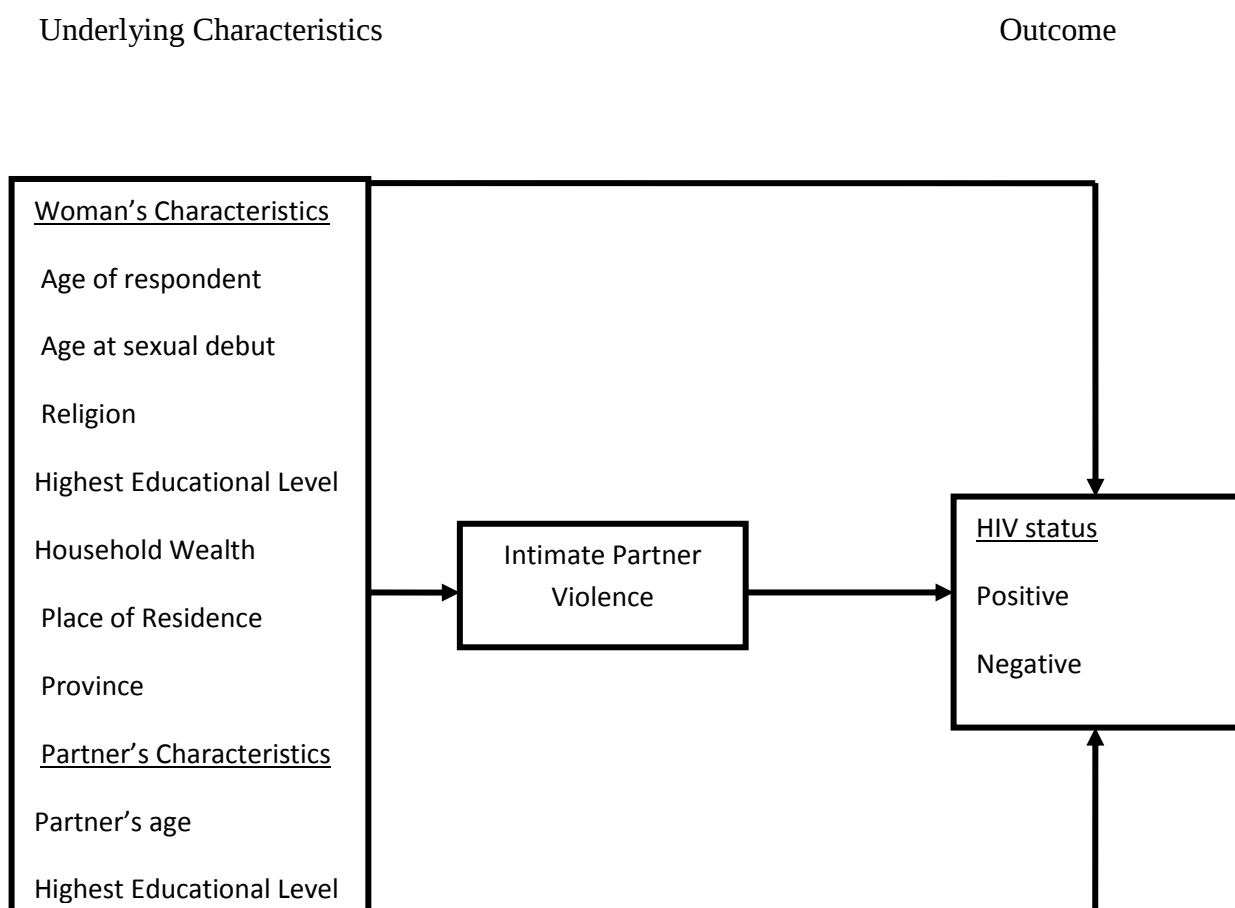


Figure 1: Adapted conceptual framework (Boerma et al) that examines the relationship between intimate partner violence and the HIV status of women in Zambia

The power struggles and notions of gender roles that exist in societies often manifest in the intimate relationships that women are a part of; exposing them to the risk of infection. In some societies the power struggles and gender roles result in intimate partner violence. IPV has also been associated with the increased risk of HIV infection for women. It has been observed in other settings, particularly in South Africa how IPV affects the HIV status of women. Covariates such as age, educational attainment and wealth status have been found, in other settings, to have relationships with the HIV status of women. The conceptual framework attempts to explain these relationships between the independent determinants and the HIV status of women.

2.4 Hypothesis

The study tests the following hypothesis:

NULL: Women who experience violence are as likely to be HIV positive as women who do not experience violence.

ALTERNATIVE: Women who experience intimate partner violence are more likely to be HIV than those who did not.

Chapter 3: Methodology

3.1 Introduction

The following chapter discusses the methods employed to achieve the objectives of the study. The chapter includes the following sections: data source, study population and sample size; the study variables; data analysis, ethical considerations and study limitations.

3.2 Data Source

MEASURE DHS provides reliable and nationally representative data sets on developing countries like Zambia. The 2007 Zambian Demographic and Health Survey (ZDHS) data were used for the analysis of the study. The DHS is the most available source to achieve the objectives of the study within the allocated time frame.

3.2.1 Sample design

The 2007 DHS was based on a nationally representative household survey. The survey was based on a two-stage sampling design that used the Census of Population and Housing of the Republic of Zambia conducted in 2000 (CSO, 2009) as a master sampling framework. The first stage involved stratified sampling from the provincial level through to the district areas. The second stage involved a process where households were systematically sampled of from a household listing. All women and men aged 15-49 who were either permanent residents or visitors in the households on the night before the survey were eligible to be interviewed (CSO,2009). In each household that was sampled, HIV testing was conduct among eligible women and men who consented. Furthermore, a sub-sample of one woman from each household was randomly selected for the domestic violence module (CSO, 2009).

