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GENDER BASED VIOLENCE AND HIV RISK BEHAVIOR AMONG ZAMBIAN WOMEN

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This Research Report is submitted in partial fulfillment of the requirements for Master of Arts Degree in Demography and Population Studies at the University of the Witwatersrand

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Date: 31st August 2018

Declaration

I Zinhle Zanele Sekauke, 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.

Zinhle Zanele Sekauke

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Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
Cl	Confidence interval
CSO	Central Statistical Office
DHS	Demographic and Health Survey
GBV	Gender based violence
HIV	Human Immunodeficiency Virus
STATA	Statistical Software Analysis
STI	Sexually Transmitted Infection
TGP	Theory of Gender and Power
UNAIDS	Joint United Nations Programme on HIV/AIDS
ZDHS	Zambia Demographic and Health Survey

Abstract

Background: The question of the inextricable link between gender based violence and HIV/AIDS has been widely debated in the social sciences, with researchers arguing that indeed violence is associated with increased risk of HIV/AIDS. This study investigates the association between gender based violence and HIV risk behavior (inconsistent condom use and sexual partner concurrency) among ever-married Zambian women of child bearing ages (15-49).

Methods: This research used the nationally representative sample from the Zambia Demographic and Health Survey, 2013-14 data. The population sample under study consisted of 6,125 ever-married women of child bearing ages (15-49) who participated in the domestic violence module during this survey and reported on their sexual relationship that occurred in the twelve months preceding the national survey. The study applied, binary logistic regression at both the bivariate and multivariate levels of analysis in examining the relationship between HIV risk behavior (inconsistent condom use and sexual partner concurrency) and gender based violence.

Results: The results of the binary logistic regression models after adjusting for other potentially contributing variables indicated a positive significant relationship between gender based violence (combined) and HIV risk behavior. Women that had experienced any of the three forms of violence were about 3 times (OR: 3.32; 95% Cl: 1.74- 6.32, $p<0.001$) more likely to have been engaged in a concurrent sexual partner relationship as compared to women that had not experienced any form of violence. The odds of inconsistently using condoms among previously abused women increased by 35% (OR: 1.35, 95% Cl: 1.03-1.76, $p<0.027$) for these women as compared to those of women who had not experienced any form of violence.

As postulated by the Theory of Gender and Power, the results of the adjusted binomial logistic regression odds ratios indicated that, not working, significantly increased the odds of being involved in concurrent sexual partnerships by 91% (OR: 1.91, 95% Cl: 1.04 – 3.50) among Zambian ever-married of child bearing age (15-49) as compared to their currently working counterparts. Surprisingly though, the likelihood for concurrent sexual partner relations was about 2.5 times higher (OR: 2.47; Cl: 1.07-5.71, $p<0.05$) for women in the middle wealth quintile as compared to their counterparts in the poor quintile. Rich women

were also more likely (OR: 2.37; 95% Cl: 1.03-5.41, p<0.05) to report being involved in concurrent sexual partnerships relative to their counterparts in the poor quintile.

The adjusted odds ratios for inconsistent condom use among women who reported being unable to request a condom increased by about 5.6 times (OR 5.63, 95% Cl: 3.18 – 9.95, p = 0.000) as compared to those of women who reported being able to request condom use during sexual intercourse. The results of the binary logistic regression also indicated a strong positive relationship (p-value < 0.05) between women's attitude towards wife beating if she refuses to have sex with him and inconsistent condom use. For women who believed that wife beating was justified if she refused her husband sex, the odds for inconsistent condom use increased by 43% (OR 1.43, 95% Cl: 1.04 – 1.98, p<0.05) as compared to those of women who did not condone such an act. Women who perceived themselves at high risk for HIV were less likely to practice inconsistent condom use (OR: 0.47, 95% Cl: 0.34 – 0.64, p =0.000) also interestingly, women who were not sure of their risk (don't know) were less likely to practice inconsistent condom use (OR: 0.41, 95% Cl: 0.28-0.57, p = 0.000).

Self-reported sexual partner concurrency among Zambian ever-married women of child bearing ages (15-49) was found to be less than 1%. The prevalence of inconsistent condom use was extremely high among this group of women, with 96% reporting inconsistent condom use in the 12 months prior to the survey. The prevalence of gender based violence among this group of women was about 41% (2,482), with physical violence being the most commonly reported form experienced (39%). Emotional violence (19%) and sexual violence (13%) were the least reported forms of violence experienced by these women.

Conclusion: This study has contributed to the literature on gender based violence and HIV risk behavior among Zambian ever-married women of child bearing ages (15-49) and further provides empirical and scientific evidence of the link between gender based violence and HIV risk behavior. Specifically, it contributes to understanding the possible link between women's experience of gender based violence and their inconsistent use of condoms. It also contributes to the understanding of the possible link between gender based violence and sexual partner concurrency among ever-married women. The study further highlights the need for interventions that will discourage any form of gender based violence against women as a strategy to reduce HIV risk behavior among and consequently the prevalence of HIV/AIDS among this group.

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Chapter 1: Introduction

1.1 Background

Africa is home to nearly 70% of people living with HIV in the world of which, two out of three of the estimated 6000 new infections that occur globally each day, are attributed to women in the sub-Saharan Africa (Kharsany and Karim, 2016). In 2015, the international community agreed upon new sustainable development goals (SDGs), which include a target to end the AIDS epidemic by 2030. There has also been a growing international interest over the past decade on the issue of gender based violence and how it affects the risk of acquiring HIV (MacQuarrie et al., 2013).

Researchers (Barros et al al., 2011 and El-Bassel et al., 2007) have shown that gender based violence is inextricably linked to HIV/AIDS. Furthermore, it not only holds potential to reverse the great achievements that have been attained in the fight against the HIV scourge thus far but also holds the potential to thwart these optimistic goals.

Zambian women are currently faced with these two major public health problems, HIV/AIDS and gender based violence. A study conducted by MacQuarrie (2013) on five sub-Saharan African countries found that, women's reported lifetime experience of any spousal physical violence ranged from 20 percent in Malawi to 54 percent in Rwanda, about one-third of women in Kenya, Rwanda and Zimbabwe and nearly half of women in Zambia. A study conducted by the Zambian National AIDS Council (2014) also concluded that, unprotected heterosexual sex drives the Zambian HIV epidemic, with 90% of new infections recorded as a result of not using a condom.

Research on the determinants of condom use (Benefo, 2010) or none use (Pinchoff, 2017) in Zambia has centered on issues of access, interpersonal communication concerning HIV/AIDS as well as a "myriad of social and structural barriers" such as "stigma around promiscuity, religion and a lack of knowledge regarding condom use" to the utter neglect of the aspect of gender based violence as a deterrent to the consistent use of condoms by women.

Multiple concurrent partnerships are also common place in the patriarchal society of Zambia, heightening the risk of HIV to all involved yet, according to Adimora et al., (2011), sexual partner concurrency among women has received considerably less attention in HIV related studies. This may have been partly due to the fact that both point prevalence and cumulative

prevalence of concurrent sexual partners are new concepts that have only just been incorporated for the first time in the 2013-14 ZDHS.

It is imperative that the question as to the "drivers" of the epidemic is answered. However, research has pointed out to differing conclusions in this matter. According to Epstein et al., (2011), the Joint United Nations Programme on HIV/AIDS and the Southern African Development Community in 2006 came to the conclusion that indeed the epidemic in Southern Africa is driven by non-condom use and sexual partner concurrency in addition to the low rates of male circumcision. The question that this research seeks to answer is whether gender based violence could be influencing inconsistent condom use and sexual partner concurrency among Zambian Women of child bearing ages (15-49).

1.1.1 Structure of the report

This report is structured such that Chapter 1 provides the background and introduction to the study, provides the problem and purpose statements, the research questions, objectives, study justification and definition of key terms. Chapter 2 provides the literature review, the theoretical and conceptual frameworks. Chapter 3 provides an explanation of the methodological approach adopted for this study in detail, focusing on the study population, sample size, data sources, and statistical analysis procedures employed in this study. The mainstay of Chapter 4 is presentation of the study results from the analysis, here, the findings are provided and these are discussed in detail in Chapter 5. The conclusion and recommendations of the study are provided in the last chapter, Chapter 6.

1.2 Problem statement

Zambia has one of the highest HIV prevalence rates within the sub-Saharan African Region (Tyler et al., 2016) approximated by the latest survey at 15% among women aged 15-49. According to the Zambia DHS, 2013-14, HIV prevalence is even higher among women who had concurrent partners (40 %) than among those who did not (34%). Nearly half of the women between the ages 15-49 have reported lifetime experience of any spousal physical violence in the Zambia DHS, 2007-08 and Zambia DHS, 2013-14, since age 15. The issues of gender based violence and HIV risk behavior are thus very key in the context of Zambia.

Unprotected heterosexual sex is considered one of the major drivers of the Zambian HIV epidemic with 90% of new infections recorded, resulting from not using a condom either with a casual partner or long-standing partner or concurrent partners (Zambian National AIDS Council, 2014). Further perpetuating the HIV/AIDS scourge is the prevailing overlapping sexual partner concurrency that is also becoming a norm and is estimated at 1.6% in the Zambia DHS, 2007.

Zambian women are not only still disproportionately affected by the epidemic but, are constantly exposed to gender based violence that can potentially force them to engage in these and other HIV risk behaviors and leave them unable to protect themselves from the HIV/AIDS scourge. Gender based violence is a public health problem that is associated with physical, reproductive and mental health consequences (Uthman et al., 2009). Sexually transmitted infections, urinary tract infection, unplanned pregnancies and infertility (Coker, 2007) emanating from the experience of violence, further exacerbate the plight of abused women. This, from a demographic perspective is very fundamental as gender based violence poses detrimental consequences on the health of its victims.

Further exacerbating the predicament of Zambian women is the fact noted by Gari et al., (2013) which suggests that, the women have practically no ability to refuse sex nor to demand the use of condoms. However, the gap found in previous research (Gari et al., 2013; Ramjee and Daniels, 2013) conducted on this population was that, it has not adequately addressed the issue of how gender based violence is associated with HIV risk behaviors particularly with regards to women's sexual partner concurrency and inconsistent condom use, but has instead focused on gender based violence in relation to the fear of HIV testing and uptake of HIV prevention, care and treatment services (Gari et al., 2013), gender based

violence and women's HIV status (MacQuarrie et al., 2013) to the utter neglect of this critical aspect to the HIV/AIDS problem.

It is hoped that this research will close this gap in the context of Zambia and contribute to future policy decision making on issues relating to women, gender based violence and HIV/AIDS and further contribute to the public health and social and behavioral interventions targeting HIV risk behavior change.

Past research (Weiss et al., 2016) has shown that, women who experience Intimate partner violence report higher rates of HIV-risk behavior. Hence, if the epidemic is to be halted, it would be detrimental to ignore the issues of sexual partner concurrency, inconsistent condom use and gender based violence as these are vital components of HIV prevention strategies.

1.3 Purpose Statement

The purpose of this cross-sectional study was to examine the relationship between gender based violence and HIV risk behaviors among ever-married women of child bearing ages (15-49) in Zambia. This research was guided by and used the variables and constructs proposed in the theory of Gender and Power (Connell, 1987) in the examination of this relationship. The research addressed the issue of HIV risk behavior with special attention to sexual partner concurrency and inconsistent condom use. Specifically, in this work, the research looked at gender based violence (Sexual, Physical and Emotional) and HIV risk behavior in the context of Zambia in order to show the association between these two constructs. The study tested the hypothesis that, there is no association between gender based violence and HIV risk behavior among women of child bearing ages in Zambia.

1.4 Research Questions

1.4.1 General Research Question

What is the relationship between gender based violence and HIV risk behavior among ever-married women of child bearing ages (15-49) in Zambia?

1.4.2 Specific Research Questions

i. What is the prevalence of gender based violence, inconsistent condom use and sexual partner concurrency among ever-married Zambian women of child bearing ages (15-49).
ii. What is the relationship between ever-married Zambian women of child bearing ages' HIV risk behaviors and their economic, physical exposures, demographic, personal and behavioral risk factors to such behavior?
iii. What is the association between gender based violence and HIV risk behaviors; - sexual partner concurrency and inconsistent condom use?

1.5 Research Objectives

1.5.1 General Objective

The overall objective was to establish the extent to which gender based violence is associated with HIV risk behaviors; inconsistent condom use and sexual partner concurrency among ever-married Zambian women of child bearing ages (15-49).

1.5.2 Specific-Objectives

The specific objectives of this study were three fold and they were:-

i. To estimate the prevalence of gender based violence, inconsistent condom use and sexual partner concurrency among ever-married Zambian women of child bearing ages (15-49).
ii. To examine the relationship between ever-married Zambian women of child bearing ages' HIV risk behaviors and their economic, physical exposures, demographic, personal and behavioral risk factors to such behavior.
iii. To examine the association between gender based violence and HIV risk behaviors: - inconsistent condom use and sexual partner concurrency among ever-married Zambian women of child bearing ages (15-49).

1.6 Justification of Study

Attending to the issue of women's HIV risk behavior particularly with regards to their inconsistent condom use and their sexual partner concurrency is critical in addressing the public health problem; HIV/AIDS. The Revised Zambia National HIV/AIDS strategic framework (R-NASF) 2014-2016, lists multiple and concurrent partnerships as well as low and inconsistent use of condoms as priority focus areas amongst others. This study therefore seeks to contribute to Government's interventions (programmes) and policies targeted at sexual behavioral change by providing empirical and scientific evidence of the link between gender based violence and HIV risk behavior.

Secondly, in 2015, the international community agreed upon new sustainable development goals (SDGs), which include a target to end the AIDS epidemic by 2030. If this goal is to be attained, then addressing the issue of gender based violence particularly in the sub-Saharan Africa Region is very crucial.

