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Intimate Partner Violence and HIV Status among Ever-Married and Cohabiting Zimbabwean Women: An Examination of Partners' Traits

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Loren Henderson[1], Assata Zerai[2] and Rebecca L. Morrow[2]*

University of Maryland, Baltimore County[1]; University of Illinois at Urbana-Champaign[2]

***For Correspondence**: Email: *loren@umbc.edu*; Phone: *312-375-8077*

Abstract

This study examines the connection between intimate partner violence (IPV) and Human Immunodeficiency Virus status among married and cohabitating women in Zimbabwe using an African feminist framework. Stata 13.0 was used to analyze data from the *2010-2011 Zimbabwe Demographic and Health Survey*, which used a national probability sample of households in the country of Zimbabwe. This study used logistic regression to analyze the 2,830 ever-married or cohabitating women who also answered the violence and spousal traits questionnaire as well as provided blood samples. The logistic regression revealed that women who had experienced any type of intimate partner violence (odds ratio=1.29, CI [1.00, 1.67]) or broken bones (odds ratio=2.39, CI [1.19, 4.77]) were more likely to be HIV positive; relative to those with bruises bruises (odds ratio=- .64 CI [.41, .99]) were less likely. Women with partners who are trackers (odds ratio=1.28, CI [1.04, 1.59]) were more likely to be HIV positive. Patriarchal, hypermasculist culture, shown through violence against women, contributes to the likelihood of HIV in wives and partners. A cultural shift at the highest levels may help to prevent IPV and reduce the spread of HIV. *(Afr J Reprod Health 2017; 21[4]:45-54).*

Keywords: HIV, domestic violence, structural violence, socioeconomic status, African feminist framework

Résumé

Cette étude examine le lien entre la violence conjugale (VPI) et le statut VIH chez les femmes zimbabwéennes mariées et les femmes qui vivent maritalement en utilisant un cadre féministe africain. Stata 13.0 a été utilisé pour analyser les données de l'enquête démographique et de santé du Zimbabwe 2010-2011, qui a utilisé un échantillon aléatoire national de ménages dans le pays du Zimbabwe. Cette étude a utilisé la régression logistique pour analyser les 2 830 femmes déjà mariées ou qui vivent maritalement ont également répondu au questionnaire sur la violence et les traits conjugaux, ainsi que des échantillons de sang. La régression logistique a révélé que les femmes qui avaient subi de la violence (odds ratio = 1,29, IC [1,00, 1,67]) ou des fractures (odds ratio = 2,39, IC [1,19, 4,77]) étaient plus susceptibles d'être séropositives; tandis que ceux avec des contusions (odds ratio = - .64 CI [.41, .99]) étaient moins susceptibles. Les femmes avec des partenaires qui sont des suiveurs (odds ratio = 1,28, IC [1,04, 1,59]) étaient plus susceptibles d'être séropositifs. La culture patriarcale et hypermasculiste, démontrée par la violence, contribue à la probabilité du VIH chez les femmes et les partenaires. Un changement culturel au plus haut niveau sera nécessaire pour prévenir le VPI et réduire la propagation du VIH. *(Afr J Reprod Health 2017; 21[4]: 45-54).*

Mots-clés: VIH; violence domestique; violence structurelle; statut socioéconomique; cadre féministe

Introduction

Intimate partner violence (IPV) is a pattern of abusive behavior meant to control one partner in an intimate relationship through many different means including but not limited to physical, emotional, psychological, and sexual abuse, and controlling behavior, stalking or economic deprivation[1,2]. IPV has negative consequences for women, their families, and their nation[1,2]. Researchers have examined types of violence to show deleterious health outcomes. Women suffer different levels of intimate partner violence, including some with multiple injuries, repeated injuries, and requiring medical attention. These injuries are visible and easier to study; however, the psychological harm caused by stress reaction is not so easily understood[3].

Researchers have shown correlations between HIV and IPV in both "industrialized and

developing" nations[4]. This study expands upon Fidan and Bui's study to move beyond a patriarchal explanation,[5] and employs an African feminist framework[6] to show the connection between IPV and HIV by examining partners' hypermasculinist traits and women's access to education and health services. To fully examine the relationship, we examine both proximate indicators and macro structural factors[7]. This analysis seeks to examine the relationship between IPV and HIV, and whether structural factors affect this association.

Sub-Saharan Africa has about 14.7% of the world's population, but 70% of the world's HIV positive population[8-10]. HIV has become a chronic disease that those living in the Global North can manage with medication, but structural conditions in Sub-Saharan Africa continue to lead to worse health outcomes[11]. Lack of accessible treatment, lack of access to condoms, and high rates of poverty increase the risk of HIV infection and AIDS, which leads to high mortality rates that affect the population permanently and reverses development efforts that have increased life expectancy at birth.