3.2.2 Questionnaires

Three questionnaires were used for the 2007 ZDHS: the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire (CSO, 2009). The Household Questionnaire was used to identify women who were eligible for the individual interview (CSO, 2009). The Women's Questionnaire was used to collect information from all women aged 15-49. The questionnaire included background characteristics such as education, residential history and media exposure. The questionnaire further included: birth history and

childhood mortality; knowledge and use of family planning methods; fertility preferences; antenatal and delivery care; breastfeeding and infant feeding practices; marriage and sexual activity (CSO, 2009). A total of 7,969 households were selected for the sample, of which 7 164 of the households were interviewed, thus yielding a response rate of 98 percent. A total of 7 408 women were selected and 7 146 were interviewed; yielding a response rate of 97 percent.

3.3 Study population and sample size

The population of interest were currently married women who participated in the domestic violence module and took the HIV test provided during the Zambian Demographic and Health survey (ZDHS). The married women who were included in the study were between 15-49 years of age. There was a total of 7 164 women that were interviewed for the survey out of which 2 896 were selected for the domestic violence module and 2 895 of them participated in the HIV test; whose results were either positive or negative.

The Zambian Demographic and Health Survey data sets for both the women's recode and HIV test results were downloaded from the DHS website. In order to get the sample required for the study, the HIV and the women's data sets had to be merged. This required a variable in both data sets to be matched for the integration; this was done using a generated "womanid" in the women's and the HIV data sets. Once merged, the "womanid's" was matched to the corresponding test results. Given that the study only observes the positive and negative test results, the indeterminate results were dropped in the merged data set; yielding a sample size of 2 895 women. The data was weighted and a weighting factor was applied at every stage of analysis. Stata 12 was used for the management and analysis of data.

3.4 Study Variables

Table 1 shows the dependent, main independent and the other selected independent variables that were used in the study.

3.4.1 Dependent variable

The dependent variable of this study is HIV status which was either HIV positive or negative. For the purpose of the analysis, the women who tested negative were coded as 0 while those who tested positive are coded as 1.

3.4.2 Independent variables

The main independent variable, Intimate Partner Violence (IPV), was generated from a number of variables on domestic violence. The survey asked several questions about the acts of physical and sexual violence towards the partner. Both sets of questions were original coded as “yes” or “no” with follow up questions to determine the frequency of the acts, which were recorded as “sometimes”, “often” or “not at all”. For the generated, IPV variable, women who answered “sometimes” and “often” to the survey questions were coded as “yes”. The women who answered “no” and “not at all” to the same questions were coded as “no” for the purpose of the study. This was done for both the physical and sexual violence variables. The generated variable consists of four categories: no violence, physical violence, sexual violence and the combination of physical and sexual violence. The last category combined the ‘yes’ responses from the women who experienced physical and sexual acts of violence.

The other independent variables of the study included: age of respondent, age at sexual debut, religion, highest educational level, household wealth index, place of residence, provinces, partners age and partners education. The age of respondent variable categorizes the ages of women into 5-year intervals from 15 to 49. The variable was categorized into the three following three categories: 15-24, 25-34 and 35+. Age at sexual debut was originally a continuous variable which was grouped into the following categories: less than 15 years of age, 15-19 and 20+. Religion of the respondent originally included the Catholics, Protestant, Muslims and other religions. For the purpose of the study, religion was reclassified as Christian- which combined the Catholics and Protestant-, Muslims and other religions. Highest educational level was originally recorded as no education, primary education, secondary education and higher education. The variable was regrouped into the following: no education, primary education and secondary or higher education- which combined secondary and high education. Household Wealth Index was used as a proxy for the wealth status of the respondent and consisted of the following categories: poorest, poor, middle, rich and richest. This was reclassified into poor, middle and rich by grouping the poorest with the poor and the rich with the richest to obtain the Household Wealth Index that is used in the study. Place of residence is concerned with the location of the individual’s dwelling whether they reside in rural or urban areas and this variable is used as originally coded in the data set. The province variable illustrates the geographic distribution of the respondents with regards to where they reside and is used as coded in the data set. Partner’s age is a continuous variable which ranged from 16 to 84 years of age and this variable was regrouped into the following age

groups: <25, 25-34, 35-44 and 45+. Partner's education was originally coded as no education, primary education, secondary education and higher education; this was regrouped into no education, primary education and secondary or higher education- which combined secondary and higher education.

Table 1: Variables of the study with their definitions and codes

Code	Variable name	Variable Categories	Recode
HIV Status			
Hiv03	Blood Test Results	Negative Positive	(0)Negative (1)Positive
Intimate Partner Violence			
d105b	Physical Violence	Did the spouse ever slap the respondent?	(0)No violence
d105j		Did the spouse ever twist the respondents arm or pull the respondents hair?	(1)Physical violence
dl05a		Did the spouse ever push, shake or throw something at the respondent?	(2)Sexual violence
d105c		Did the spouse ever punch the respondent with his fist or with something that could hurt the respondent?	(3)Both physical and sexual violence
d105d		Did the spouse ever kick, drag or beat the respondent up?	
d105e		Did the spouse ever attempt to strangle or burn the respondent on purpose?	
dl05k	Sexual Violence	Did the spouse ever attack the respondent with a knife, gun or other weapon?	
d105h		Physically force you to have sexual intercourse with him even when you did not want to?	
d105i		Forced you to perform any sexual acts you did not want to?	
Age of respondent			
v013	Age5-year groups	15-19 20-24 25-29 30-34 35-39 40-44 45-49	(1)15-24 (2)25-34 (3)35+