Lastly, Zambia is signatory on several of protocols protecting women from gender based inequalities and has even established a Ministry of Gender and Development in order to address the many problems facing women. It is hoped that the findings of this research shall contribute to future policy decision making on issues relating to women, gender based violence and HIV/AIDS as well as to public health and social and behavioral interventions targeting HIV risk behavior change.

1.7 Definition of terms

1.7.1 Gender Based Violence

Gender based violence for the purpose of this research has been defined as, any act that results in, or is likely to result in, physical, sexual or psychological harm or suffering among women, including threats of such acts and coercion or arbitrary deprivations of liberty, whether occurring in public or private life. This research has used the terms gender based violence and intimate partner violence interchangeably.

1.7.2 HIV risk behavior

Women's HIV risk behavior in this study has been defined by two indicators; - inconsistent condom use and concurrent sexual partnerships.

1.7.2.1 Inconsistent condom use

For purposes of this study, inconsistent condom use refers to, not using a condom every time when having sex with the most recent sexual partner in the 12 months preceding the survey.

1.7.2.2 Concurrent sexual partners

Concurrent sexual partners has been defined as having overlapping sexual partnerships during the 12 months preceding the survey where, overlapping sexual partnerships are those in which an individual has had sexual intercourse with one partner between two acts of intercourse with another partner. This type is also referred to as, cumulative prevalence of concurrency

1.7.2.3 Physical exposures

Physical exposures, for the purpose of this research, have been defined as, women having a history of gender based violence, be it, physical, sexual or emotional violence.

1.7.2.4 Personal and behavioral risk factors

Personal and behavioral risk factors have been defined for the purpose of this study as, women with limited self-efficacy to avoid HIV (inability to negotiate the use of condoms, inability to refuse sex) negative attitudes towards wife beating, engaging in higher risk sex as well as women's self-perceived vulnerability to HIV/AIDS.

Chapter 2: Literature Review, Theory and Conceptual Framework

2.0 Introduction

HIV risk behavior mediates the relationship between gender based violence and HIV/AIDS. The purpose of this review is to; (1) review what has been learned about the relationship between gender based violence (as a potential driver of HIV/AIDS) and HIV risk behaviors, (2) to identify and highlight gaps in knowledge and most importantly, (3) provide a foundation for the conceptual framework of this research as well as emphasize the importance of this study in the context of Zambian women of child bearing age (15-49). Both the Theoretical and Conceptual frameworks for assessing the relationship between gender based violence and HIV risk behaviors are provided and outlined.

2.1 Literature Review

Previous studies in Zambia have looked at women's sexual behaviors such as multiple sexual partners and risky sex with a non-marital or non-cohabiting partner (Odimegwu et al., 2016). Others, determinants of condom use (Benefo, 2010) and none use (Pinchoff, 2017). Others have looked at socio-demographic characteristics associated with intimate partner violence among Zambian women aged 15-49 (Simona et al., 2015) others, the quality of relationship and sexual risk behavior (Vamos et al., 2013) as well as, prevalence and correlates of concurrent sexual partnerships (Sandøy et al., 2010). This study seeks to add to this debate on HIV/AIDS in the context of Zambia, another aspect; the inextricable association between gender based violence and HIV risk behavior among ever-married women of children bearing age group 15-49 particularly with regards to their consistent condom use and sexual partner concurrency.

2.1.1 Prevalence of gender based violence, inconsistent condom use and sexual partner concurrency

The prevalence of physical intimate partner violence in Africa ranges from 13% in Zimbabwe to 45% in Ethiopia (Okenwa, 2016). According to the 2007 Demographic and Health Survey of Zambia (ZDHS), 43% of women between the ages, 15-49 had experienced physical violence at least once since age 15 and an overall, 47 percent of ever-married women aged 15-49 had reported ever having experienced sexual, physical and emotional violence from their current or most recent husband or partner.

HIV/AIDS in Zambia was first diagnosed in the year 1984. Today, Zambia has one of the highest HIV prevalence rates within the sub-Saharan Africa Region (Tyler et al., 2016 and Vamos et al., 2013) approximated at 16% among those aged 15-49 (Benefo, 2010). This is however a significant improvement from the past estimates. Using population-based data from the 2001-2002 Demographic and Health Survey (ZDHS) on heterosexual behavior of 1739 women and 540 men in Zambia, Dunkle et al., (2008) estimated new heterosexually acquired HIV infections among adults in urban Zambia at 55.1%. These had occurred within marital and cohabiting relationships.

According to the 2013/14 ZDHS, only 29% of men and women in the ages 15-49 who had more than one sexual partner in the past year had used a condom the last time they had sex. The results also showed that, 43% of women between the ages 15-49 had experienced physical violence at least once since age 15 and an overall, 47% of ever married women in the same age group had reported having experienced sexual, physical and emotional violence from their current or most recent husband or partner.

The results of the 2013-14 ZDHS show multiple sexual concurrency to be prevalent among all sexually active groups. Among women, its prevalence proved highest among those who had two or more sexual partners in the year prior to the survey as well as those who had engaged in concurrent sexual partnerships compared to those who had not. HIV prevalence was also found to be high (39.8%) among the 15-49 age group of women engaged in sexual partner concurrency.

2.1.2 Physical, Sexual and Emotional violence by level of effect on HIV risk behavior

Key in dealing with interventions targeted towards gender based violence is establishing exactly which forms of violence have the strongest effect on HIV risk behavior. A Cross Sectional Survey study of five sub-Saharan Africa countries; Zambia, Zimbabwe, Malawi, Rwanda and Kenya carried out by MacQuarrie et al., (2013) that focused on the relationship between spousal violence (controlling behaviors, physical, emotional and sexual) and HIV found that, whilst there was a significant positive association between multiple forms of violence, no single form of spousal violence was associated with women's HIV status in these five countries. In Zimbabwe, Rwanda and Kenya, the significant forms of violence associated with wife's HIV status were emotional and physical violence. In Malawi, no form of violence was associated with the wife's risk of having HIV. For Zambian women, a

significant association was found with their HIV status for the controlling behaviors, suspicion and isolation. No association in any country was found for sexual violence.

This study whilst it looked at the association between spousal violence and HIV with a consideration of HIV risk factors, it focused on mainly the husband rather than the woman. Secondly, the behavioral factors under investigation were; lifetime number of sexual partners, husband's non-marital sex, having paid for sex; alcohol use and husband's HIV status. Data collected from women was only on lifetime number of sexual partners. The current study focuses on women and their sexual partner concurrency as well as their condom use behavior.

Manfrin (2015), in a study of African American women of child bearing ages that used the theory of Gender and Power in establishing the relationship between IPV and women's powerlessness, found that participants who had experienced emotional or physical abuse by their partners were at risk of HIV infection.

2.1.3 Gender based violence and HIV risk behavior

Research from studies conducted among African American women has shown that intimate partner violence is strongly associated with HIV risk behavior; non-condom use and sexual partner concurrency (Weiss et al., 2016; Mittal et al., 2013 and El-Bassel et al., 2007. A systematic review of literature carried out by Coker et al., (2007) also found that 23 of 27 Global Studies had found significant positive association between IPV and women's HIV risk behavior indicating a strong consistent evidence that physical IPV affects sexual risk taking behaviors (Coker et al., 2007).

It is therefore imperative that research continues beyond the question of what perpetuates the act of violence against women to the question of how this gender based violence impacts on women's sexual behavior. Previous studies conducted in Malawi and Zambia (Oluwaseyi & Ibisomi, 2015) and Cameroon, Kenya, Rwanda, Uganda and Zimbabwe (Alio et al., 2011) have focused on the relationship between IPV and contraceptive behavior of which condom use was considered as a modern method of contraception rather than a preventative method against HIV/AIDS. Closer to this current study is one cohort study of 921 women conducted in Rwanda (Straten et al., 1998) that examined sexual coercion, physical violence, and HIV infection among women in steady relationships in Kigali. One third of the women in this study had experienced sexual coercion and 21% had experienced physical violence perpetrated by their male partners. Women's HIV positive status was associated with sexual coercion.

2.1.4 Inconsistent condom use

Literature has shown that, women in abusive relationships are more likely to have challenges in negotiating use of condoms (Weiss et al., 2016; Mittal et al., 2013 and Courtenay et al., 2010). Violence prevents them from influencing the circumstances of sex, resulting in more frequent sex, and less condom use (Jewkes et al., 2006). Furthermore, women cannot simply nor freely enact condom use because, condom use is embedded in their relationships with their partners (Altschuler et al., 2015 and Dworkin & Ehrhardt, 2007).

One study from Ukraine confirms this. This study found that women whose sexual partners had physically abused them, whether in the recent or distant past, were significantly less likely to use condoms than women who had not been abused, even after controlling both, whether or not the respondents were aware that use of condoms could prevent HIV transmission (Dude, 2007) cited in (Shabnam 2017, p. 28). Contrary to these findings however, Amina et al., (2009) in a study in New Zealand found increased use of condoms among women who had experienced intimate partner violence.

2.1.5 Sexual Partner Concurrency

Concurrent sexual partner relationships are quiet common in Zambia and cut across geographical boundaries, age, sex and marital status (Underwood et al., 2010). Using data collected during the Sexual Behavior Surveys 1998, 2000, and 2003, Sandøy et al., (2010) examined how the prevalence of parallel relationships changed among men and women aged 15-49 in Zambia from 1998 to 2003. Among the women, the proportion that reported concurrent relationships was 0-2% which was significantly lower in comparison to the 13% of rural and 8% of urban men who had reported more than one ongoing relationship in 1998. This study found that the most important predictors of concurrency were, early sexual debut, being married, early marriage and absence from home. This current study proposes that, gender based violence is also potentially an important predictor of sexual partner concurrency among Zambian women.

A qualitative study on concurrent sexual partnerships in Zambia conducted by Underwood, (2010) concluded that, women are motivated by structural causes specifically poverty to enter such relationships, they tend to expect financial or material gain whilst men use money to attract women into these relationships. This study also found that for women involved in sexual partner concurrency, it usually their partners who determine whether and when condoms are used.

Another qualitative study in the context of Zambia conducted between 2009 and 2010 on sexual partner concurrency explored the social, cultural and behavioral factors that contribute to concurrency in Zambia (National AIDS Counsel of Zambia, 2010) to the utter neglect of the aspect, gender based violence. Klein et al., (2007), in a Cross Sectional Survey study of Uganda, Zambia and Zimbabwe that focused on the role of gender, economic status and migration concluded that, violence may limit a woman's ability to refuse sex and influence her engagement in concurrent sex.

2.2 Summary of Literature Review

The researcher has made an attempt at fully incorporating the theoretical framework as proposed by the theory of Gender and Power in structuring this review. The reviewed literature shows that indeed sexual partner concurrency and non-condom use are serious matters in the HIV/AIDS agenda. Whilst these studies have undoubtedly given depth to the problem., the gap found in this literature was that, most of the reviewed literature was either from studies conducted outside the sub-Saharan Africa (Shabnam, 2017, Adimora et al., 2011, Dworkin, S. & Ehrhardt, 2007) or, on HIV/AIDS (Kharsany and Karim, 2016, Tyler et al., 2016, Gari, et al., 2013, Fonck, et al., 2005) and gender based violence (Weiss et al., 2016, Mittal et al., 2013, Uthman et al., 2009, Coker, 2007, El-Bassel et al., 2007) to the utter neglect of the aspect of HIV risk behavior. Other research was on HIV risk behavior but had no link to gender based violence a perpetuator of this behavior.

One closest study to this one that the researcher found was one by Straten et al., (1998) that looked at condom negotiation, refusal to have sex and other variables as predictors of physical violence and sexual coercion in Kigali, Rwanda. The current study looks at physical, sexual and emotional violence as predictors of HIV risk behavior as defined by non-condom use and sexual partner concurrency among Zambian women of child bearing ages (15-49).

This study is therefore, more of an extension to these previous studies as it adds to the already existing knowledge about gender based violence as well as to knowledge about the different types of HIV risk behavior. It seeks to add to this debate, the dimension of how the experience of gender based violence by Zambian women in turn shapes their HIV risk behaviors particularly, their non-condom use as well as their sexual partner concurring using the theory of Gender and Power.

2.3 Theory and Conceptual Framework

The theory of gender and power satisfactorily proposes the relationship between gender based violence and HIV risk behaviour. This research employed this theory in examining this relationship. Developed by Robert Connell (1987), the Theory of Gender and Power, is a social structural theory based on existing philosophical writings of sexual inequality as well as gender and power inequality.

Application of the theory allowed for the assessment of women's physical, socio-economic exposures as well as their personal and behavioural risk factors to HIV risk behaviour. The theory proposes three social structures that characterize the gendered relationships between men and women. These are the; - sexual division of labour, sexual division of power and the structure of cathexis. These are said to interact to adversely affect women's health. Ideally, the ultimate outcome in the conceptual framework therefore ought to be, women's HIV status and not HIV risk behaviour. Employing the variables of this theory however still proved useful in understanding how all these constructs interact to affect women's HIV risk behaviour.

The sexual division of labor refers to the differential allocation of certain occupations to women and men. According to Connell (1987), the division of labor in the kinds of jobs that women and men hold outside the home have roots in the conventional images of man as "bread winner" and woman as "home maker." The delegated responsibilities of women's tend to be "inferior," 'subservient', unpaid or less paid as compared to that of men. The inequality resulting from the social mechanisms that occur within this structure are unfortunately, manifested as economic exposures and socio-economic risk factors to HIV risk behavior for women.

The other socio-economic exposures and risk factors that influence a woman's HIV risk behavior include; living in poverty and having a less than high school education. Under such circumstances, for women, negotiating for safer sex thus comes with the social costs of such negotiations. This lives women susceptible to sexual and other exploitation, renders them disadvantaged and hence vulnerable to HIV risk behavior.