Although HIV rates have decreased in recent years, Zimbabwe still has one of the highest rates of adult infection in the world[12]. Moreover, young women in Zimbabwe still bear a disproportionate rate of infection. Women aged 15 to 24 make up 6.2 % of the HIV prevelance[12]. Some researchers have argued that the decrease in the HIV rate signals the potential end of Zimbabwe's AIDS epidemic. For example, Williams *et al*[13] show that a projection of the epidemic into 2030 predicts that if Zimbabwe begins immediately to treat all those infected with HIV and maintains decreased transmission rates, the AIDS epidemic will end. But, to stem the tide against HIV, there must be a clearer understanding of what can be done to reduce risks to increase the number of people surviving the infection[1]. Insight must be gained into the correlates of HIV to understand the plight of those who are most susceptible.

This paper offers such an examination. It explores the determinants of HIV among ever-married or cohabiting women in Zimbabwe. It pays special attention to the role of intimate partner violence on elevating risks of HIV positive status. It also takes into consideration sociodemographic differences, sexual behaviors, and partners' traits in the prevalence of HIV among ever-married and cohabiting women.

Theoretical framework

Women's lives in Zimbabwe are made even more precarious by the political and economic turmoil the young country has experienced in its first three decades of independence. We argue that the hegemonic hypermasculinity has negatively affected women's relationships with their spouses and that we can see these effects evident in the ill health of women. We hypothesize that women whose partners' traits display values of hypermasculinity are more likely to test HIV positive than those whose partners do not display these values and behaviors.

Zerai[6] argues that Zimbabwe's militaristic and patriarchal climate is hypermasculinist. Hypermasculinity is often defined as a personality type built upon stereotypes of manhood. In the psychological literature, the characterization of hypermasculinity has been related to sexual and intimate partner violence. Here, we argue that the hypermasculinity within male-female relationships in Zimbabwe is not just an individual characteristic reflecting the character of abusers, it is a social ill that emanates from the apparatus of the state. This is evident by the fact that 35% of ever-married or cohabiting women age 15-49 report that they are survivors of violence[14]. Moghadam[15] extends the notion of hypermasculinity from merely the trait of individuals or even more broadly as a descriptor of military groups. She identifies and critiques hypermasculinity "that lies beneath capitalist relations of production and [in] the behavior of the transnational capitalist class, [explaining that] . . . hyper-masculinity is a defining feature of the corporate domain" (35-36). Zerai explains that if the corporate domain can be described as hypermasculinist, then certainly a government that uses militarism as a mode of politics exemplifies hypermasculinity[6]. We argue the values promoted by the Zimbabwe military and police to maintain the Zimbabwe African National Union's (ZANU) political dominance may be affecting male-female relationships in Zimbabwe. Osirim discussed violence against women in Zimbabwe in multiple