Age at sexual debut			
V531	Age at first intercourse	The variable is continuous from 8 to 31 years of age.	(1) <15 (2) 15-19 (3) 20+
Religion			
v130	Religion	Catholic Protestant Muslim Other	(1)Christian (2)Muslim (3)Other
Highest Educational level			
v106	Highest Educational level	No education Primary education Secondary education Higher education	(1) No education (2) Primary education (3) Secondary or higher education
Household Wealth Index			
v190	Wealth index	Poorest Poorer Middle Richer Richest	(1)Poor (2)Middle (3)Rich
Place of Residence			
v025	Type of Place of Residence	Rural and Urban	(1)Rural (2)Urban
Province			
v101	Region	Central Copperbelt Eastern Luapula Lusaka Northern North-western Southern Western	(1) Lusaka (2)Copperbelt (3)Central (4)Luapula (5)Eastern (6)Northern (7)North-western (8)Southern (9)Western
Partner's age			
V730	Partners age	The variable is continuous in the data set, the ages ranged from 16 to 86	(1)<25 (2)25-34 (3)35-44

			(4)45+
Partner's highest educational level			
V701	Partner's education level	No education Primary education Secondary education Higher education	(1) No education (2) Primary education (3) Secondary or higher education

3.5 Data Analysis

3.5.1 Univariate Analysis

The analysis for the study was completed in three stages. The first stage uses a simple percentage distribution of HIV and IPV. This analysis addresses the first objective which is to obtain the prevalence's of HIV and IPV.

3.5.2 Bivariate Analysis

The stage also involved descriptive bivariate analysis which involves a cross tabulation. This bivariate analysis illustrates the distribution of all the independent variables by HIV status. This addresses the 2nd objective which aims to examine the patterns of HIV by selected characteristics of women

3.5.2.1 Analytical Analysis

The second stage involved bivariate analysis but of an analytical nature which examines the independent relationship between IPV, the main independent variable, and the other independent variables with the dependent variable. This stage of analysis used a Binomial Logistic Regression.

3.5.3 Multivariate Analysis

The final stage of the analysis also made use of the Binomial Logistic Regression which examined the relationship between intimate partner violence and HIV status, while controlling for other selected independent variables- which is the 3rd objective. The regression is used for dichotomous outcomes, which in this study whether the woman was HIV positive or negative. The regression shows the extent of the relationship by using the odds ratio, which gives the odds of an outcome occurring, for every variable included in the analysis. The Logistic Regression equation is as follows:

$$\left\{ \frac{P_i}{1 - P_i} \right\} = \beta_0 + \beta_1 x_i + \beta_2 x_i + \varepsilon_i$$

(Galpin et al, 2012)

P_i = dependent variable

α = constant

β = regression coefficients

X_i = independent variables

Furthermore, an interaction term was included in the regression to specifically test for interaction between educational attainment and household wealth index. The results of the interaction term are commented on separately from the regression results. This is due to the regression using odds ratios while the interaction results are commented on using coefficients.

3.6 Ethical Considerations

The study made use of secondary data and the ethical considerations were dealt with at the first stage of the data collection procedure. The study will not use any biomarkers that would disclose the identities of the respondents and thus their anonymity is assured.

3.7 Study Limitations

Temporal Sequence

The study only has one limitation, as a result of the data being cross sectional in nature it is difficult to determine between HIV and intimate partner violence which of the two factors causes the other.

Chapter 4: Results

4.1 Introduction

The chapter discusses the results of the four stages of analysis. The first section shows the univariate statistics on HIV and IPV, using pie charts and a bar chart. This is followed by the results of the descriptive analysis conducted on the selected independent variables and HIV status. Finally the results of the bivariate and multivariate analysis are presented and discussed.

4.2 Univariate statistics

The pie charts and bar graph illustrate the prevalence's of both HIV (fig. 2) and IPV (fig. 3) among the respondents. Of the 2 895 women, 14.42 percent tested HIV positive. It was estimated that 42.99 percent of the respondents experienced violence from an intimate partner. Amongst the 1242 women that experienced violence, 65.02 percent experienced physical violence; 8.34 percent experienced sexual violence while 26.63 percent experienced both physical and sexual violence from an intimate partner (fig .4).