The sexual division of power is another fundament structure in this theory. It is manifested as imbalances in, control, advantages and resources not only in the work place and community, but in relationships as well. Focus of this study was on intimate partner relationships where the sexual division of power involves power dynamics and abuse by the spouse in authority.

Women in these power imbalanced relationships are said to tend to depend on their male partner for financial sustenance. This "power" often constitutes sexual, physical and emotional violence.

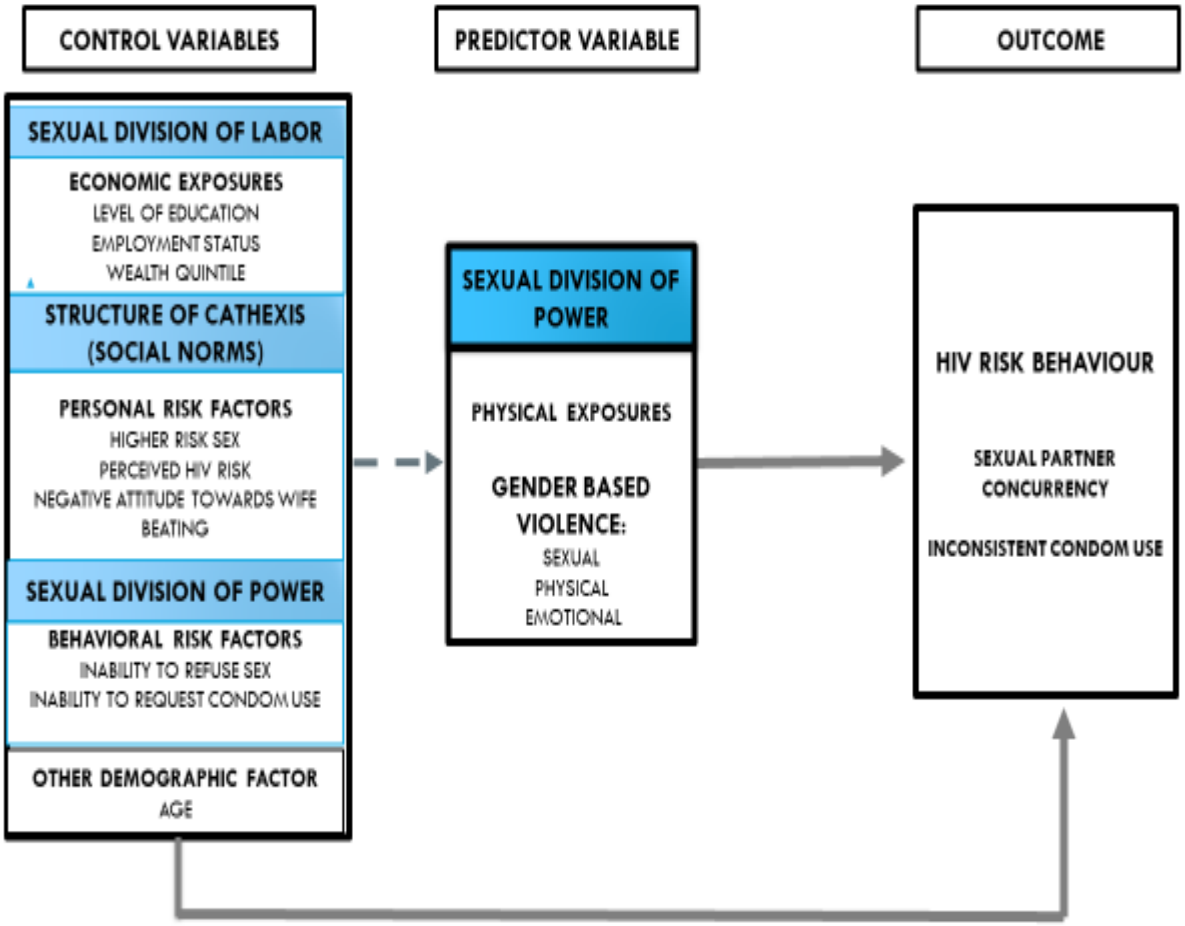
The theory postulates that, women having more adverse physical exposures (for instance, having a history of being abused) and behavioural risk factors (such as lower self-efficacy to avoid HIV through for instance, inability to refuse sex or having limited perceived control over condom use) will be more burdened by the sexual division of power compared to women not having these exposures and risk factors.

The structure of cathexis refers to the effective attachments and social norms that lead to affective personal risk, behavioral risk and knowledge based personal risk. These affective attachments and social norms manifest in peer norms not supportive of positive behavior. These could be negative beliefs not supportive of safer sex or women's perceived invulnerability to HIV/AIDS. In this study, focus on the structure of cathexis, was on women's negative attitudes towards wife beating if she refused to have sex with her husband and perceived HIV risk.

Figure 1 below is the conceptual framework adapted from the theory of gender and power in order to illustrate the relationship between gender based violence and HIV risk behavior as well as the pathways through which economic and physical exposures, demographic, personal and physical risk factors are interlinked to HIV risk behavior.

The conceptual framework sought to illustrate the pathways through which the constructs as proposed by the theory; - sexual division of labor, structure of social cathexis (social norms) and the sexual division of power interlink to influence HIV risk behavior. The bold lines indicate the direct relationship between the variables that were explored in this study. The dotted lines indicate the relationship between gender based violence and the economic and physical exposures, demographic, personal and behavioral risk factors (This study has not explored this relationship).

Figure 1: Conceptual Framework for the study of GBV and HIV risk behaviors



Source: Adapted from the Theory of Gender and Power (Connell, 1987)

The economic and physical exposures, demographic, personal and behavioral risk factors are conceptualized in figure 1 above as variables and constructs. Economic exposures have been defined in the theory of gender and power to include women who live at the poverty level, women with less than a high school education as well as those that are unemployed. These economic exposures have been found to be associated with HIV risk behavior. Gupta et al., (2002) in their study concluded that, women's economic dependence on men increases their vulnerability to STIs by constraining their ability to negotiate the use of condoms, discuss fidelity with their partners or leave a risky relationship.

Consistent with this conclusion was another multi-level analysis study that used the Ecological model, conducted by Uchudi et al., (2010) that looked at the determinants of high

risk behavior (multiple sexual partners) in sub-Saharan Africa. Uchudi et al., (2010) concluded that women were more vulnerable to HIV/AIDS than men because they are usually less educated and have no financial resources that would allow them to negotiate safer sexual relationships with men. Contrary to these findings, Kanyon (2015) using data from 1989-1990, from 11 countries in their analysis of the association between point-prevalence of concurrency in 15-49 males and various indicators of socio-economic status and gender equity found no meaningful association between concurrency and the various markers of socio-economic status.

Physical exposures as illustrated in figure 1 have been defined as women having a history of gender based violence, be it, physical, sexual or emotional violence. Multiple studies (MacQuarrie et al., 2013; Swan and O'Connell 2011 and Woolf et al., 2008) on women have demonstrated a negative association between the physical exposures and women's HIV risk behavior. Woolf et al., (2008) in their study that focused on the sexual division of power in the theory of gender and power looked at how women's ability to engage in safe sex behavior, through the use of condoms, is compromised by being in a situation of unequal power. The study concluded that, women's self-efficacy for condom use negotiation is diminished when she lacks the power to act or change a sexual situation and unsafe sexual behavior is more likely to occur.

In line with this conclusion, another study using a sample of incarcerated women in the USA examined the association between women's experience of violence and condom negotiation efficacy, and found that women who had experienced violence had significantly lower confidence to negotiate condom use with a partner (Swan and O'Connell 2011) cited in MacQuarrie et al., 2013).

Women's personal and behavioral risk factors have also been correlated with HIV risk behavior. As illustrated in figure 1, personal and behavioral risk factors have been defined as women with limited self-efficacy to avoid HIV (inability to negotiate the use of condoms, inability to refuse sex) negative attitudes towards wife beating, engaging in higher risk sex as well as women's self-perceived vulnerability to HIV/AIDS.

A longitudinal study among 192 sex workers conducted in Madagascar that assessed the association between measures of perceived condom use control and self-reported use of male condoms found that a lack of perceived control over condom use with a main partner and

having a main partner ever refuse to use a condom when asked were both associated with an increased number of sex acts unprotected by condoms. (Pettifor et al., 2010).

According to Uchudi et al., (2010), people's attitudes towards high risk sex are determined by the sexual norms that regulate sexual behaviors before, during and after marriage in which they live. Jesmin et al., (2014) examined married women's safer-sex negotiation attitudes in Bangladesh using data on 15,178 currently married women aged 15–49 from the 2011 Bangladesh Demographic Health Survey and found that, 92% of the women, believed that a wife's refusal to have sex with her husband is justified if he has an STI. The recent ZDHS results show that, 65% of women and 72% of men age 15-49 believe that a wife is justified in refusing to have sexual intercourse with her husband if she knows he has sex with other women. In addition, 82 % of women and 88% of men believe that a woman has a right to ask her husband to use a condom if she knows that he has an STI.

The theory of gender and power and the constructs it proposed in conjunction with the conceptual framework, framed and provided guidance for this study.

2.4 Hypotheses

The first hypothesis tested was;-

H_0: There is no relationship between Gender based violence and inconsistent condom Use

H_1: There is a relationship between Gender based violence and inconsistent condom Use

Significance level: α=0.05

The second hypothesis be tested was;-

H_0: There is no association between Gender based violence and sexual partner concurrency.

H_1: There is association between Gender based violence and sexual partner concurrency

Significance level: α=0.05

Chapter 3: Methodology

3.0 Introduction

This chapter provides the methodological approach adopted for this study in detail, focusing on the study population, sample size, data sources, and statistical analysis procedures employed in this study.

3.1 Study Population and sample size

The initial population in the survey consisted of 11,778 Zambian women in the age group 15-49 who had been selected and were eventually interviewed for the domestic violence module. For purposes of this study however, Zambian women in this age group who had reported to have never been in a union were dropped. The final weighted sample size used for the analysis was therefore 6, 125 ever-married women aged 15-49 who had participated in the domestic violence module and had reported on their sexual relationships during the twelve months preceding the survey. These are women who responded to questions on consistent condom use, cumulative sexual partner concurrency and all the questions on gender based violence.

3.2 Data Source and study design

This is quantitative study that is a secondary analysis of the Zambian 2013-14 Demographic and Health Survey (ZDHS) which used a two-stage stratified cluster sample design which was designed to provide estimates at the national and provincial levels, as well as for rural and urban areas within the provinces. In addition to the women's questionnaire, a sub-sample of one eligible woman in each household was randomly selected and asked additional questions about domestic violence. Women, who qualified as eligible, were those aged 15-49 years who were either permanent residents of selected households or visitors in the household the night before enumeration. The point prevalence and cumulative prevalence of concurrent sexual partners are new concepts that were incorporated for the first time in the 2013-14 ZDHS.

The Zambian 2013-14 Survey in addition to data on self-reported cumulative concurrent sexual partners also collected a set of self-reported data related to consistent condom use.

3.3 Variable descriptions

3.3.1 Dependent variables

The outcome variable is HIV risk behaviour which was measured using inconsistent condom use over the 12 months prior to the survey and cumulative concurrent sexual partners. These two indicators were chosen because the researcher felt that they have the most significant influence on HIV/AIDS transmission. They were also chosen based on previous studies and guided by the study's conceptual framework.

3.3.1.1 Inconsistent condom use

Inconsistent condom use as an indicator of HIV risk behaviour was deduced from the question "was a condom used every time you had sexual intercourse with this person in the last 12 months?" This question was asked for each of the last three partners in the year prior to the survey. Condom used (yes = 1 and no = 2) is a dichotomous response variable defined as self-report of having consistently used a condom or not with a sexual partner in the year preceding the survey.

Respondents who did not respond to the question of consistent condom use with every sexual partner in the past 12 months prior to the survey for purposes of analysis in this current study were considered as having not consistently used a condom during this period.

3.3.1.2 Sexual Partner Concurrency

Sexual partner concurrency was determined from the questions; - "Apart from this person, have you had sexual intercourse with any other person in the last 12 months?" If the respondent responded 'yes' then she was asked, "When was the last time you had sexual intercourse with this person?" To this question she could respond, 'days ago', weeks ago' or 'month ago'. All these responses were considered as admitting to having engaged in a concurrent sexual partnership in the 12 months preceding the survey. Sexual partner concurrency (yes = 1 and no = 2) was thus a dichotomous response variable defined as self-report of having or not having a concurrent sexual partner relationship in the year preceding the survey.

Respondents, who could not prove concurrency as indicated by the reported timing of occurrence in the relationships mentioned, were considered as having not been in a concurrent sexual partner relationship in the 12 months prior to the survey.

3.3.2 Independent variables

Gender based violence was the primary independent variable in this study. Gender based violence in this study refers to the experience of either Physical violence, Sexual violence or Emotional violence.

3.3.2.1 Gender based violence

The experience of gender based violence by the most current husband/partner for currently married women and the most recent husband/partner for formerly married women was ascertained and measured from their responses to the domestic violence module interview. The following set of questions had been asked. Does or did your (last) husband or partner ever; - push you, shake you, or throw something at you? Slap you? Twist your arm or pull your hair? Punch you with his fist or with something that could hurt you? Kick you, drag you, or beat you up? Try to choke you or burn you on purpose? Attack you with a knife, gun, or any other weapon? A 'yes' answer to one or more of items above constituted evidence of physical violence.

In determining experience of sexual violence, women were asked: - does or did your (last) husband or partner ever physically force you to have sexual intercourse with him even when you did not want to? Or force you to perform any sexual acts you did not want to? A 'yes' response to these questions constituted evidence of sexual violence.

In determining the experience of emotional violence among ever-married women, the survey question asked was: - Does or did your (last) husband or partner ever say or do something to humiliate you in front of others? Threaten to hurt or harm you or someone close to you? Insult you or make you feel bad about yourself? Similarly, a 'yes' answer to these questions constituted evidence of emotional violence.