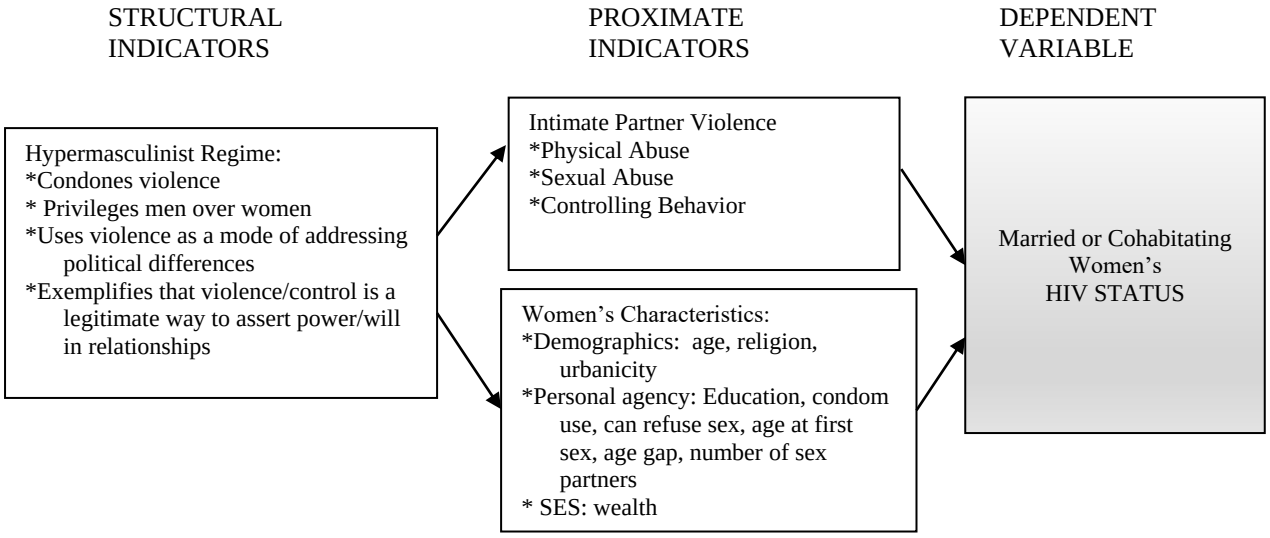

Figure 1: Conceptual Model

realms caused by structural violence meted out through the state[16], and Zerai argues that the withdrawal of a safety net for the poor and working-class individuals was further exacerbated by the post-1997 economic downturn[6]. Added burdens to women have resulted from structural adjustment, and direct violence against women who were politically antagonistic[16]. According to Zerai[6], "structural violence, domestic violence, violence from the military and police turned against the people of Zimbabwe for political ends, and the withdrawal of a safety net for the country's most vulnerable citizens all characterize the hypermasculinist tendencies of the state" (64).

Arising out of Africana feminism[6], hegemonic hypermasculinity theory argues that hypermasculinity has deleterious effects on family wellbeing in general, and especially on maternal and child health. We argue that the hypermasculinist behaviors, such as physical violence, emotional monitoring, and sexual oppression reduce the health outcomes of women in Zimbabwe.

Conceptual model

The conceptual model (Figure 1) illustrates how the hypermasculinistic political climate of Zimbabwe trickles down into men's behaviors toward women. Researchers have shown how women's empowerment decreases likelihood of IPV[17], However, this research seeks to examine the impact of partners' traits and acts of violence on women's HIV status. We argue that abusive and controlling behaviors increase the likelihood that women will test positive for HIV. It is likely that the hypermasculinist behaviors including physical or sexual assault both weaken women's immune functions and limit their ability to negotiate safe sex practices which increase women's risk of HIV infection. In addition, we examine partners' behaviors in the form of psychological abuse such as being jealous, accusatory, possessive, or stalking as this may provide a window into partner traits related to being HIV positive.

Many married and cohabiting women in Zimbabwe experience controlling behaviors from their partners. *Demographic and Health Survey* data provide evidence of men who keep track of the whereabouts of women and reduce their mobility, of men who are physically abusive to their spouses, and of women who are not always able to refuse to engage in sexual intercourse with their partners. We examine whether these factors are associated with married and cohabiting women's HIV status.

Hypotheses

H1: Women who have experienced physical violence at the hands of their partners are more likely to test HIV positive.

H2: Women who experience sexual assault at the hands of their partners are more likely to test HIV positive.

H3: Women who have partners with hypermasculinist traits are more likely to have HIV.

These hypotheses focus on men's controlling behavior by linking the hypermasculinist values promoted by Zimbabwe's political regime to individual behavior.

Methods

Data

The data for this analysis was obtained from the *2010-2011 Zimbabwe Demographic and Health Survey*. The data are collected under the auspices of the Zimbabwe Central Statistical Agency, United States Agency for International Development (USAID), the Center for Disease Control and Prevention (CDC), and several other international agencies[18]. The survey utilized a national probability sample of households, using a two-stage sampling strategy. The survey provided information on reproductive health issues, domestic violence, sexual health, and HIV-status in Zimbabwe. This sampling procedure yielded a nationally representative survey of women aged 15-49 (N=9,171) and men ages 15-54 (N=7,480). There was an 89.5% response rate among women[18]. This analysis used the data from the 2,830 ever-married or cohabiting women who reported information about intimate partner violence, responded to questions about traits of their spouses, answered questions about all the factors used in this analysis, and provided blood samples to the Demographic and Health Survey (DHS) researchers so that their blood could be tested for HIV.