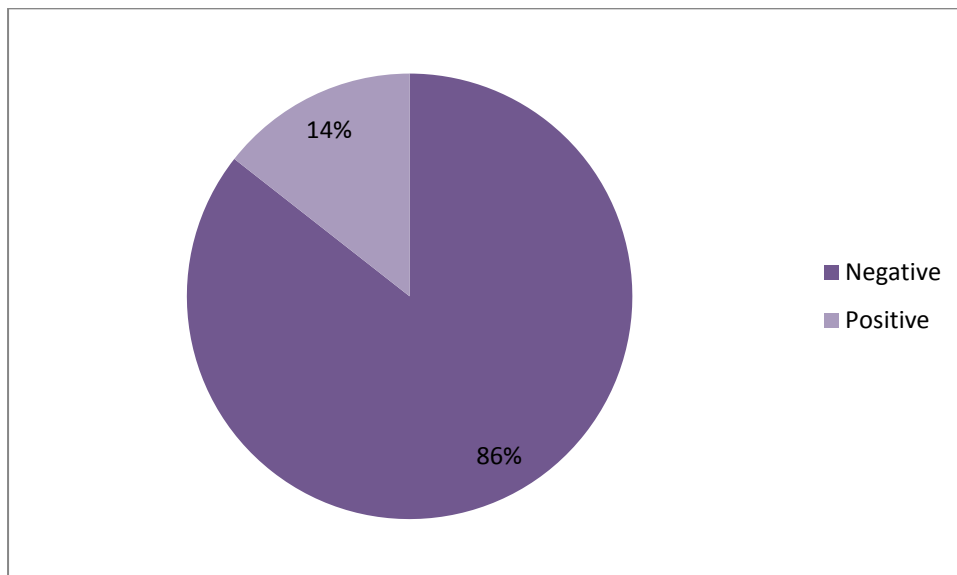


Figure 2: Prevalence of HIV among currently married women

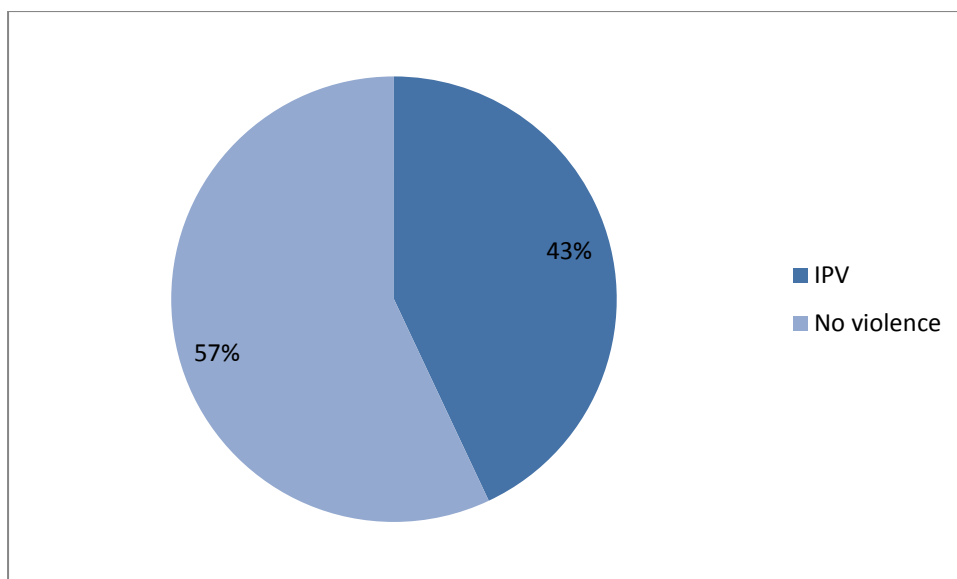


Figure 3: Prevalence of IPV among currently married women

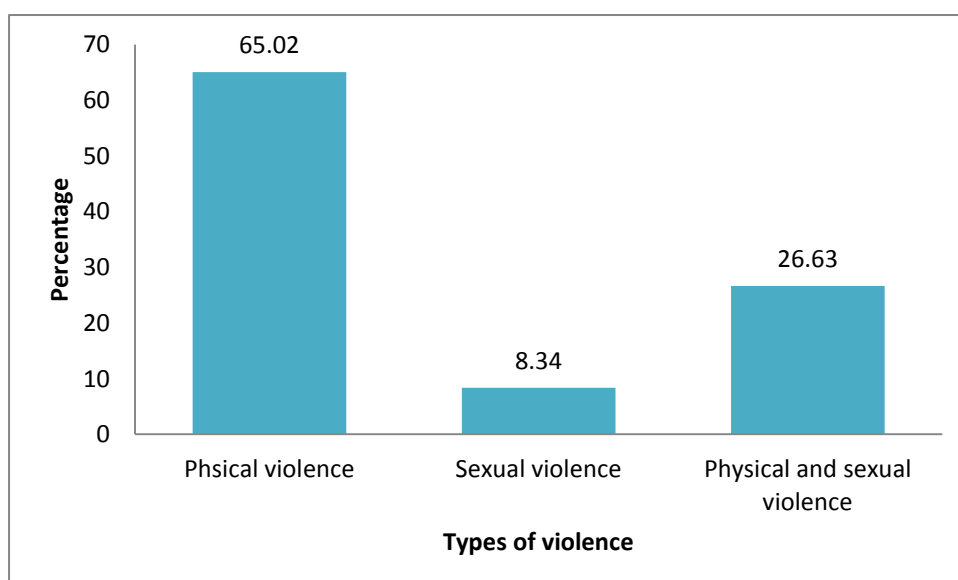


Figure 4: Percentage distribution of the types of violence among abused women

4.3 Bivariate Statistics

Table 2 shows the characteristics of currently married women by their HIV status. Of the 2 895 respondents, 2 459 were negative while 436 that tested HIV positive. Over half (57.01 percent) of the respondents did not experience violence; 27.96 percent experienced physical violence, 3.59 experienced sexual violence while 11.45 percent of women experienced both physical and sexual violence. Of the 436 women who tested HIV positive, 53.95 percent had

experienced no violence from an intimate partner. Twenty-seven percent experienced physical violence; 3.32 percent experienced sexual violence while 14.79 percent experienced both physical and sexual violence.

Most of the respondents were between the ages of 25 and 34 years and the age group had the highest percentage of women that were HIV positive. The age group of 25-34 constituted 44.49 percent of the respondents while the age groups of 15-24 and 35 years and older made up 27.92 and 27.59 percent of the sample. Of the women that tested positive, 17.93 percent were aged between 15 and 24. Fifty-six percent of the women that tested positive were of the 25-34 age group while 25.47 percent were aged 35 years and older.