Lastly, for purposes of multivariate level of analysis, physical, sexual and emotional violence were merged into one variable, gender based violence (GBV) using the same method as used for the different types of gender based violence (GBV). If the respondent had responded "yes" to any form of abuse then the "gender-based violence (GBV) variable was coded as "yes" however, where the response was "no" to any form of violence then it was coded as "no" for the GBV variable.

For every question that a woman answered ‘yes,’ she was asked about the frequency of the act in the 12 months preceding the survey.

3.3.2.2 Other explanatory variables

Based on the Theory of Gender and Power and on the study’s Conceptual framework (Figure 1), in addition to the experience of gender based violence, nine other potential predictors of HIV risk behaviour were identified: - Highest level of education, woman’s employment status, wealth quintile, woman’s age, attitude towards wife beating, ability to request condom use, ability to refuse sex, woman’s perception of own HIV risk and High risk sex.

Women’s level of education was ascertained from the question: - what is the highest level of school you have attended? Responses could either be, nursery or kindergarten, primary, secondary, higher or don’t know. For purposes of this study, nursery education was recoded as no education. Primary, secondary and higher levels of education were not recoded. Those who reported ‘don’t know’ were dropped from the sample.

Women’s employment was determined from the question; - have you done any work in the last 12 months? The responses were dichotomous, “no” and “yes”. Women’s wealth was determined from their reported wealth index; - poorest, poorer, middle, richer and richest. These variables were recoded such that poorest and poorer were merged to be poor. Middle quintile remained as was, and the richer and richest quintiles were merged to come up with the ‘rich’ quintile.

In order to ascertain the influence of age on HIV risk behaviour, the age of the ever-married women was initially taken as it was in its continuous form from 15 to 49. Women were then categorised into two groups. Those 18 and under the age of 18 and those whose ages were older than 18 this was applied taken from, the theory of Gender and Power.

Higher risk sex (sex with a non-marital, non-cohabiting partner) was determined from the question; “What was your relationship to this person with whom you had sexual intercourse?” If the woman responded, ‘husband’ or ‘live-in partner’ for purposes of this study this was considered as non-higher risk sex. However, if she responded that this relationship was; - ‘boyfriend not living with her’, ‘casual acquaintance’, ‘client/sex worker’ and ‘other’, she was considered to have engaged in higher risk sex.

Women’s attitude towards wife beating was examined using the question as to whether a husband was justified in hitting or beating his wife if she refuses to have sex with him.

Women could respond, ‘yes’, ‘no’ or ‘don’t know’. For purposes of this study, women who responded don’t know’ (1.3%) were dropped from the sample. Women with missing data for this question (0.05%) were also dropped from the study sample.

Women’s ability to refuse sex was ascertained from the question; - “can the respondent refuse sex?” Women’s perceived control over condom use was determined from the question; - can the respondent ask partner to use a condom? For purposes of this study the responses to these questions were left to be dichotomous; - yes or no and those women who responded ‘don’t know’ (1.7%) to ability to refuse sex and ability to request condom use (1.6%) were dropped from the sample. women with missing data on the responses to the question of ability to refuse sex (15.5%) and to the question on the ability to request condom usage (0.01%) were dropped from the study population sample.

For the purpose of assessing the association between women’s perceived HIV risk and their HIV risk behaviour, the women were asked on their perceived risk of getting infected with HIV. The responses were; - ‘no risk’, ‘low’, ‘medium’, ‘high’, ‘other’ and ‘don’t know’. Women who perceived themselves at no risk or low risk for purposes of this study were recoded as ‘low’ risk. Women who reported ‘medium’ and ‘high risk’ were not recoded but left as they were. Those whose reported ‘other’ and ‘don’t know’ were merged and recoded into ‘don’t know’. Missing responses (0.54%) were also dropped from the study population sample.

3.4 Statistical Analysis

Data analysis was conducted using Stata version 12.1 (StataCorp, 2011). It was conducted at three levels; - Univariate, bivariate and multivariate level. At the univariate level, descriptive statistics were used to analyze each independent variable at a time. This level of analysis addressed the first objective which was to obtain the prevalence of gender based violence, inconsistent condom use and sexual partner concurrency among ever-married Zambian women of child bearing ages.

At the bivariate level, binary logistic regression was employed to analyze the data. Unadjusted odds ratios showed the independent effect of gender based violence as the primary independent variable, as well as that of other predictor variables proposed in the theory of gender and power (economic and physical exposures, demographic, behavioral and personal risk factors) when modeled with the outcome variables; - cumulative concurrent sexual partners and inconsistent condom use.

The strength of the associations was assessed using odds ratios (ORs) and the 95% confidence intervals (Cls) for significance testing. This stage addressed the second objective which was to examine the relationship between ever-married Zambian women of child bearing ages' HIV risk behavior and their economic and physical exposures, demographic, behavioral and personal risk factors to such behavior.

In order to address the third study objective; multivariate analysis was carried out also using binary logistic regression. The multivariate binary Logistic Regression model was employed in this last stage of the analysis in order to study the association between gender based violence and HIV risk behavior whilst controlling for the other selected independent variables. Again, the strength of the associations was assessed using odds ratios (ORs) and the 95% confidence intervals (Cls) for significance testing.

An odds ratio of 1 meant there was no difference, an odds ratio greater than 1 meant either that the woman was more likely to have inconsistently used a condom in the first model or report having been in a concurrent sexual partner relationship in the 12 months preceding the survey in the second model. Similarly, an odds ratio less than 1 meant that the odds of a woman inconsistently using condoms were less likely in the first model and that the odds of a woman reporting being involved in a concurrent sexual partnership were less likely in the second model.

The Binary logistic regression model is used where the outcome is dichotomous. It was used for the analysis of inconsistent condom use and cumulative sexual partner concurrency because these variables are dichotomous outcomes. The model assumes that the error term follows a binomial distribution, the independent variables do not have a high degree of collinearity with one another and that alternate outcome and intervening variables are not included as explanatory variables. The basic binary logistic regression equation used was:-

$$\ln (p_i/1-p_i) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 \ldots + \beta_p x_p$$

Where:

β_0	= Constant
βn	= Regression coefficients
x_1, x_2, x_3	= Independent variables
P_i	= Probability of occurrence of HIV risk behavior and;
$1-p_i$	= Probability of non-occurrence of HIV risk behavior

In analysing the effect of gender based violence on HIV risk behaviour at the multivariate level of analysis, the study used four models. Model 1 looked at the relationship between gender based violence and inconsistent condom use, controlling for all other variables. Model 2 looked at the relationship between gender based violence and sexual partner concurrency, controlling for all other variables. Model 3 and 4 were additional models run in order to isolate the effect of marital status on HIV risk behaviour whilst controlling for all other variables.

3.5 Reliability and validity

This study used the 2013-14 Zambian Demographic and Health Survey (ZDHS). The Survey used especially constructed weights to adjust for the selection of only one woman per household and to ensure that the domestic violence subsample is nationally representative. For purposes of this study, the data set was checked for missing values and the variables further recoded. Sample weights throughout the analysis were applied and weighted using the command; - gen weight = d005/1000000 and svyset psu [pweight=weight], strata (v022) in order to account for undercounting and over counting due to the sample design of the survey.

Regression diagnostic procedures yielded no evidence of specification error in any of the models. The Stata command, linktest was used to detect specification error. The idea behind

linktest is that if the model is properly specified, one should not be able to find any additional predictors that are statistically significant except by chance. The _hatsq variables (p-value= 0.86 for inconsistent condom use and p-value = 0.79 for cumulative sexual partner concurrency) were not significant, this indicates that both models were properly specified with no omission of relevant variables. Hence there was no specification error. Using the Stata command, lfit, group(10) table yielded a p-value of 0.55 for the inconsistent condom use model and a p-value of 0.35 for the cumulative concurrent sexual partners model. The Hosmer and Lemeshows' goodness-of-fit test hence, indicated that both models fit the data well.

3.6 Ethical statement

This study was a secondary analysis of the 2013-14 ZDHS and as such, no ethical approval was required. The researcher registered and requested for access to data from the DHS on-line archive and received an approval to access and download the identified DHS data files. All guidelines, including treating the data as confidential and not making effort to identify individual respondents were respected.

Chapter 4: Results

4.0 Introduction

This chapter focuses on the illustration of the results of the descriptive, bivariate and multivariate levels of analysis. The analysis sought to answer three questions; - What is the prevalence of gender based violence, inconsistent condom use and sexual partner concurrency among ever-married Zambian women of child bearing ages? What is the relationship between ever-married Zambian women of child bearing ages' HIV risk behaviors and their economic, physical exposures, demographic, personal and behavioral risk factors to such behavior? And lastly, what is the association between gender based violence and HIV risk behaviors; - sexual partner concurrency and inconsistent condom use?

4.1 Univariate Analysis

The results from the univariate level of analysis are as shown in Table 1 and 2 as well as Figure 2 below. The tables illustrate the weighted number and distribution of ever-married women who participated in the domestic violence module of the 2013-14 ZDHS by their background characteristics. The study sample included 6, 125 (after weighting) ever-married Zambian women of child bearing ages (15-49).

Table 1 focuses on the distribution of ever-married Zambian women (15-49) by their economic and physical exposures, demographic, personal and behavioral risk factors to HIV risk behavior. By level of education, the majority (56%) which constituted 3,418 women included in the study population had attained primary school education, while 29% (1,795) had secondary education and only about 4% (256) had higher education. Women with no education at all, formed about 11% (656) of the study population. It can also be observed from Table 1 that, of the 6, 125 ever-married Zambian women included in this study, 44% (2,695) were unemployed.

In terms of their wealth status, the rich were the majority (41%), numbering 2,502. These were followed by those in the poor quintile (39%) and then those in the middle quintile accounted for about 20% (1,217) of the study population. Separating the women by whether they are 18 years and younger or older than 18 years led to the older group being the majority, 97% (5, 927) whilst those younger than the age of 18 represented only 3% (198) of the women under the study population.

Table 1: Percentage distribution of ever-married women (15-49) by background characteristics, Zambia 2013-14

Characteristic	Percent	N (N= 6,125)
Highest level of education		
No education	10.7	656
Primary	55.8	3,418
Secondary	29.3	1,795
Higher	4.2	256
Employment status		
Currently not working	44.0	2,695
Currently working	56.0	3,430
Household wealth quintile		
Poor	39.3	2,405
Middle	19.9	1,217
Rich	40.9	2,502
Age		
≤18	3.2	198
>18	96.8	5,927
Respondents ability to refuse sex		
Respondent cannot refuse sex	29.3	1,794
Respondent can refuse sex	70.7	4,330
Respondent's ability to ask for a condom		
Respondent cannot ask for a condom	22.5	1,380
Respondent can ask for a condom	77.5	4,747
High risk sex		
Respondent engaged in high risk sex	2.0	121
Respondent not engaged in high risk sex	98.0	6,003
Justification of wife beating if she refuses to have sex		
Wife beating justified	31.8	1,950
Wife beating not justified	68.2	4,177
Perceived HIV Risk		
No/low risk	48.1	2,947
Medium	20.7	1,269
High	19.0	1,166
Don't know	12.1	743
HIV risk behavior		
Inconsistent Condom Use	95.7	5,859
Consistent Condom Use	4.3	263
Concurrent sexual partners	0.7	46
No Concurrent sexual partners	99.3	6,082
Marital status		
Currently married	99.2	6,075
Widowed/Divorced/Separated	0.8	50
Gender based violence		
Experienced gender based violence	40.5	2,482
Did not experience gender based violence	59.5	3,643

Women who reported being unable to refuse their partners sex formed about 29% (1,794) of the study population whilst those who reported being unable to request condom use during sexual intercourse with their partners represented 22% (1,380) of the women under study.

The results in Table 1 above also indicate that, of the ever-married Zambian women (aged 15-49) who partook in the Domestic violence module of the survey, only 2% (121) had engaged in high risk sex (sex with partner who was not husband or cohabiting partner) during the 12 months preceding the survey. Of the women in the study, about 32% (1,950) were of the opinion that, wife beating was justified if she refused to have sex with her partner. Close to half (48%) of the ever-married women in this study perceived their HIV risk to be non-existent at all or just low. Those who believed that their HIV risk was either high or medium (19% and 20%) were the next group. There were also those who reported that they did not know their HIV risk and this group accounted for only 12% (743) of the study population.

The univariate analysis results on the prevalence of gender based violence as shown in Table 1 above indicate that in the year preceding the 2013-14 ZDHS, 41% (2,482) of ever-married women in the reproductive age group (15-49) had experienced gender based violence inflicted by a spouse or cohabiting partner. The prevalence of inconsistent condom use in the 12 months preceding the 2013-14 ZDHS among the ever-married women of child bearing ages (15-49), was also very high (96%). On the other hand, of the ever-married women who partook in the domestic violence module, only less than 1% reported having been in a concurrent sexual partnership in the year prior to the survey.