Analytic strategy

Stata 13.0 was used to carry out the data analysis. The analysis included descriptive statistics to describe the socioeconomic characteristics of respondents in the sample, bivariate analysis (cross tabulations and differences of means) to test for relationships between the dependent variable and central independent variables. The multivariate statistical analysis used logistic regression to analyze the significance of associations between the independent variables and HIV status. Because the dependent variable—testing HIV positive—is binary, the relationship between the dependent variable and the independent variables should be nonlinear. According to Liao[19], it can be represented as a generalized linear model with logit link and binomial distribution:

$$\frac{P}{1\text{-}P} = e^{\alpha+\beta_1 x_1+\cdots+\beta_k x_k}$$

where P is the probability of an event occurring, and 1-P is the probability of that event not occurring. This model outcome is a linear function, *e*, of the predictors. Specifically, the log-odds of success (the logit of the probability) is fit to the predictors using linear regression, where α is the intercept (the value of *z* when the value of all independent variables are zero) and β_1 through β_K are logit coefficients of X_1 through X_K, respectively. A positive coefficient means that the explanatory variable increases the probability of the outcome. A negative coefficient means that the variable decreases the probability of that outcome. A near-zero coefficient means that the risk factor has little influence on the probability of that outcome.

By taking the natural logarithm of this equation, it is possible to calculate odds ratios (for ease of interpretation when the independent variable of interest is categorical)[16].

$$\ln\left(\frac{P(Y=1)}{1\text{-}P(Y=1)}\right) = \alpha + \beta_1 x_1 + \cdots + \beta_k x_k;$$

Operationalization

Dependent variable

To determine HIV status participants were given a blood test (enzyme-linked immunosorbent assay). Those respondents who tested positive were coded 1, and those who tested negative were coded 0.

Central independent variables

Intimate partner violence

Experience with violence*:* To determine if the respondent had experienced intimate partner violence, she was asked the following: "In the last 12 months, how often have you been hit, slapped, kicked, or physically hurt by (this person/these

persons): often, only sometimes, or not at all?" If respondents reported often or sometimes, they were coded 1. Those who said, "not at all" were coded 0.

In addition, respondents were asked whether any of the following ever happen because of their husband's or partner's actions: "(1) You had cuts, bruises or aches? and (2) You had deep wounds, broken bones, broken teeth, or any other serious injury?" Each respondent was coded 1 for each type of violence she experienced and 0 otherwise.

Experience with sexual violence

To determine if the respondent had experienced sexual violence from her partner, she was asked: "Does/did your (husband/partner) ever physically force you to have sexual intercourse with him even when you did not want to?" "Does/did your (husband/partner) ever force you to perform any sexual acts you did not want to?" The respondent was coded 1 if she experienced any sexual violence and 0 otherwise.

Socio-demographics of respondents

***Education*:** To determine educational attainment, respondents were asked about their highest level of educational attainment. Those who said they had primary education or less were coded 1 and 0 otherwise.

Respondent's age: Respondent's age is a continuous variable ranging from 15-49 years.

Husband-Wife age gap: Respondents who had husbands who are at least 10 years older than themselves were coded 1. Others were coded 0.

Age at first sex: Respondents were asked "How old were you when you had sexual intercourse for the very first time?" The range was from 11-29 years old.

Religion: Respondents were asked about their religion. Those who reported being of Christian religion were coded 1 and 0 otherwise.

Urbanicity: Respondents were coded 1 if they lived in an urban area and 0 otherwise.

Household wealth: To determine the respondent's household wealth, the DHS researchers utilized a wealth index that includes information about household assets, consumer goods, access to sanitation, water, and household flooring. This index is coded to have lowest to highest wealth and then divided them into quintiles[12]. Respondents with wealth in the top two quintiles were coded 1, and others were coded 0.

Ability to refuse sex: Respondents were asked "Can you say no to your (husband/partner) if you do not want to have sexual intercourse?" Respondents were coded 1 if yes and 0 otherwise.

Number of lifetime sexual partners: To determine total number of sexual partners, respondents were asked about the total number of sexual partners they had in their lifetime. Scores range from 1-95.

Condom use: Women were asked: "Was a condom used during last sex with your most recent partner?" Those who said yes to condoms were coded 1, and others were coded 0.

Husband's traits

Accuser: Respondents were asked whether their husbands frequently accuse them of being unfaithful. Responses were coded 1 if yes and 0 otherwise.

Possessive: Respondents were asked whether their husbands refuse to let them meet their female friends. Responses were coded 1 if yes and 0 otherwise.

Tracker: Respondents were asked whether their husbands "insists on knowing where [they] are at all times." Responses were coded 1 if yes and 0 otherwise.

Results and Discussion

Table 1 presents selected traits of married and cohabiting women in Zimbabwe by their HIV status. Generally, we find the main difference between the two groups is experience with intimate partner violence. Women who tested positive for HIV were slightly more likely to experience IPV relative to

women who were not HIV-positive, as 29% of HIV-positive women and 26% of women who did not test HIV-positive have experienced intimate partner violence. Similarly, significantly higher percentages of those who are HIV positive than those who were not HIV positive had experienced broken bones because of their partners' actions. Those with primary education or less were slightly underrepresented among those with HIV. Women from rich families were overrepresented among those with HIV. This table also shows that women who had partners who insisted on knowing their whereabouts always were overrepresented among those with HIV.