Most of the women in the sample had their sexual debut between the ages of 15 and 19, and the age group had the highest percentage of infected women. Seventy percent of the respondents had their sexual debut between the ages of 15 and 19; 19.03 percent of women who had their sexual debut before the age of 15 and only 10.22 percent of women had their sexual debut at the age of 20 or older. Of the 436 women who tested HIV positive, 17.45 percent had their sexual debut before the age of 15 while 69.22 percent had their sexual debut between 15 and 19 years of age. Only 13.32 percent of women who were HIV positive had their sexual debut at 20 years or older.

Ninety-eight percent of the women in the study were of the Christian faith and constituted the highest percentage of women who tested HIV positive. Of the women who tested positive, 98.63 percent were of the Christian faith.

Sixty percent of the women had a primary education. Fourteen percent of the respondents had no education and 25.47 percent had attained secondary or higher education. Of those who tested positive, 7.93 percent had no education, 53.62 percent who had a primary education, while 38.45 percent had a secondary or higher education.

With regards to household wealth, most of the respondents came from either a poor or rich households at 43.74 and 35.65 percent, respectively. Of those who tested positive, 20.93 percent of women came from poor households, 62.56 percent came from rich households and 16.51 percent came from middle income households.

Sixty-eight percent of the respondents resided in rural areas while 31.11 percent were from urban areas. With regard to those who tested positive, 42.84 percent resided in rural areas while 57.16 percent of women in urban areas.

In terms of the geographic distribution, the highest HIV percentages were found in the provinces of Central, Copperbelt and Lusaka at 13.62, 23.30, and 24.41 percent, respectively. The percentages of the other provinces ranged from 2.93 percent to 9.40 percent.

Majority of the women had partners who were aged 25 years or older. Of the women who tested HIV positive, 43.73 percent of them had partners between the ages of 35 and 44 years. A further 35.58 percent had partners aged between 25 and 34 while 2.76 percent of women had partners younger than 25 years

Women whose partners attained a secondary or higher education had the highest percentage of HIV. Of those that tested positive, 35.86 percent of them had partners that had attained a primary education, 59.40 percent of women had partners that had a secondary or higher education while 4.74 percent of women had partners that had no education.

Table 2: Percentage distribution of IPV and other characteristics of currently married women by their HIV status

Study variables	HIV status		Total of the selected variables	
	Negative N=2459	Positive N=436	Percentage	Number
Intimate partner violence				
No violence	57.52	53.95	57.01	1651
Physical violence	27.96	27.94	27.96	804
Sexual violence	3.63	3.32	3.59	107
Physical and sexual violence	10.89	14.79	11.45	331
Age of respondent				
15-24	29.61	17.93	27.92	821
25-34	42.45	56.60	44.49	1320
35+	27.95	25.47	27.59	754
Age of sexual debut*				
<15	19.29	17.45	19.03	522
15-19	71.01	69.22	70.75	1905
20+	9.70	13.32	10.22	246
Religion*				
Christian	98.14	98.63	98.21	2839
Muslim	0.68	0.15	0.60	13
Other	1.18	1.22	1.19	37
Educational attainment				
No education	15.07	7.93	14.04	401
Primary education	61.65	53.62	60.49	1728
Secondary or higher education	23.28	38.45	25.47	766
Household wealth index				
Poor	47.58	20.93	43.74	1183
Middle	21.30	16.51	20.61	648
Rich	31.12	62.56	35.65	1064
Place of residence				
Rural	73.28	42.84	68.89	1902
Urban	26.72	57.16	31.11	993
Province				
Lusaka	11.21	24.41	13.12	341
Copperbelt	12.16	23.30	13.77	280
Central	8.90	13.62	9.58	269
Luapula	9.46	6.60	9.05	338
Eastern	20.24	9.27	18.66	480
Northern	16.70	4.88	14.99	335
North-western	5.20	2.93	4.87	262
Southern	9.55	9.40	9.53	310
Western	6.59	5.64	6.45	280
Partners age				
<25	8.80	2.76	7.93	218
25-34	42.12	35.58	41.18	1229
35-44	28.14	43.73	30.38	869
45+	20.94	17.93	20.50	579
Partners education*				
No education	7.23	4.74	6.87	201
Primary education	51.64	35.86	49.39	2430
Secondary or higher education	41.12	59.4	43.74	222

*Contains some missing observations

4.4 Bivariate and Multivariate Results

Table 3 shows the results of the bivariate and multivariate analysis conducted that assessed, firstly, the independent relationship between each of the independent determinants and the HIV status of women. Secondly, the relationship between intimate partner violence and the HIV status of women while controlling for other selected covariates.

The unadjusted results indicate that women who experienced both physical and sexual violence were 1.45 times, significantly, more likely to be HIV positive compared to women who did not experience violence. Women who experienced physical violence were 1.07 times more likely to be HIV positive compared to women that did not experience violence, although not significant. The adjusted results show that women that experienced both physical and sexual violence were 1.03 times likely to be HIV positive compared to women that did not experience such violence, although not significant. Thus the study rejects the null hypothesis in favour of the alternative hypothesis at the bivariate level.