Figure 2: Percentage distribution of ever-married Zambian women (15-49 years) by experience of GBV

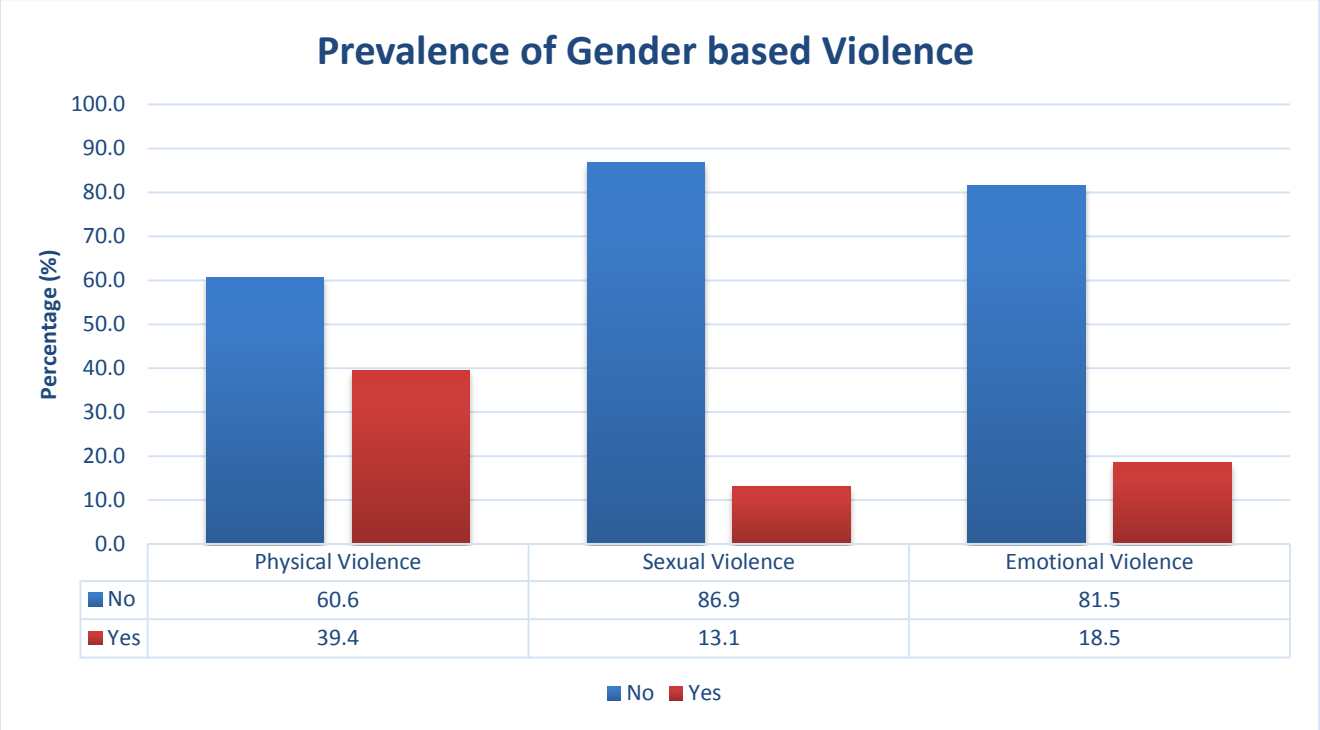


Figure 2 further illustrates the prevalence of gender based violence by type. From the figure, it is evident that, physical violence was the most commonly reported form of violence experienced (39%), whilst emotional violence (19%) and sexual violence (13%) were the least reported forms of violence reported.

Figure 3: Percentage distribution of currently married and formerly married Zambian women (15-49 years) by experience of GBV

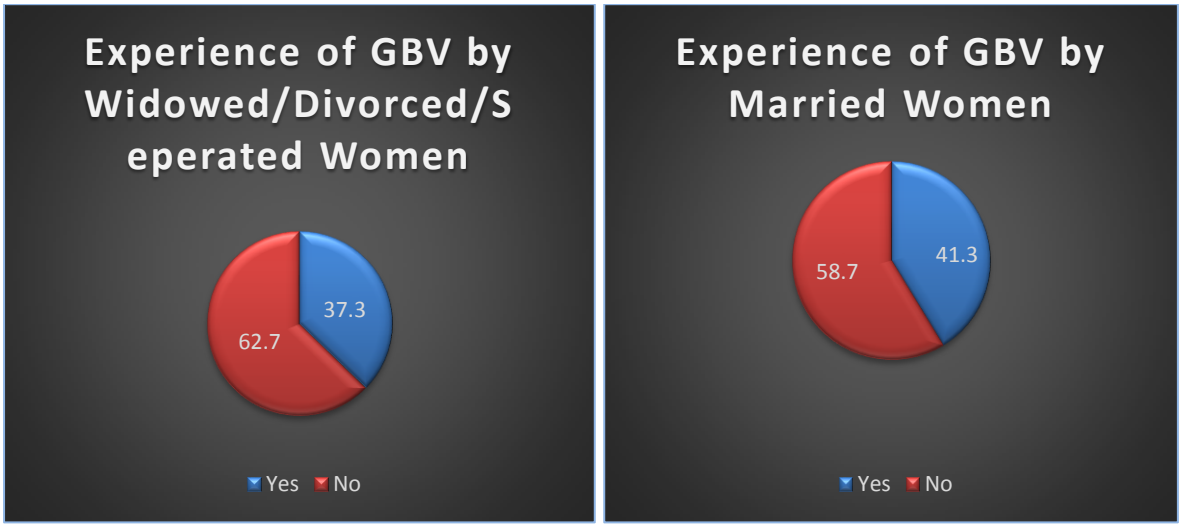


Figure 3 above shows the percentage distribution of currently married and formerly married Zambian women of child bearing age (15-49) by their experience of gender based violence in the 12 months preceding the Survey. From figure 3, it is evident that the prevalence of gender based violence among ever-married women in their child bearing years (15-49) in Zambia is generally the same among the currently married (41.4%) and those that are widowed, separated or divorced (37.3%).

4.3 Bivariate Analysis

Bivariate analysis was conducted using binary logistic regression on a sample of 6,125 (weighted) ever-married women from Zambia aged 15-49 years in order to examine the individual net effect of the economic and physical exposures, demographic, behavioral and personal risk factors on HIV risk behavior. The results of the analysis are shown in Table 2 below.

Table 2 addresses the second objective which was to examine the relationship between ever-married Zambian women of child bearing ages' HIV risk behaviors and their economic and physical exposures, demographic, behavioral and personal risk factors to such behavior.

The unadjusted Odds ratio results indicate that an increase in the level of women's education from having no education to obtaining a secondary and higher education significantly decreases the odds of inconsistent condom use. Women who had attained a higher level of education for instance, were 0.21 times less likely to practice inconsistent condom use (UOR: 4.88, 95% Cl: 2.74-8.66, $p<0.001$) relative to women with no education.

Women who had attained secondary education also had significantly lower odds (UOR: 0.61, 95% Cl: 0.37 – 1.01, $p =0.05$) than those with no education to practice inconsistent condom use. Whilst no association was found between women's level of education and cumulative sexual partner concurrency, a higher level of education was found to decrease the odds (UOR: 0.76, 95% Cl: 0.04-13.68) of cumulative sexual partner concurrency whilst the attainment of secondary education and mere primary school education increased the odds of sexual partner concurrency about 3 times compared to women with no education.

In terms of employment status, the results in Table 2 indicate that the odds of sexual partner concurrency among the unemployed, ever-married Zambian women of child bearing ages (15-49) increase by 72% (UOR: 1.72, 95% Cl: 0.95 – 3.10) compared to their currently employed counterparts. This relationship however, merely bordered on statistical significance ($p = 0.070$). There was also no significant difference (UOR 0.99, 95% Cl: 0.77 – 1.27) in inconsistent condom use between women employed and those not employed.

Table 2: Unadjusted binary logistic regression odds ratios for the probability of a woman engaging in HIV risk behavior, Zambia 2013-14

Characteristic	Cumulative Sexual Partner Concurrency			Inconsistent Condom Use		
	UOR	95% CI.	P-value	UOR	95% CI.	p-value
Highest level of Education						
No education	1.00					
Primary education	2.69	0.64 - 11.26	0.176	0.81	0.50 – 1.32	0.403
Secondary education	2.73	0.62 - 11.92	0.182	0.61	0.37 – 1.01	0.053
Higher education	0.76	0.04 - 13.68	0.855	0.21	0.12 – 0.36	0.000
Employment Status						
working	1.00			1.00		
Not working	1.72	0.95 – 3.10	0.070	0.99	0.78 – 1.27	0.985
Household wealth quintile						
Poor quintile	1.00			1.00		
Middle quintile	2.64	1.15 – 6.03	0.021	1.09	0.74 – 1.59	0.673
Rich quintile	2.17	1.02 – 4.58	0.043	0.61	0.46 - 0.80	0.000
Age						
Aged >18	1.00			1.00		
Aged <=18	0.33	0.21 – 5.34	0.441	1.21	0.57 – 2.58	0.613
Respondent's ability to refuse sex						
Able to refuse sex	1.00			1.00		
Not able to refuse sex	0.86	0.44 – 1.67	0.666	1.26	0.94 – 1.66	0.112
Respondent's ability to ask for a condom						
Able to ask for a condom	1.00					
Not able to ask for a condom	0.82	0.39 – 1.71	0.593	5.64	3.26 – 9.77	0.000
High risk sex						
Respondent is not engaged in high risk sex	1.00			1.00		
Respondent is engaged in high risk sex	0.73	0.06 – 8.31	0.800	5.60	0.77 – 40.56	0.088
Justification of wife beating if she refuses to have sex						
Wife beating if she refuses sex is not justified	1.00			1.00		
Wife beating if she refuses sex is justified	1.21	0.66 – 2.22	0.535	1.84	1.36 – 2.48	0.000
Perceived HIV risk						
No/low perceived HIV risk	1.00			1.00		
Medium perceived HIV risk	1.26	0.57 – 2.76	0.567	1.07	0.73 – 1.56	0.729
High perceived HIV risk	1.70	0.81 – 3.54	0.159	0.46	0.34 – 0.63	0.000
Don't know HIV risk	1.40	0.56 – 3.48	0.473	0.42	0.29 – 0.58	0.000

The unadjusted odds ratios results in Table 2 also suggest that, household wealth quintile significantly predicts both cumulative sexual partner concurrency and inconsistent condom

use among ever-married Zambian women in the age group 15-49. Women who were in the rich household wealth quintile for instance, had significantly lower odds (UOR: 0.61, 95% Cl: 0.46 – 0.80, p <0.05) as compared to women in poor households of practicing inconsistent condom usage. Women in the rich household wealth quintile were also more likely (UOR 2.17, 95% Cl: 1.02 – 4.58, P<0.05) to be in a cumulative sexual partner concurrent relationship relative to women in the poor wealth quintile. Women in the middle household wealth quintile were also more likely (UOR 2.64, Cl: 1.15 – 6.03, p < 0.05) to be in a concurrent sexual partner relationship relative to women in the poor wealth quintile.

Although the relationship between women's age and HIV risk behavior was found to be statistically insignificant, being younger than 18, increased the odds of inconsistent condom use by 21% (UOR: 1.21, 95% Cl: 0.57 – 2.58, p>0.05) and lowered the odds for being in a concurrent sexual partner relationship (UOR: 0.33, 95% Cl: 0.21 – 5.34, p>0.05) as compared to the older (above 18 years of age), ever-married women.

The results of the bivariate analysis indicate that, whilst there was no significant relationship between women's inability to refuse sex and inconsistent condom use, women who reported inability to refuse sex were more likely (UOR: 1.26, 95% Cl: 0.94 – 1.66, p>0.05) to report inconsistent condom use as compared to their counterparts able to refuse their husbands sex. These women surprisingly, were also less likely (UOR: 0.86, 95% Cl: 0.44 – 1.67, p>0.05) to be in a concurrent sexual partnership type of relationship compared to the ever-married women of child bearing ages (15-49) self-reported as being able to refuse sex.

Individually modeling women's ability to request condom use during sexual intercourse with HIV risk behavior in order to assess the strength of this association yielded interesting results. The unadjusted odds ratios showed that women who were not able to ask for a condom were about five and a half times more likely (UOR: 5.64, 95% Cl: 3.26 – 9.77, p = 0.000) to use condoms inconsistently as compared to those who reported, able to request a condom. On the other hand, the relationship between women's ability to request a condom and having concurrent sexual partners at this level of analysis was not statistically significant.

The bivariate results as shown in Table 2 above also indicated that, women engaged in high risk sex (sex with a partner other than their husband or cohabiting partner) were about five and a half times more likely (UOR: 5.60, 95% Cl: 0.77-40.56) to engage in sex without consistent condom use as compared to their counterparts in a sexual relationship with a husband or cohabiting partner (Non-high risk sex). This relationship bordered on statistical

significance (p = 0.08). For women engaged in high risk sex, the odds of being involved in such with concurrent partners surprisingly decreased by 0.73 (UOR: 0.73, 95% Cl: 0.06 – 8.31) compared to women in non-high risk sexual relationships. This relationship was however not statistically significant.

The bivariate analysis results also indicated that, the odds for reporting inconsistent condom use among women who justified wife beating if she refused sex, increased significantly by about 84% (UOR: 1.84, 95% Cl: 1.36 – 2.48, p <0.001) relative to women who did not justify wife beating should she refuse her husband sex. On the other hand, although the relationship between wife beating justification and sexual partner concurrency was found, not statistically significant, the odds for sexual partner concurrency among women who justified wife beating if she refused her husband sex, were about 21% higher (UOR: 1.21, 95% Cl: 0.66 – 2.22) relative those of women who did not justify wife beating.

The level of inconsistent condom use among ever-married women of child bearing ages (15-49) in Zambia, was also found to be influenced by perception of their HIV/ AIDS risk. For instance, women who perceived their risk for contracting HIV and other sexually transmitted disease as high were significantly less likely (UOR: 0.46, 95% Cl: 0.34 – 0.63, p< 0.001) to report inconsistent use of a condom as protection during sexual intercourse in the 12 months preceding the survey, compared to women who perceived their risk as low or perceived themselves as not at risk at all. Women who perceived themselves to be at high risk of HIV and other STIs were also more likely (UOR: 1.70, 95% Cl: 0.81 – 3.54) to report sexual partner concurrency compared to their counter parts who perceived themselves to be at low or no risk of HIV infection. This relationship was not statistically significant though.