Table 1: Selected Characteristics of Married and Cohabitating Women in Zimbabwe by HIV Status

	No HIV Mean	With HIV Mean	Overall Mean
% experiencing violence	26.2%	29.0%	26.6%
% experiencing sexual violence	14.6%	14.2%	14.5%
% with bruises	8.4%	7.2%	8.2%
% with broken bones	**1.6%***	**2.9%**	1.8%
% with primary education or less	**33.2%***	**29.2%**	32.5%
mean age	29.6	29.6	29.6
% with age gapS	21.2%	21.2%	21.2%
mean age at first sex	18.0	18.1	18.0
% Christian	91.0%	90.3%	90.9%
% urban	30.5%	31.3%	30.6%
% rich	**38.9%***	**43.2%**	39.6%
% with ability to refuse sex	74.9%	75.9%	75.1%
mean number of sex partners	2.0	2.1	2.0
% who used condoms	7.8%	8.2%	7.9%
% with husband who is an accuser	15.2%	13.0%	14.8%
% with husband who is possessive	13.5%	11.3%	13.1%
% with husband who is a tracker	**40.0%***	**44.4%**	40.8%
N	2344	486	2830

*p<0.05, ** p<0.01, *** p<0.001

There were no other systematic differences in the characteristics of women who were HIV positive and those who were not. They did not differ by mean age. There were no differences in age at first sex, as both groups began sexual intercourse at 18 years on average. They did not differ significantly by religion, as Christians were 90.3% of those with HIV and 91.0% of those without HIV. There were no systematic differences between those with or without HIV in terms of number of sex partners or condom use. Finally, there were no significant differences in whether they had he ability to refuse sex with their partners. HIV is an equal opportunity status in Zimbabwe.

Figure 2 presents the percentage of Zimbabwean women who tested HIV positive by the type of intimate partner violence and injury they sustained. This figure showed that 18.7% of those who experienced intimate partner violence were HIV positive. It also showed that 16.8% of those who experienced sexual violence were HIV positive. Similarly, 15.1% of those who received bruises were HIV positive. In contrast, 26.9% of those who sustained broken bones were HIV positive. These results suggest that some types of intimate partner violence and injuries are associated with elevated risks of having HIV while others are not.

How are different types of intimate partner violence and injury related to HIV status among women in Zimbabwe? To address these questions, multivariate analysis was used. Table 2 presents a logistic regression model predicting married and cohabitating women's HIV status with experiences with violence and partner-induced injuries, sociodemographic characteristics, and partners' traits. For ease of interpretation, the first column presents the results as log-odds coefficients; the second shows the standard errors for these coefficients; and the third column presents these same results as odds ratios. The table showed that many married and cohabitating women who experienced various forms of violence from their partners (including being pushed, shook, slapped, punched, or had hair pulled) were more likely to have HIV than were those who did not. The odds of having HIV for those who experienced such violence were 1.29 times higher than those who did not ($p < .05$). The results also showed that those who sustained broken bones from partners were more than twice as likely to have HIV compared with those who did not. However, the results also showed that women who received injuries such as partner-induced bruises were significantly less likely to be HIV positive. There were no significant relationships between the likelihood of married and cohabitating women having HIV and their sociodemographic characteristics such as education, age, age differences between husband and wife, age at first sex, religion, urbanicity, and wealth. Other tactics such as the ability to refuse sex, number of

sex partners, and condom use were also unrelated to HIV status.

The results also showed that married or cohabitating women with possessive partners and partners who track women's whereabouts were significantly different in their likelihoods of being HIV positive, net of other factors. Having a partner who tracks one's whereabouts (odds ratio=1.28, CI [1.04, 1.59]) was associated with increases in the likelihood of being HIV positive. These findings support Hypotheses 1 and 3. They do not, however, provide support for Hypothesis 2.

These results support the idea that women's HIV status and both their experiences with IPV and their partner's controlling traits are systematically related. They show that married and cohabitating women who sustained some kinds of injuries through IPV or had controlling partners were more susceptible to HIV.