The age of the respondent was found to be significant at both levels of analysis, except for the oldest age in the adjusted results. The unadjusted results show that, women of the age groups 25-34 and 35 or older were 2.20 and 1.50 times, significantly, more likely to be HIV positive compared to women between 15 and 19 years of age. The adjusted results show that only the age group of 25-34 were found to have significant relationship with the HIV positive status. The results indicate that women between 25 and 34 were significantly more affected by HIV with the odds (1.57) being particularly high for these women. Women that were 35 years or older were less likely to be HIV positive.

Age of sexual debut was not found to be significant at any level of analysis but a positive relationship was established. The unadjusted results show that women whose sexual debt was between the ages of 15 and 19 were 1.07 times more likely to be HIV positive compared to those who debuted before the age of 15. Women who debuted at the age of 20 or older were found to have slightly higher odds of being HIV positive. The adjusted results show that women who debuted between 15 and 19 years of age were 1.13 times more likely to be HIV positive, although not significant.

Religious affiliation was not found to be significant factor in predicting the HIV status of currently married women. However, positive relationships were established between women

of other religions and HIV positive status. Women who were of other religions were more likely to be HIV compared to women of the Christian faith.

Highest educational attainment was found to have strong and significant relationship with the HIV positive status. Women that attained a primary education were more likely to be HIV positive compared to women with no education with odds of 1.97. Women who attained a secondary or higher education were 4.57 times more likely to have HIV compared to women with no education. According to the adjusted results there were no significant relationships found, but a positive relationship was still established. Women that attained a primary and secondary or higher education had greater odds of being HIV positive compared to women who had no education with odds of 1.14 and 1.12 for women, respectively.

Household wealth index was found to be significant at both levels of analysis. Women of middle and rich households were 1.76 and 4.57 times more likely to be HIV positive compared to women from poor households. The adjusted results showed the same trend and indicated a significant relationship between the factors, but not as strong as the relationship observed in the unadjusted results. Women from middle and rich households were 1.55 and 1.91 times more likely to be HIV positive compared to women from poor households

Place of residence and provinces were found to have significant relationships with the HIV positive status of women. Women from urban areas were 3.66 times, significantly, more likely to be HIV positive compared to women from the rural areas. The adjusted results show that women from urban areas still have significantly higher odds of 1.82 of being infected with HIV. Women that resided in the provinces of Luapula (0.32), Eastern (0.21), and Northern (0.13), North-western (0.26), Southern (0.45) and Western (0.40) were significantly less likely to be HIV positive compared to women in Lusaka. The adjusted results show that only women in the Eastern and Northern provinces were significantly less likely to be HIV positive compared to women in Lusaka. Although not significant, the Copperbelt province was the only province that showed a positive relationship with the HIV positive status.

The unadjusted and adjusted results show that partner's age was found to have a significant relationship with HIV positive status. The unadjusted results show that women whose partners were between the ages of 25-34, 35-44 and 45 years or older were 2.69, 4.95 and 2.73 times more likely to be HIV positive compared to women whose partners were younger than 25. The adjusted results show that only women whose partners were between the ages of 25 and 34 were, significantly, more likely to be HIV positive compared to women whose

partners were younger than 25. Although, the groups of 25-34 and 45 years or older were not significant at the multivariate level, they indicate a linear positive relationship with the HIV positive status.

Although partners' education was only significant for partners with a secondary or higher education at the bivariate level, the adjusted results indicate that women who had educated partners were less likely to be HIV positive. The unadjusted results indicate that women whose partners that attained an education were more likely to be HIV positive compared to women whose partners had no education. Women whose partners attained a secondary or higher education were 2 times more likely to be HIV positive. Contrary to the latter, the adjusted results show that women whose partners were educated were less likely to be HIV positive even though not significant.

Table 3: Unadjusted and adjusted Odds Ratio showing the likelihood of being HIV positive among married women in Zambia

Study Variables	Unadjusted Results			Adjusted Results		
HIV	Odds Ratio	95% Confidence Interval		Odds Ratio	95% Confidence Interval	
Intimate partner violence						
No violence	1.00					
Physical violence	1.07	0.81	1.40	0.88	0.66	1.17
Sexual violence	0.98	0.48	1.95	0.70	0.29	1.72
Physical and sexual violence	1.45*	1.02	2.06	1.03	0.68	1.57
Age of respondent						
15-24	1.00					
25-34	2.20*	1.65	2.92	1.57*	1.08	2.27
35>	1.50*	1.07	2.11	0.8	0.64	2.02
Age of sexual debut						
<15	1.00					
15-19	1.07	0.81	1.43	1.13	0.82	1.56
20+	1.51	0.94	2.43	0.13	0.66	1.93
Religion						
Christian	1.00					
Muslim	0.21	0.03	1.76	0.17	0.02	1.58
Other	1.03	0.41	2.61	1.42	0.44	4.63
Educational attainment						
No education	1.00					
Primary education	1.98*	1.38	2.82	1.14	0.76	1.71
Secondary or higher education	4.50*	2.10	9.65	1.12	0.67	1.89
Household wealth index						
Poor	1.00					
Middle	1.76*	1.15	2.37	1.55*	1.04	2.30
Rich	4.57*	3.08	6.08	1.91*	1.10	3.31
Place of residence						
Rural	1.00					
Urban	3.66*	2.82	4.75	1.81*	1.18	2.76