Those who reported that they didn't know their HIV risk were significantly less likely (UOR: 0.42, 95% Cl: 0.29 – 0.58, p<0.001) to use condoms inconsistently during sexual intercourse relative to their counterparts who perceived themselves at low or no risk to HIV. Although the relationship between perceived HIV risk and cumulative sexual partner concurrency is not statistically significant, women who reported not knowing their HIV risk just like those who perceived themselves to be at high risk for contracting HIV and other sexually transmitted diseases, had higher odds (UOR: 1.40, 95% Cl: 0.56 – 3.48) of reporting sexual partner concurrency compared to women who perceived their HIV risk to be non-existent or low.

In order to further illustrate the relationship between gender based violence and HIV risk behavior, binomial logistic regression analysis was carried out at the bivariate level, using

odds ratios as a measure of the net effect of each of the different forms of violence on sexual partner concurrency and gender based violence. The results are shown in Table 3 and Figure 3 below.

Table 3: Unadjusted odds ratios of Sexual partner concurrency and condom use classified by type of gender based violence among ever-married women, Zambia 2013-14

Characteristic	Cumulative Sexual Partner Concurrency			Inconsistent Condom Use		
	UOR	95% CI.	p-value	UOR	95% CI.	p-value
Gender based violence						
No GBV	1.00			1.00		
Experienced GBV	3.35	1.78 – 6.29	0.000	1.38	1.07 – 1.80	0.013
Physical Violence	2.94	1.59 – 5.42	0.001	1.41	1.08 – 1.83	0.010
Sexual Violence	5.83	3.24 –10.49	0.000	1.26	0.84 – 1.87	0.249
Emotional Violence	4.27	2.37 – 7.65	0.000	1.28	0.91 – 1.81	0.147

The results shown in table 3 above illustrate the influence of gender based violence on inconsistent condom use as well as on sexual partner concurrency. From the bivariate analysis results above, women who had experienced gender based violence were significantly more likely (UOR: 1.38, 95% Cl: 1.07 – 1.80, $p<0.05$) to inconsistently use condoms compared to women who had not been abused. These women were also significantly more likely (UOR: 3.35, 95% Cl: 1.78 -6.29, $p<0.001$) to report being in a concurrent sexual partner relationship.

The different forms of gender based violence were found not equally and similarly associated with HIV risk behavior. The results on table 3 above indicate that, at the bivariate level of analysis, all the three forms of violence were significantly ($p<0.001$) associated with sexual partner concurrency. Sexual violence for instance, increased the odds of a woman reporting being in a concurrent sexual relationship by about 6 times (UOR: 5.83, 95% Cl: 3.24 – 10.49, $p<0.001$) compared to women who had not experienced sexual violence. Emotional violence also increased the odds of a woman reporting a concurrent sexual partnership relationship by about 4 times (UOR: 4.27, Cl: 2.37 – 7.65, $p<0.001$) compared to the women that had not been emotionally abused.

Physical violence was significantly associated with both sexual partner concurrency ($p<0.001$) and inconsistent condom use ($p<0.05$). Women who had experienced physical violence for instance, were more likely (UOR: 2.94, 95% Cl: 1.59 – 5.42) to report being engaged in a concurrent sexual relationship and were also more likely (UOR: 1.41 95% Cl: 1.08 – 1.83) to not use a condom consistently during sexual intercourse.

Figure 4: The odds of HIV risk behavior among abused ever-married Women, Zambia, 2013-14

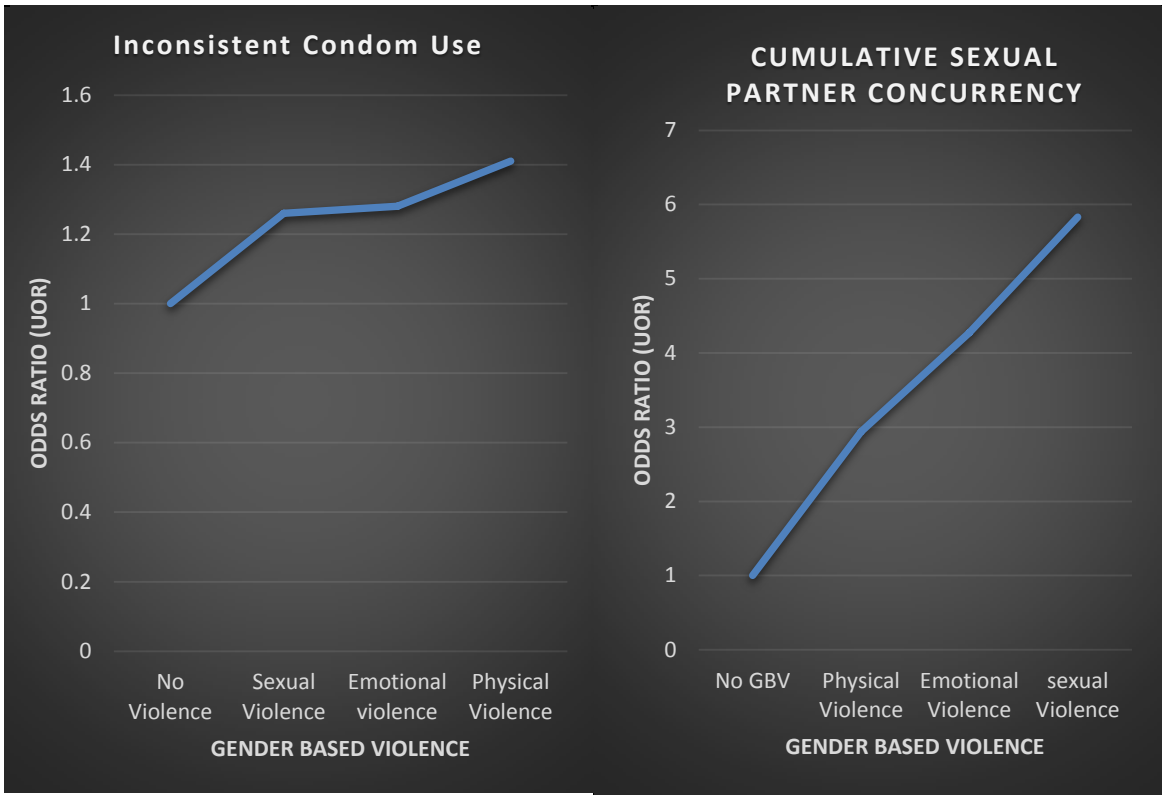


Figure 4 above graphically illustrates the relationship between gender based violence and HIV risk behavior; - inconsistent condom use and sexual partner concurrency. From Figure 3 above, it is evident that gender based violence increases the odds of inconsistent condom use and also increases the odds of concurrent sexual partner relationships among ever-married Zambian women in the child bearing ages (15-49).

In order to provide further insight on the problem of HIV risk behavior among ever-married Zambian women of child bearing ages (15-49), further analysis, stratifying them by currently married and formerly married was conducted as shown in figure 4 below.

Table 4: Unadjusted odds ratios of Sexual partner concurrency and inconsistent condom use classified by marital status among ever-married women, Zambia 2013-14

Characteristic	Cumulative Sexual Partner Concurrency			Inconsistent Condom Use		
	UOR	95% CI.	p-value	UOR	95% CI.	p-value
Marital status						
Married	1.00			1.00		
Widowed/divorced/separated	3.53	0.59 – 21.09	0.165	0.36	0.30 – 0.45	0.000

The results of the unadjusted odds ratios of ever-married women in Zambia indicated that, women that were either widowed, divorced or separated (formerly married) had significantly higher odds (UOR: 3.53, 95% Cl: 0.59 - 21.09, $p>0.05$) of engaging in sexual partner concurrency as compared to the currently married women, however this relationship was not statistically significant ($p>0.05$).

The results at bivariate level of analysis also indicated that, women who are widowed, divorced or separated had significantly lower odds (UOR: 0.24, 95% Cl: 0.11-0.52, $p<0.05$) as compared to married women of practicing inconsistent condom usage.

4.4 Multivariate Analysis

Multivariate Analysis using binary logistic regression was run on a sample of 6,125 (weighted) ever-married women from Zambia (aged 15-49 years) in order to determine whether there is association between gender based violence and HIV risk behavior. Applying the adjusted binary logistic regression model yielded the following results as shown in Table 5 below.

Adjusting for other explanatory variables in the model, the results of the multivariate logistic regression analysis indicate a non-significant relationship between sexual partner concurrency and education. The multivariate logistic regression results also suggest that, women who had attained high school education were about 0.28 times (OR: 0.28; 95% Cl: 0.14 – 0.53, p<0.001) significantly less likely to report inconsistent condom use with the most recent sexual partner in the 12 months prior to the survey than those who had no education. This relationship was however, not significant in the primary and secondary levels of education.

The results of the multivariate logistic regression analysis indicated a strong positive association between sexual partner concurrency and women's wealth quintile. The odds of sexual partner concurrency among ever-married women in Zambia seem to increase with the wealth status. For instance, for women in the middle quintile, the likelihood for concurrent sexual partner relations was about 2.5 times higher (OR: 2.47; 95% Cl: 1.07-5.71, p<0.05) as compared to their counterparts that were in the poor wealth quintile. Rich women were also more likely (OR: 2.37; 95% Cl: 1.03-5.41, p<0.05) to report being involved in concurrent sexual partnerships relative to their counterparts in the poor quintile.

The relationship between women's wealth quintile and inconstant condom use at the multivariate level of analysis after adjusting for other explanatory variables, was found no longer significant. The odds for inconsistent condom use among women in the rich quintile for instance, were not different (AOR: 1.00, 95% Cl: 0.72- 1.40, p >0.05) from those of poor women.

Table 5: Adjusted multivariate logistic regression odds ratios for the probability of a woman reporting being in or not in a concurrent sexual partnership, having consistently used or not used a condom, Zambia 2013-14

Characteristic	Cumulative Sexual Partner Concurrency			Inconsistent Condom use		
	AOR	95% CI.	P-value	AOR	95% CI.	P-value
Highest level of Education						
No education	1.00			1.00		
Primary education	2.26	0.53 – 9.57	0.268	0.86	0.52 – 1.40	0.549
Secondary education	1.90	0.41 – 8.72	0.410	0.79	0.46 – 1.34	0.392
Higher education	0.64	0.03 – 12.18	0.766	0.28	0.14 – 0.53	0.000
Employment status						
working	1.00			1.00		
Not working	1.91	1.04 – 3.50	0.035	0.96	0.74 – 1.25	0.798
Poor quintile	1.00			1.00		
Household wealth quintile						
Middle quintile	2.47	1.07 – 5.71	0.034	1.24	0.84 – 1.83	0.274
Rich quintile	2.37	1.03 – 5.41	0.040	1.00	0.72 – 1.40	0.977
Age						
Aged >18	1.00			1.00		
Aged <=18	0.41	0.02 – 6.53	0.525	1.00	0.46– 2.18	0.984
Respondent's ability to refuse sex						
able to refuse sex	1.00			1.00		
Not able to refuse sex	0.90	0.44 – 1.85	0.787	0.76	0.56 – 1.03	0.079
Respondent's ability to ask for a condom						
Able to ask for a condom	1.00			1.00		
Not able to ask for a condom	0.88	0.39 – 1.94	0.753	5.63	3.18 – 9.95	0.000
High risk sex						
Respondent is not engaged in high risk sex	1.00			1.00		
Respondent is engaged in high risk sex	1.04	0.08 – 12.07	0.978	5.56	0.76 – 40.54	0.090
Justification of wife beating if she refuses to have sex						
Wife beating if she refuses sex is not justified	1.00			1.00		
Wife beating if she refuses sex is justified	1.27	0.66 – 2.42	0.468	1.43	1.04 – 1.98	0.027

Table 5: Adjusted multivariate logistic regression odds ratios for the probability of a woman reporting being in or not in a concurrent sexual partnership, having consistently used or not used a condom, Zambia 2013-14 (Continued)

Characteristic	Cumulative Sexual Partner Concurrency			Inconsistent Condom use		
	AOR	95% CI.	P-value	AOR	95% CI.	P-value
Perceived HIV Risk						
No/low perceived HIV risk	1.00			1.00		
Medium perceived HIV risk	1.34	0.60 – 2.95	0.467	1.03	0.70 – 1.51	0.870
High perceived HIV risk	1.54	0.73 – 3.24	0.253	0.47	0.34 – 0.64	0.000
Don't know HIV risk	1.28	0.51 – 3.22	0.596	0.41	0.28 – 0.57	0.000
Gender Based Violence						
No GBV	1.00			1.00		
Experienced GBV	3.32	1.74 – 6.32	0.000	1.35	1.03 – 1.76	0.027

Controlling for other variables in the model, the results of the adjusted odds ratios indicated that, not working significantly increased the odds of being involved in concurrent sexual partnerships by 91% (OR: 1.91, 95% Cl: 1.04 – 3.50) among Zambian ever-married of child bearing age (15-49) as compared to their currently working counterparts. There was however, no statistically significant difference (OR: 0.96, 95% Cl: 0.74-1.25, $p > 0.05$) between inconsistent condom use behavior among those not working and those working.

Adjusting for all other variables in the model, multivariate logistic regression analysis just like at the bivariate level, indicated no statistically significant association between age and sexual partner concurrency. It also found no statistically significant association between age and inconsistent condom use among Zambian women of child bearing age (15-49).

Similarly, the relationship between women's sex refusal inability and their engagement in concurrent sexual partnerships was found to be statistically insignificant. The relationship between women's inability to refuse sex and their inconsistent condom use during sexual intercourse however, bordered on statistical significance (OR: 0.76, 95% Cl: 0.56 – 1.03, $p = 0.079$) indicating that women unable to refuse sex, were less likely to use condoms inconsistently as compared to their counterparts who reported able to refuse sex with their partners.