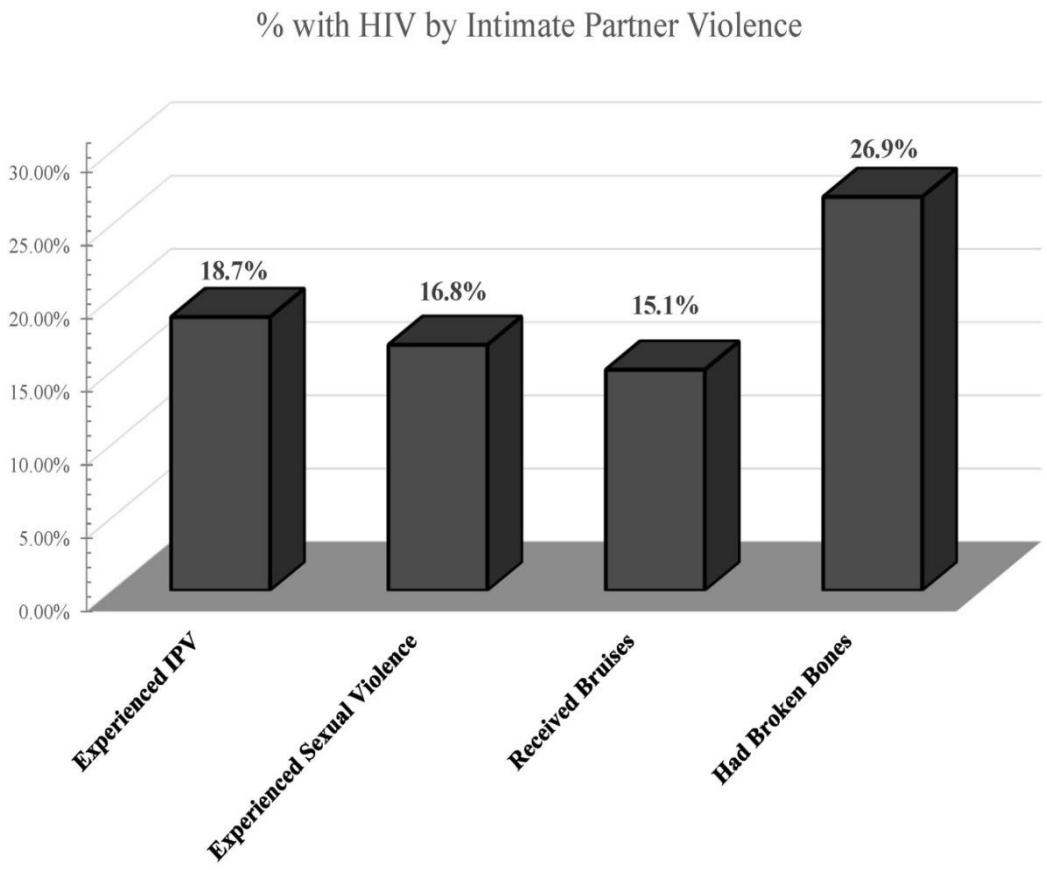

Figure 2: Percent of Married and Cohabitating Women with HIV by Type of Intimate Partner Violence

Conclusion

Although the rates of HIV infection have declined significantly in Zimbabwe, the country still has one of the highest rates in the world[20]. The rates of HIV also vary throughout Zimbabwe. More importantly, HIV disproportionately affects the women of Zimbabwe[21], and the explanations for these disparities have not been fully uncovered. This study was concerned with examining the role of intimate partner violence and HIV among married and cohabiting women living in Zimbabwe. Using an Africana feminist framework, the precarious position of women living under the hypermasculinist values promoted by Zimbabwe's militaristic and patriarchal climate was examined. It was observed that hypermasculinist values negatively affect women's relationships with their

Table 2: Logistic Regression Model Predicting HIV Status in Zimbabwean Women who are Married or Cohabitating with Experiences with Violence and Injury, Sociodemographic Factors, and Partners' Traits

Independent Variables	Coeff.	SE	Odds Ratios
Experienced Violence (ref= no experience)	**.257***	(.130)	**1.290***
Experienced Sexual Violence (ref= no experience)	-.056	(.155)	.946
Bruises (ref= no bruises)	**-.446***	(.226)	**.640***
Broken Bones (ref= no broken bones)	**.872***	(.352)	**2.391***
Primary Education (ref= secondary education+)	-.185	(.120)	.831
Age	.002	(.007)	1.002
Age Gap	.019	(.125)	1.020
Age at First Sex	-.005	(.019)	.996
Christian (ref= non-Christian)	-.110	(.174)	.896
Urban (ref= non-urban)	-.179	(.149)	.837
Rich	.266	(.141)	1.305
Able to Refuse Sex (ref= not able to refuse)	.042	(.118)	1.043
Number of Sex Partners	.002	(.007)	1.002
Condom Use (ref= no condom used)	.047	(.186)	1.048
Husband is an Accuser (ref= not an accuser)	-.270	(.163)	.763
Husband is Possessive (ref= not possessive)	-.261	(.170)	.770
Husband is a Tracker (ref= not a tracker)	**.251***	(.109)	**1.285***
Constant	-1.563***	(.424)	
N	2830	2830	2830