Province						
Lusaka	1.00					
Copperbelt	0.88	0.57	1.36	0.88	0.55	1.39
Central	0.70	0.44	1.11	1.30	0.76	2.19
Luapula	0.32*	0.20	0.54	0.62	0.37	1.05
Eastern	0.21*	0.13	0.34	0.54*	0.33	0.91
Northern	0.13*	0.08	0.23	0.29*	0.16	0.54
North-western	0.26*	0.13	0.50	0.54	0.27	1.09
Southern	0.45*	0.28	0.73	0.89	0.56	1.44
Western	0.40*	0.23	0.66	0.86	0.47	1.56
Partners age						
<25	1.00					
25-34	2.69*	1.40	5.16	1.91	0.93	3.91
35-44	4.95*	2.62	9.35	3.38*	1.61	6.72
45+	2.73*	1.41	5.28	2.11	0.90	4.94
Partners education						
No education	1.00					
Primary education	1.06	0.61	1.81	0.84	0.48	1.47
Secondary or higher education	2.20*	1.57	5.88	0.96	0.53	1.72

1.00 = Reference Category

*= Significant at 0.05

4.5 Results of the interaction test

The results of the interaction term show that there is no statistical interaction between educational attainment and household wealth index. It has been demonstrated from table 4, below, that all interactions between the two factors equal zero with p-values greater than 0.05 and thus the study accepts the null hypothesis that all coefficients are simultaneously equal to zero.

Table 4: Results of the interaction term between household wealth index and educational attainment

Educational attainment*Household wealth index	Coeffi.	P> t	Confi. interval
Primary education*Middle wealth index	0.48	0.41	-0.65 1.60
Middle wealth index* Secondary or higher education	0.61	0.20	-0.32 1.54
Rich wealth index*Primary education	0.68	0.35	-0.77 2.14
Secondary or higher education*Rich wealth index	0.44	0.49	0.80 1.69

Chapter 5:

Discussion, Conclusion and Recommendations

5.1 Introduction

The study examined the relationship between intimate partner violence and the HIV status of married women. The study found no consistent relationship between IPV and the HIV status among women that experienced both physical and sexual violence. Although there was a strong relationship found between IPV and HIV status of women at the bivariate level but this was not found at the multivariate level. The age of respondent was also found to be a significant factor in the prediction of the HIV positive status of currently married women. Socioeconomic factors such as educational attainment, household wealth index and place of residence were all found to have positive linear relationships with the HIV positive status of women. Secondly, the chapter concludes on the findings of the study. Lastly, the study recommends intervention programs based on the findings.

5.2 Discussion

The conceptual framework that the study used was found to be fairly consistent with the findings of the study. The alternative hypothesis of the study was proven; women who experience both physical and sexual violence were more likely to be HIV positive. Contrary to the relationships proposed in the framework, the underlying determinants have shown stronger and more direct relationships with the HIV positive status. The relationships established have just proved that the pandemic in Zambia, for women, is not an issue of creed, class or education which were the traditional inhibitors of the spread of the pandemic; but of the empowerment of the girl child.

The study estimated HIV prevalence amongst currently married women to be at 14.42 percent which is still one of the highest estimates in Southern Africa. Currently married women are considered to be at a lower risk of HIV infection compared to the non-married but the finding suggests that the risk of infection for married women is substantial. This finding is similar to a study conducted in Zambia which found marriage to be a significant risk factor for the infection rate of women while there was no difference in the HIV infection rates among the married and non married women (Glynn et al, 2001). Women in married unions are often less

likely to use or insist on the use of condoms with a current partner and this may have led to the high prevalence.

The study estimated an IPV prevalence of 42.99 percent amongst currently married women. Although the rate of violence perpetrated by intimate partners decreased from the estimated 45 percent, in 2001 (Borwankar, et al. 2008); compared to countries like Rwandan (33 percent) and Tanzania's (15 percent), it is still quite high (Dude, 2009 and McCloskey et al, 2005). Of the 1 245 women that experienced violence from an intimate partner, 64.73 percent experience physical violence; only 8.62 percent experienced sexual violence while 26.65 percent experienced both physical and sexual violence. The rate of violence amongst this sample is of concern and maybe an indication that traditional gender roles are still enshrined in the society's social fabric and that the violence is a reaction to the changing gender roles (Lawoko, 2008). Klomegah (2008) study conducted in Zambia, they found that both men and women often internalize and justify situations of abuse. Paradoxically, women in the study held firm to traditional beliefs of wife beating which may be attributed to the socialization and cultural norms in Zambia (Klomegah, 2008).

The distribution of HIV was highest for women who did not experience any form of violence at 53.95 percent. Women who experienced violence from an intimate partner had lower percentages of women with HIV at 27.94, 3.32 and 11.45 percent for those who experienced physical violence, sexual violence and the both physical and sexual violence, respectively. The relationship found between IPV and HIV at the bivariate level suggests that women that experienced both physical and sexual violence were particularly more vulnerable to HIV. The presence of physical violence in an intimate relationship decreases the power equality and consequently sexual violence may begin to manifest over the course of the relationship, which may increase the odds of a HIV positive status. Similar to a South African study which found that as the power equality decreased in the relationship, the more likely the women were HIV positive (Jewkes et al, 2008).

The majority of the respondents were between the ages of 25 and 34 years and HIV infection distribution was also the highest in the age group at 56.60 percent. Furthermore, women in the age group were significantly more likely to be HIV positive at both the bivariate and multivariate levels. This finding is consistent with data from Southern Africa that indicates that women between the ages of 25-29 have the highest HIV prevalence compared to women in other age groups (Gouws et al, 2008). The age of the respondent was found to be a

significant factor in predicting the HIV status of the woman. Further, for the women in the sample, their partners' age showed important relationships with HIV status. At the bivariate level respondents that had partners that were more than 25 years old were significantly more likely to be HIV positive. Although the result is similar when other variables were controlled for, only being married to partners' aged of 35-44 years was significant at this multivariate level. This finding is consistent with data estimates in Zambia which indicates that men older than 30 were more likely to have partners that were HIV positive. In Southern Africa, estimates have shown that men's HIV prevalence only starts peaking in the mid 30's and maybe the reason for the significant relationships (Gouws et al, 2008).