Controlling for other variables in the model, the results of the final model indicate a strong positive relationship between women's inability to request condom use during sexual intercourse and inconsistent condom use. The odds of inconsistent condom use among those who reported being unable to request a condom increased by about 5.6 times (OR 5.63, 95% Cl: 3.18 – 9.95, p = 0.000) as compared to those of women who reported being able to request condom use during sexual intercourse. Of these women, those who were not able to request a condom were interestingly 0.88 times less likely (OR: 0.88; 95% Cl: 0.39 – 1.94) to be involved in a concurrent sexual partner relationship as compared to those able to request condom usage although this relationship was insignificant (p >0.05).

The interaction between the variables, high risk sex and sexual partner concurrency among ever-married Zambian women of child bearing ages (15-49) just as at the bivariate level of analysis remained statistically insignificant (p = 0.97) even in the final model. The relationship bordered on statistical significance (p = 0.09) however for high risk sex and inconsistent condom use among the women. Women engaged in high risk sex for instance, were about five and a half times more likely (OR: 5.56, 95% Cl: 0.76 40.54) to inconsistently use condoms as compared to women only involved with their spouses or cohabitating partners.

After adjusting for other explanatory variables in the model, the results of the binary logistic regression indicated a strong positive relationship (P-value < 0.05) between women's attitude towards wife beating if she refuses to have sex with him and inconsistent condom use. For women who believed that wife beating was justified if she refused her husband sex, the odds of inconsistent condom use increased by about 43% (OR: 1.43; 95% Cl: 1.04 - 1.98) as compared to those of women who did not justify this act. At this level, among women who justified wife beating if she refused her husband sex, the odds of reporting being in a concurrent sexual partner relationship increased by 27% (OR: 1.27; 95% Cl: 0.66-2.42) as compared to those not condoning this act against women. This relationship was however, still found to be insignificant (p> 0.05) in the final model.

Applying adjusted odds ratios as a measure of the net effect of women's HIV risk self-perception on HIV risk behavior yielded the following results:- Women who perceived themselves as being highly at risk of HIV were statistically, significantly less likely (OR: 0.47, 95% Cl: 0.34-0.64, p = 0.000) to use condoms inconsistently. Similarly, the odds of inconsistent condom use among women who reported "did not know" their level of HIV risk

were, significantly lower (OR:0.41, 95% Cl: 0.28 – 0.57, p<0.001) as compared to women who perceived their HIV risk to be low or perceived themselves to be at no risk at all. The odds of inconsistent condom use however, for women who perceived their HIV risk as, medium were not significantly different (OR 1.03, 95% Cl: 0.70 – 1.51) from those of women who perceived themselves to be at no risk or low risk.

Although the interaction between women's self-perception of HIV risk and women's sexual partner concurrency was found not statistically significant (P>0.05), the odds of sexual partner concurrency among women who perceived their HIV risk to be high increased by about 54% (OR: 1.54, 95% Cl: 0.73 – 3.24) higher as compared to their counterparts who perceived their risk to be low or non-existent. The trend was the same for women who perceived their HIV risk to be medium (OR: 1.34, 95% Cl: 0.60 -2.95) and those who reported 'don't know' (OR: 1.28: 95% Cl: 0.51-3.22). The final model on sexual partner concurrency dropped this variable however so that the data could fit the model perfectly (see Annexure 2).

The results of the binomial logistic regression model after adjusting for other potentially contributing variables also indicated a positive significant relationship between gender based violence (combined) and HIV risk behavior. Among women that had experienced any of the three forms of violence, the likelihood for reporting being in a concurrent sexual partner relationship was found to be about 3 times higher (OR: 3.32, 95% Cl: 1.74 -6.32, p<0.001) as compared to other women in the study that had not experienced any form of violence.

Women who had experienced any of the three forms of violence were also about 1.35 (OR: 1.35; 95% Cl: 1.03 – 1.76, p<0.05) times more likely to inconsistently use condoms compared to those women who had not experienced gender based violence.

In order to provide further insight on the problem of HIV risk behavior among ever-married Zambian women of child bearing ages (15-49), further analysis was conducted at the multivariate level, stratifying them by currently married and formerly married was conducted as shown in figure 5 below.

Table 6: Adjusted odds ratios of Sexual partner concurrency and inconsistent condom use classified by marital status among ever-married women, Zambia 2013-14

Characteristic	Cumulative Sexual Partner Concurrency			Inconsistent Condom Use		
	AOR	95% CI.	p-value	AOR	95% CI.	p-value
Married	1.00			1.00		
Widowed/divorced/separated	2.86	0.47 – 17.40	0.253	0.30	0.14 – 0.68	0.004

Adjusting for other explanatory variables in the model, the results of the multivariate logistic regression analysis indicated a non-significant relationship between sexual partner concurrency and ever-married women's marital status by whether they were married or widowed/divorced/separated. The results at the multivariate level of analysis indicated that, women who are widowed, divorced or separated had significantly lower odds (UOR: 0.30, 95% Cl: 0.13-0.68, $p<0.05$) as compared to married women of practicing inconsistent condom usage.

In summary, important variables in lowering inconsistent condom use at the multivariate level of analysis were found to be; - the attainment of at minimal a high school education (OR: 0.28, 95% Cl: 0.14 – 0.53, p = 0.00) as well as women's self -perception of their HIV risk. Women who perceived themselves at high risk for HIV were less likely to practice inconsistent condom use (OR: 0.47, 95% Cl: 0.34 – 0.64, p =0.000) also, women who were not sure of their risk (don't know) were less likely to practice inconsistent condom use (OR: 0.41, 95% Cl: 0.28-0.57, p = 0.000).

Important in promoting inconsistent condom use at the multivariate level of analysis for ever-married women of Zambia in their reproductive ages were; - The inability to request a condom (OR 5.63, 95% Cl: 3.18 – 9.95, p = 0.000). The justification of wife beating if she

refused her husband sex by women, was also a significant contributor (OR 1.43, 95% Cl: 1.04 – 1.98, p<0.05) to inconsistent condom use among ever married, Zambian women of child bearing age (15-49). Lastly and consistent with the hypothesis of this study, the experience of any form of gender based violence further exacerbates inconsistent condom use among ever-married women of child bearing ages (15-49) in Zambia (OR: 1.35, 95% Cl: 1.03 -1.76, p<0.005).

Important variables at the multivariate level of analysis, in increasing sexual partner concurrency among ever-married Zambian women of child bearing age (15-49) were; - the experience of gender based violence (OR: 3.32, 95% Cl: 1.74 – 6.32, p= 0.000), not working (OR: 1.91, 95% Cl: 1.04 -3.50, p = 0.035), being in the middle wealth quintile (OR: 2.47, 95% Cl: 1.07-5.71, p = 0.034) and being rich (OR: 2.37, 95% Cl: 1.03- 5.41, p = 0.040).

Chapter 5: Discussion

5.0 Introduction

The overall objective of this study was is to establish the extent to which gender based violence is associated with HIV risk behaviors; inconsistent condom use and sexual partner concurrency among ever-married Zambian women of child bearing ages (15-49). The questions that this study sought to answer were: - What is the prevalence of gender based violence, inconsistent condom use and sexual partner concurrency among ever-married Zambian women of child bearing ages (15-49)? Secondly, what is the relationship between gender based violence and HIV risk behavior? Lastly, what is the relationship between HIV risk behavior and women's economic and physical exposures, demographic and personal risk factors to such behavior? This section provides a detailed discussion of the study findings and highlights their significance in addressing the study research problem.

5.1 Gender based violence and HIV risk behavior

The application of the Theory of Gender and Power in this study yielded important findings about the relationship between gender based violence and HIV risk behavior. In testing the hypotheses:- There is no relationship between Gender based violence and inconsistent condom Use and; There is no association between Gender based violence and sexual partner concurrency, the study found that gender based violence among ever-married Zambian women of child bearing age (15-49) was positively associated with HIV risk behavior; - inconsistent condom use and sexual partner concurrency consistent with previous studies (Weiss et al., 2016; Mittal et al., 2013; El-Bassel et al., 2007 and Klein et al., 2007). This relationship was found significant at both the bivariate and multivariate levels of analysis.

Consistent with the results of Dude (2007) cited in (Shabnam 2017, p. 28). who found that in Ukraine, women whose sexual partners had physically abused them, were significantly less likely to use condoms than women who had not been abused, this study, after adjusting for other variables in the final model found that, ever-married Zambian women who had experienced gender based violence were significantly more likely to inconsistently use condoms during sexual intercourse (OR: 1.35, Cl: 1.03-1.76, $p<0.027$) as compared to the other women who had experienced no form of violence. This finding supports the conclusion by Jewkes et al., (2006) who concluded that, violence prevents women from influencing the circumstances of sex, resulting in more frequent sex, and less condom use.

These results are also consistent with the Theory of Gender and Power which postulates that women having more adverse physical exposures, (having a history of being abused) will be more burdened by the sexual division of power compared to women not having these exposures. Applying this theory, Manfrin (2015) also found that women who had experienced emotional or physical abuse by their partners were at risk of HIV infection. The results of this study therefore confirm that indeed, gender based violence influences women's sexual behavior and thus holds potential to pose detrimental consequences in their health. These results were however, contradictory to study findings by Amina et al., (2009) in a study in New Zealand who found increased use of condoms among women who had experienced intimate partner violence.

Examining the association between gender based violence and sexual partner concurrency after controlling for other variables in the model, yielded similarly negative results. Women who had experienced gender based violence for instance, were about 3 times (OR: 3.32; 95% Cl: 1.74- 6.32, p<0.001) more likely to have been engaged in a concurrent sexual partner relationship as compared to women that had not experienced any form of violence. The results of this study are in line with the conclusion of Klein et al., (2007), who in a Cross Sectional Survey study of Uganda, Zambia and Zimbabwe concluded that, violence may limit a woman's ability to and influence her engagement in concurrent sex.

5.2 HIV risk behavior and women's economic and physical exposures, demographic and personal risk factors to such behavior.

In line with the postulation of the Theory of Gender and Power, important variables in lowering inconsistent condom use at the multivariate level of analysis were found to be; - the attainment of at minimal a high school education (OR: 0.28, 95% Cl: 0.14 – 0.53, p = 0.00) as well as women's self -perception of their HIV risk. Women who perceived themselves at high risk for HIV were less likely to practice inconsistent condom use (OR: 0.47, 95% Cl: 0.34 – 0.64, p =0.000) also, women who were not sure of their risk (don't know) were less likely to practice inconsistent condom use (OR: 0.41, 95% Cl: 0.28-0.57, p = 0.000).

Zambian ever-married women's status of being rich, contrary to the postulation by the theory at the sexual division of labor level, was only significant in lowering their inconsistent condom use at the bivariate level of analysis (OR: 0.61, 95% Cl: 0.46-0.80, p = 0.000) and this relationship was such that, there was no longer any difference in inconsistent condom use among women in the rich quintile (AOR: 1.00, 95% Cl: 0.72- 1.40, p >0.05) and those in the

poor quintile following the adjustment for other variables in the final model. Additionally, the results at the multivariate level of analysis yielded no significant difference in inconsistent condom use between the ever-married Zambian women who were employed and those not employed.

These results contradicted the conclusions of Shabnam (2017), that women's economic dependence on men constrains their ability to negotiate the use of condoms. This, inevitably suggests that inconsistent condom use among ever-married Zambian women of child bearing ages (15-49) is common norm regardless of one's economic standing.

Once again, consistent with previous literature (Weiss et al., 2016; Mittal et al., 2013 and Courtenay et al., 2010) and the Theory of Gender and Power at the structure of cathexis level, important in promoting inconsistent condom use at the multivariate level of analysis for ever-married women of Zambia in their reproductive ages was; - the inability to request a condom to be used during sexual intercourse.

As expected, inclusion of the variable, inability to ask for a condom in the final model yielded disquieting results. Among Zambian ever-married women in the child bearing age group (15-49), the adjusted odds of inconsistent condom use among those who reported being unable to request a condom increased by about 5.6 times (OR 5.63, 95% Cl: 3.18 – 9.95, p = 0.000) as compared to those of women who reported being able to request condom use during sexual intercourse.

This finding has confirmed the findings of previous studies (Swan and O'Connell, 2012, Pettifor et al., 2010 and Woolf et al., 2008). Woolf et al., (2008) concluded that women's self-efficacy to avoid HIV and their perceived control over condom use were important determinants of condom use. Swan and O'Connell (2012) also concluded that, women who had experienced violence had significantly lower confidence to negotiate condom use with a partner. A lack of perceived control over condom use was also found to be associated with an increase number of sexual acts unprotected by condoms (Pettifor et al., 2010). The inclusion of this variable was also a further extension to the study conducted by Straten et al., (1998) who looked at condom negotiation and refusal to have sex as predictors of physical violence and sexual coercion in Kigali, Rwanda.

Also important in promoting inconsistent condom use at the multivariate level of analysis for ever-married women of Zambia in their reproductive ages was; the justification of wife

beating if she refused her husband sex by women (OR: 1.43, 95% Cl: 1.04 – 1.98, p<0.05). This finding supports the postulation by the Theory of Gender and Power at the structure of cathexis level that refers to the social norms that lead to affective and personal risk, behavioral risk and knowledge based personal risk. Such norms are said to be not supportive of supportive of positive behavior which consequentially explains why women who justify wife beating should she refuse her husband sex end up engaging in unprotected sex or inconsistent condom use during intercourse.

The variables; women's inability to refuse sex and being engaged in high risk sex, although proposed in the theory of Gender and Power, merely bordered on statistical significance in the final model. They however, they showed some interesting findings.

The results of the relation between women's inability to refuse sex and their inconsistent condom use during sexual intercourse were unexpected. Although merely bordering on statistical significance (OR: 0.76, 95% Cl: 0.56 – 1.03, p = 0.079), the results indicated that, ever-married Zambian women who reported; unable to refuse sex, were less likely to use condoms inconsistently as compared to their counterparts who reported able to refuse sex with their partners.