* p < .05, ** p < .01, *** p < .001

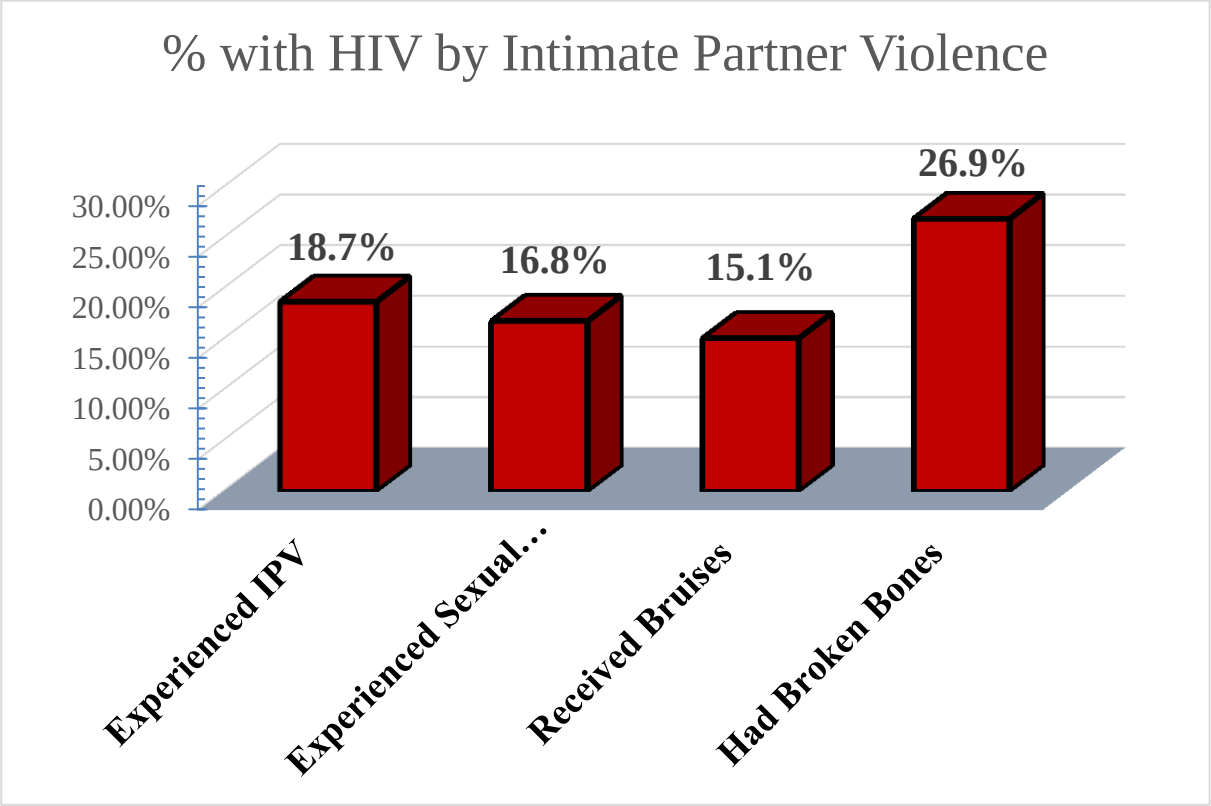

Figure 3: Percentage with HIV by Intimate Partner Violence

spouses and had strong associations with testing positive for HIV.

This study supports the research linking intimate partner violence and HIV among women. It was observed that married and cohabiting women who experienced broken bones and other forms of intimate partner violence and had partners who track their whereabouts were more likely to have HIV compared with those who did not. Violence and controlling behaviors are encouraged within a hypermasculinist, militaristic environment that puts women at risk for HIV. Experiences with IPV expose women to ill health. IPV also increases mental stress, which may potentially lower immune function making women more vulnerable tocontracting HIV if exposed[7,8]. Being in an abusive relationship may also lower a women's negation power to demand safe sex or seek and sustain treatment. These findings are not to be used as tools to pathologize Zimbabwean culture; rather they are empirical examples that demonstrate the clear relationship between intimate partner violence and HIV. Patriarchal and violent behaviors in any culture diminish women's ability to demand safe sex, access health care, live free from abuse, and freely choose to remain in relationships.