Women who were educated were more likely to be affected by HIV than women who were not educated although, statistically insignificant at the multivariate level. Also, partner's education was found to be associated with HIV status at the bivariate level with women whose partners attained a secondary or higher education being two times more likely to be HIV positive. This association was reversed and became insignificant at the multivariate level.

A possibility for the positive relationship between educational attainment and the HIV positive status is the role of age at sexual debut. It is possible that having started their sexual relations earlier in life could have exposed them to the HIV infection. Education's role in the prevention of HIV emanates from the idea that when a girl is kept in school it decreases the chance of any unplanned pregnancy and consequently the threat of HIV infection (Hargreaves et al, 2007). However, it is possible that more women were using contraceptives that prevent pregnancy, and not condoms that would prevent HIV infection. Consequently, by the end of their schooling career they more likely to be infected with HIV, especially when entering a union.

Furthermore, attaining an education cannot be argued to have a causal relationship with the HIV but it is rather the behaviours that are associated with having an education that may have relationships with HIV infection. Educational attainment for both the respondents and their partners has shown positive linear relationships with the HIV status. Education exposes women and men to information on HIV prevention and other contraceptives (Jukes et al, 2008). However, in this sample education may have allowed access to different sexual networks and different ways of thinking regarding HIV prevention and infection. These ways of thinking may have altered behaviours that would have prevented HIV infection. This may

have increased their risk to HIV infection for women. Similar to a study by Fortson (2008), which found that, in Burkina Faso, the more educated the woman were the more likely to be HIV positive.

The wealth status of the women which was measured through the household wealth index was found to have statistical significant and positive relationship with HIV. The study's results revealed that women from either the middle or rich households were more likely to have been infected with HIV. The odds of women of the middle and rich households being HIV positive ranged from 1.98 to 4.50 times, respectively, at the bivariate level and 1.55 and 1.91, respectively at the multivariate level.

The affluence of the women increases her mobility and access to multiple networks that if poor may not have access to. These networks may lead to multiple sexual partners which may consequently increase her risk to HIV infection. Secondly, the high prevalence may be the result of being able to manage the disease effectively hence, improved survival for women in more affluent households.

The majority of the women in the sample reside in rural areas (69 percent) while distribution of HIV was higher for women in urban areas (73 percent). Women in urban areas were significantly more likely to be HIV positive at odds of 3.66 and 1.81 at the bivariate and multivariate level, respectively. This finding lends credence to the finding of more affluent and educated being more affected by HIV than the non educated and poor women.

Provincial distribution of HIV was higher in the industrialized provinces of Lusaka and Copperbelt. The provinces of Lusaka and Copperbelt jointly contribute over 45 percent of the sample's HIV positive distribution at 24.41 and 23.30 percent, respectively. The other provinces of Central, Luapula, Eastern, Northern, North-western, Southern and Western had contributed 13.62; 9.40; 9.27; 6.60; 5.64, 4.88 and 2.93 percent, respectively. This is further illustrated by the relationships at the bivariate and multivariate results; women in all eight provinces were less likely to be HIV positive compared to women in Lusaka. Although, the growth rate in the provinces of Lusaka and Copperbelt has declined over recent years, the provinces are still densely populated with people trying to better their lives through business and opportunities of employment. Furthermore, these provinces are more urbanized and have far greater opportunities of schooling which would explain the findings for the affluent and educated. Even though the other provinces have substantial numbers of women with HIV, it lags behind its more industrialized counterparts.

5.2 Conclusion

The study was important, as it demonstrates the vulnerability of married women to the threat of HIV. The study has established that women who experienced both physical and sexual violence were more vulnerable to HIV. The violence found in the study reveals the delay in transforming traditional norms and beliefs about wife beating, in spite of the education that their partners have. While women are facing violence, the relationship between IPV and HIV are not emphasized as social and public health issue. The presence of intimate partner violence in any society is a problem that impacts on the well being and development of women. For as long as women are not empowered in their private sphere, the harder it will be to address any social ills such as HIV.

The study has confirmed how the HIV/AIDS pandemic has affected women between the ages of 25-34. Education, household wealth index and place of residence all had significant relationships with HIV, except for education at the multivariate level. Traditionally, these factors were considered as preventive factors that inhibited the rapid infection rate. However, in this study it has been shown that these factors are ineffective to inhibit the infection rate among currently married women.

5.3 Recommendations

The study firstly recommends, over and above the current HIV intervention programmes, that authorities target programmes to currently married women that are educated, from affluent backgrounds and that reside in urban areas. These intervention programs should focus on HIV prevention and how important it is to maintain a negative status, even in unions. Furthermore, campaigns should focus on promoting the delay of sexual debut for all women, especially those younger than 15 years.

Secondly, there needs to be programmes that address the high prevalence of intimate partner violence. The problem of violence is not one that women-targeted interventions only can address. Programs on intimate partner violence need to be targeted at men from various socio economic backgrounds and from an early age. More needs to be done to redefine how this society thinks about violence in intimate relationships.

Thirdly, campaigns and programmes need to be created to teach women about the relationship between HIV and IPV, and how IPV can increase the risk of HIV infection.

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