This simply suggests that, although currently married Zambian women of child bearing ages (15-49) may not be able to refuse their husbands sex, upon complying, their partners consent to consistently using condoms. The results at the bivariate level of analysis although unadjusted, support this assumption as they also indicated that, women who are widowed, divorced or separated had significantly lower odds (UOR: 0.36, 95% Cl: 0.30-0.45, p<0.05) of practicing inconsistent condom usage as compared to married women.

Similarly, the relationship between woman being engaged in high risk sex and inconsistent condom use although found to be merely bordered on statistical significance (OR 5.56, 95% Cl: 0.766 - 40.54), also held potential to increase women's inconsistent condom use by about 5 and a half times as compared to women who only had sex with their spouses or cohabiting partners. This could possibly be true in the case where the act is transactional.

Surprising results in this study analysis were those from testing the relationship between women's wealth quintile and sexual partner concurrency. Consistent with the results at the bivariate level, at the multivariate level of analysis, for women in the middle quintile, the

likelihood for concurrent sexual partner relations was about 2.5 times higher (OR: 2.47; 95% Cl: 1.07-5.71, p<0.05) as compared to their counterparts that were in the poor wealth quintile.

Similarly, rich women were also more likely (OR: 2.37; 95% Cl: 1.03-5.41, p<0.05) to report being involved in concurrent sexual partnerships relative to their counterparts in the poor quintile. This result, was found to refute the conclusions previously drawn by Underwood, (2010). In his qualitative study among Zambian women, Underwood, (2010), concluded that, women are motivated by structural causes specifically poverty to enter concurrent sexual partner relationships.

5.3 The prevalence of GBV, inconsistent condom use and sexual partner concurrency among Zambian women of child bearing ages (15-49)

Gender based violence, as so aptly put by previous researchers; (Barros et al., 2011 and El-Bassel et al., 2007) is inextricably linked to HIV/AIDS. A gap in most studies that have looked at this relationship however, has been the omission of HIV risk behavior as the variable mediating this relationship. This study established that, the prevalence of gender based violence among ever-married Zambian women in the child bearing age group (15-49) was about 41% (2,482) which is comparatively on the high side when compared to other sub-Saharan African countries results from previous research studies (Okenwa, 2016; MacQuarrie et al., 2013).

The prevalence of inconsistent condom use among ever-married Zambian women of child bearing ages (15-49) reported for the 12 months preceding the 2013-14 survey was very high at 96% (5,859). This could possibly, be the reason behind the results of Tyler et al., (2016) who concluded that, Zambia has one of the highest HIV prevalence rates within the sub-Saharan African Region.

On the prevalence of sexual partner concurrency, the results of this study (1%), did not differ much from those of Sandøy et al., (2010) who reported concurrency at 0-2% among Zambian women from 1998-2003 using data from the Sexual Behavior Surveys. These results are also consistent with the results of Boerma et al., (2002) who found sexual partner concurrency to be at only 2% among Tanzanian women. This possible under reporting could be attributed to the sensitivity of this subject and unfortunately could possibly be the reason behind such studies receiving considerably less attention in HIV related studies as observed by Adimora et al., (2011).

There seems to be differing results however when using qualitative methodology in investigating the prevalence of sexual partner concurrency among Zambian women as findings by Underwood et al., (2010) who using qualitative data, reported concurrent sexual partner relationships to be common in Zambia. Results from another qualitative study in Zambia in 2010 also showed prevalence to be about 46.3% among Zambian women (National AIDS counsel of Zambia, 2010). Focus of this current study though was on ever-married women hence, it can be assumed that these results were influenced by sexual partner concurrency among mainly women who had never been married.

Chapter 6: Conclusion

Understanding the role of gender based violence in HIV risk behavior is critical for the development of interventions targeted at HIV/AIDS reductions. This study has contributed to the literature on gender based violence and HIV risk behavior among Zambian ever-married women of child bearing ages (15-49) and further provides empirical and scientific evidence of the link between gender based violence and HIV risk behavior. Specifically, it contributes to understanding the possible link between women's experience of gender based violence and their inconsistent use of condoms. It also contributes to the understanding of the possible link between gender based violence and sexual partner concurrency among ever-married women.

Furthermore, the results of this research provide knowledge that is crucial for Policy makers in the implementation of interventions targeted at sexual behavioral change, and further contribute to future policy decision making on issues relating to women, gender based violence and HIV/AIDS.

This Study, by applying the Theory of Gender and Power has shed new light on the subject of gender based violence and explained how it holds potential to inhibit and constrain women's ability to avoid negative HIV risk behavior. In line with this theory, which postulates that, having a history of sexual and physical abuse constitutes the physical exposure to HIV/AIDS, the findings of this study provided evidence that, indeed gender based violence is strongly associated with HIV risk behavior.

This relationship was found significant at both the bivariate and multivariate levels of analysis. For instance, important in promoting inconsistent condom use at the multivariate level of analysis for ever-married women of Zambia in their reproductive ages were; - The inability to request a condom, the justification of wife beating if she refused her husband sex by women and the experience of any form of gender based violence (Sexual, physical and emotional).

On the other hand, important variables at the multivariate level of analysis, in increasing sexual partner concurrency among ever-married Zambian women of child bearing age (15-49) were; - the experience of gender based violence, not working (being unemployed), being in the middle wealth quintile and being rich. All this calls for interventions targeted at discouraging gender based violence and HIV risk behaviors.

In utilizing the ZDHS, 2013–2014, a nationally representative survey of Zambia, the study has been able to close the gap in previous research among Zambian women of child bearing ages by addressing the issue of how, gender based violence is associated with HIV risk behaviors with regards to women's sexual partner concurrency and their inconsistent condom use. The findings of this study could be generalized to other sub-Saharan African countries.

6.1 Recommendations

This study indicated the ramifications of gender based violence on women's HIV risk behavior. Evidence was provided to illustrate that gender based violence holds potential to further perpetuate inconsistent condom-use as well as perpetuate sexual partner concurrency among ever-married women of child bearing ages (15-49) in Zambia. Hence, as a strategy to reduce HIV risk behavior among women and consequently the prevalence of HIV/AIDS among the same group, more interventions are needed to reduce gender based violence.

There is also need for empowering women and strengthening interventions that will promote their negotiation skills in asking for condom use as this inability was found in this study to significantly increase inconsistent condom use. This initiative would prove more efficient among particularly the widowed, divorced and separated women considering the intricacies involved for the married.

Women's attainment of at least high school education was found in this study to be statistically, significantly associated with decreased inconsistent condom use and to lower the odds of the likelihood of sexual partner concurrency among women (although, not statistically significant). There is therefore a need to focus resources and intervention strategies towards women to further strengthen the education system to ensure that women attain at least high school education level as it is linked to HIV risk behavior reduction.

Strategies in the promotion of consistent condom use should focus on women's self-perception of their HIV risk. Evidence in this study showed that women's high perception of their HIV risk holds potential to encourage inconsistent condom usage among women. There is thus, further need to invest in strategies that will change women's negative attitudes towards wife beating should she refuse her husband sex as such attitude was found to significantly increase inconsistent condom-usage among Zambian women of child bearing ages 15-49.

There is further need to invest in strategies that will change women's negative attitudes towards wife beating should she refuse her husband sex. Such attitude was found to significantly increase inconsistent condom-usage among Zambian women of child bearing ages 15-49. This could be included particularly during the traditional initiation ceremonies of young girls where they take place.

Lastly and also important, in addition to the experience of either form of gender based violence, particularly sexual violence, one of the most statistically significant factors influencing sexual partner concurrency among ever-married Zambian women of child bearing ages was found to be the status of being unemployed. This study therefore recommends that strategies targeted towards HIV risk behavior should seek to empower women economically be it through the promotion of entrepreneurship, provision of easily accessible loans as starter, business capital or any other initiatives that will ensure that women are not vulnerable to HIV risk behavior because of not being able to meet the basic needs in life.

6.2 Areas of further research

Sexual partner concurrency, using secondary data analysis was found to be a rare phenomenon (less than 1%) among Zambian women of child bearing ages. Further research is required on the real extent and prevalence of sexual partner concurrency and how it is associated with gender based violence advisably using other research methodologies such as a longitudinal study approach that will also capture the reasons behind this HIV risk behavior.

Although statistically insignificant, the results of this study also suggested that women who perceived themselves at high risk for HIV were more likely to engage in sexual partner concurrent relationships as compared to their counterparts who perceived their risk as low. It is therefore against this background that further research is proposed on the relationship between High risk perception of HIV/AIDS and sexual partner concurrency.

Also important, findings of this study provided evidence that, for women in the middle and rich quintile surprisingly, the odds of sexual partner concurrency increased significantly. It is recommended that the relationship between women's wealth status and sexual partner concurrency be further researched.

6.3 Study Limitations

This study has a few limitations that warrant consideration. First, the study did not utilize all the variables and constructs proposed by the theory of Gender and Power but has limited this study to economic and physical exposures, behavioral and personal risk factors to HIV risk behavior. The biological aspect for instance, that further explains women's susceptibility to HIV/AIDS was omitted in this study because the secondary data used precludes questions on women's biological anatomy. This however has not affected this study as the outcome of interest was not HIV/AIDS but rather HIV risk behavior.

Secondly, the data was collected via self-report and may have been subject to measurement error related to participant recall bias as pertains to the timing of sexual partnerships. When time since last sex with the prior partner or time since first sex with the later partner is missing, it is impossible to determine whether or not the partners overlapped. However, as recommended by the UNAIDS Reference Group, such partnerships were classified as not concurrent. This too did not have a large impact on the study findings.

Thirdly, due to the fact that the data was collected via self-report, it may also have been subject to measurement error related to social desirability bias. Considering that the questions on sexual behavior tend to be a rather sensitive subject for most people, there is possibility that women may have under-reported being involved in concurrent sexual partnerships as this goes against cultural norms pertaining particularly to women. The women under the current study might have also under-reported the experience of gender based violence for fear of further retribution. The validity of the results of this study have not however been significantly affected by this limitation.

Lastly, it is important to note that this study was merely establishing associations and not causality and cross-sectional data was used for the analysis of the results. The use of cross-sectional data however, has not significantly affected the findings of this study.

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Annexure1

```
. lfit, group(10) table
```

Logistic model for condom_use, goodness-of-fit test

(Table collapsed on quantiles of estimated probabilities)
(There are only 9 distinct quantiles because of ties)

Group	Prob	Obs_1	Exp_1	Obs_0	Exp_0	Total
1	0.9117	617.3493	618.5	82.54967	81.4	699.899
2	0.9388	619.6294	620.0	49.56013	49.2	669.1896
3	0.9542	681.7049	682.2	37.09836	36.6	718.8033
4	0.9589	632.7729	640.4	36.32914	28.7	669.102
5	0.9675	653.6759	646.5	16.69298	23.8	670.3688
6	0.9742	679.3868	677.1	18.37379	20.7	697.7606
7	0.9825	646.5037	647.5	15.39303	14.4	661.8967
8	0.9922	683.7464	681.4	5.182305	7.6	688.9287
9	0.9990	644.137	645.4	5.023072	3.7	649.16

```
      number of observations =      6838
            number of groups =         9
    Hosmer-Lemeshow chi2(7) =         5.89
                Prob > chi2 =         0.5532
```

```
. linktest, nolog

Logistic regression                               Number of obs   =       6838
                                                  LR chi2(2)      =     158.28
                                                  Prob > chi2     =     0.0000
Log likelihood = -1015.9749                       Pseudo R2       =     0.0723
```

condom_use	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_hat	.9280164	.4391262	2.11	0.035	.0673449	1.788688
_hatsq	.0121297	.0726068	0.17	0.867	-.1301769	.1544363
_cons	.1000193	.6490918	0.15	0.878	-1.172177	1.372216

```
. lfit
```

Logistic model for condom_use, goodness-of-fit test

```
      number of observations =      6838
 number of covariate patterns =      1136
          Pearson chi2(1120) =      1018.44
                Prob > chi2 =         0.9861
```

Annexure 2

```
. lfit, group(10) table
```

Logistic model for sex concurrency, goodness-of-fit test

(Table collapsed on quantiles of estimated probabilities)
(There are only 9 distinct quantiles because of ties)

Group	Prob	Obs_1	Exp_1	Obs_0	Exp_0	Total
1	0.0017	0	1.2	859.537	858.4	859.537
2	0.0026	2.011492	1.1	526.2744	527.1	528.2859
3	0.0035	5.275152	2.7	815.2241	817.8	820.4992
4	0.0043	2.002049	2.3	567.9428	567.7	569.9449
5	0.0061	3.622329	3.5	654.2195	654.3	657.8419
6	0.0073	5.462248	4.6	669.702	670.6	675.1642
7	0.0113	1.794601	6.1	678.5253	674.3	680.3199
8	0.0170	9.281164	9.2	681.2912	681.3	690.5724
9	0.0330	16.13015	14.9	626.8132	628.0	642.9434

```
      number of observations =      6838
            number of groups =         9
     Hosmer-Lemeshow chi2(7) =      7.75
                Prob > chi2 =      0.3552
```

```
. linktest, nolog

Logistic regression                             Number of obs   =       6838
                                                LR chi2(2)      =      30.98
                                                Prob > chi2     =     0.0000
Log likelihood = -253.28971                     Pseudo R2       =     0.0576
```

sex_concurrency	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_hat	1.495387	1.927196	0.78	0.438	-2.281849	5.272622
_hatsq	.0517068	.1998206	0.26	0.796	-.3399344	.443348
_cons	1.151595	4.547494	0.25	0.800	-7.761329	10.06452

```
. lfit
```

Logistic model for sex concurrency, goodness-of-fit test

```
      number of observations =      6838
 number of covariate patterns =       454
           Pearson chi2(441) =       483.90
                 Prob > chi2 =         0.0774
```