Intervention programs aimed at reducing IPV are key elements to curtailing the spread of HIV. However, institutional changes in the political system are needed to reduce the hypermasculinist ideologies that penetrate the interpersonal relationships between men and women and sustain the widespread incidences of gender-based violence against women. Future research needs to address the motivations of men in perpetrating intimate partner violence and what factors may help to reduce gender-based acceptance of violence among both men and women.

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Contribution of Authors

Although in different ways and areas, all authors contributed substantially to the development and writing of this manuscript. All authors approve of and take responsibility for the contents of the manuscript.

References

1. Iliyasu A, Abubakar IS, and Babashani M. Domestic violence among women living with HIV/AIDS in Kano, Northern Nigeria. African Journal of Reproductive Health 2011; 15(3): 41-49.
2. Fawole OI, Aderonmu AL, and Fawole AO. Intimate partner abuse: wife beating among civil servants in Ibadan, Nigeria. African Journal of Reproductive Health 2005; 9(2): 54-64.
3. Issahaku PA. Health implications of partner violence against women in Ghana. Violence & Victims 2015; 30(2):250-264.
4. Campbell J. The health consequences of intimate partner violence. Lancet 2002; 359:509–14.
5. Fidan A and Bui H. Intimate partner violence against women in Zimbabwe. Violence Against Women 2016; (22)9: 1075-1096.
6. Zerai A. Hypermasculinity and State Violence in Zimbabwe: An Africana Feminist Analysis of Maternal and Child Health. Trenton, NJ: Africa World Press, 2014.
7. Halperin DT, Mugurungi O, Hallett TB, Muchini B, Campbell B, Magure T, Benedikt C, and Gregson S. A surprising prevention success: why did the HIV epidemic decline in Zimbabwe. PLoS medicine 2011; 8(2):e1000414.
8. Griffin P. The World Bank, HIV/AIDS and sex in Sub-Saharan Africa: A gendered analysis. Globalizations 2011; 8(2): 229-248.
9. Cash K. What's shame got to do with it? Forced sex among married or steady partners in Uganda. African Journal of Reproductive Health 2011; 15(3):25-40.
10. Okonofua F. Documenting new HIV/AIDS research and interventions in Sub-Saharan Africa. African Journal of Reproductive Health, 2013; 17(4): 9-16.
11. Colvin CJ. HIV/AIDS, chronic diseases and globalisation. Globalization and Health, 2011; (7)1: 31-36.
12. UNAIDS. "The gap report." Joint United Nations Programme on HIV/AIDS. Geneva: UNAIDS, 2014.
13. Williams B, Gouws E, Somse P, Mmelesi M, Lwamba C, Chikoko T, and Fazito E. Epidemiological trends for HIV in southern Africa: Implications for reaching the elimination targets. Current HIV/AIDS Reports 2015; 12(2): 196-206.

14. Zimbabwe National Statistics Agency and ICF International. 2016. Zimbabwe Demographic and Health Survey 2015: Final Report. Rockville, Maryland, USA: Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International.
15. Moghadam V. Women, gender, and economic crisis revisited. Perspectives on Global Development and Technology 2011; 10:30-40.
16. Osirim MJ. Crisis in the state and the family: Violence against women in Zimbabwe. African Studies Quarterly 2003; 7(2-3): 5.
17. Wekwete NM, Sanhokwe H, Murenjekwa W, Takavarasha F, and Madzingira N. The association between spousal gender based violence and women's empowerment among currently married women aged 15-49 in Zimbabwe: Evidence from the 2010-11 Zimbabwe Demographic and Health Survey. Etude de la Population Africaine/African Population Studies 2014; 28(3):1413-1431.
18. Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. Zimbabwe Demographic and Health Survey 2010-11. Calverton, Maryland: ZMSTAT and ICF International Inc., 2012.
19. Liao TF. Interpreting Probability Models. Thousand Oaks, CA: SAGE Publications, Inc, 1994.
20. Gonese E, Mapako T, Dzangare J, Rusakaniko S, Kilmarx PH, Postma MJ, Ngwende S. Within-gender changes in HIV prevalence among adults between 2005/6 and 2010/11 in Zimbabwe. PloS one 2015; 10(7): e0129611.
21. UNAIDS, UNAIDS Zimbabwe County Factsheet HIV and AIDS Estimates, 2017. http://www.unaids.org/en/regionscountries/countries/zimbabwe.