Safeguarding women's and girls' wellbeing: Exploring the role of gender-based violence on HIV transmission in Zimbabwe

Munyaradzi Mapingure

ICAP at Columbia University

Zindoga Mukandavire

Coventry University

Innocent Chingombe

ICAP at Columbia University

Rouzeh Eghtessadi

SAfAIDS

Diego F. Cuadros

University of Cincinnati

Tafadzwa Dzinamarira

ICAP at Columbia University

Farirai Mutenherwa

Biomedical Research and Training Institute

Godfrey Musuka (✉ gm2660@cumc.columbia.edu)

ICAP at Columbia University

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Abstract

Background

Gender-based violence (GBV) is a growing epidemic, whose role in HIV transmissions remains minimally addressed by the majority of national HIV response interventions.

Methods

Statistical and geo-spatial analysis was used to explore the relationship between GBV variables and HIV status using data from Zimbabwe Demographic and Health Survey, 2015-16.

Results

Women who were ever humiliated by their husbands or partners were 1.45 times more likely to be HIV positive than those who were never humiliated, $p = 0.002$. The same was true for women whose husbands or partners ever threatened to harm them or someone they love, OR (95%CI) 1.33 (1.04–1.68), $p = 0.022$. There was a positive association between HIV status and women who reported that their husband or partner, either pushed, shook, or threw something at them or punched them with his fist or with something that could hurt them or kicked, dragged or beat them, or tried to choke or burn them on purpose or threatened or attacked them with a knife or gun, or any other weapon. Women who experienced forced sexual violence with threats were more likely (odds 1.61, $p = 0.019$), to be HIV positive than those women who did not experience the same. Using geospatial mapping techniques our study has shown a substantial countrywide epidemic of GBV against women in Zimbabwe requiring urgent attention. Emotional GBV had a similar geographical distribution with HIV in the northern part of the country, where all three types of violence tend to aggregate.

Conclusion

There is a significant association between forms of GBV (emotional, physical, and sexual) and HIV status. The results suggest the need to strengthen interventions that empower women and girls with skills to withstand violence in order to curb HIV transmission. The engagement of men as proponents of gender equality, bringing other men to account for perpetuating GBV and actively countering violence against women and girls, is critical to the design of such interventions.

Background

Zimbabwe's HIV prevalence is one of the highest in the world, at 11.8 among 15–49 year olds% [1] with 1,225 million individuals living with the virus [2, 3]. Despite recording a significant decline in national HIV prevalence over the past decade [4, 5], HIV still disproportionately affects women and girls in Zimbabwe.

Increasing scholarly attention has however been paid to gender inequalities in marriage and sexual relationships as a key driver of HIV infection [6, 7] with the recognition that the elimination of any form of violence against women and girls is critical for equitable and sustainable development [8] in general and for the fight against HIV in particular.

Gender-based violence against women is increasingly recognised as a gross violation of human rights and its role in fuelling HIV transmission is widely recognised [9, 10]. An HIV model that assessed the effects of gender-inequalities in southern Africa, for instance, has demonstrated that gender-inequality increases HIV prevalence in heterosexual relationships [9]. Although the risk of rape and sexual assault is more pronounced in conflict situations [11] gender roles and norms which define acceptable and unacceptable behaviors also play a critical role. In patriarchal societies, Zimbabwe included, gender roles and identities define males as aggressive and females as submissive, thereby contributing to ineffective sexual negotiation skills for females. Poor negotiation skills could potentially leave women on the receiving end of male perpetrated sexual violence and enable toxic masculinities, which deepen power imbalances between women/girls and men/boys [12]. Unequal gender norms are therefore likely to contribute to increased forced and unprotected sexual gender-based violence (SGBV), which could result in increased HIV, sexually transmitted infections and unplanned pregnancies. Gender-based violence, therefore, contributes to women's vulnerability and risk to HIV infection by influencing individual and societal attitudes on sex, sexual practices and risk-taking behaviours [13].

Fear of blame, isolation, rejection, and social stigma, in addition to the threat of partner violence, often discourage women from revealing their HIV status to their partners, or even accessing an HIV test. As such, a substantial proportion of gender-based violence has been found to occur within the marriage institution and other intimate partnerships [14].

A growing body of literature exists on the prevalence and trends of domestic violence in Zimbabwe [15]. For example, it is documented that violence against women cuts across the socio-economic, religious and cultural divide [15]. Furthermore, trends in the prevalence of sexual and physical violence against women show very minimal changes over the past 15 years [15]. In Zimbabwe the HIV prevalence of women aged 15–49 who ever experienced physical violence since age 15 fell from 36% in 2005-6 to 30% in 2010-11 with a marked increase to 35% in 2015 [15]. Violence against women during pregnancy decreased slightly from 8% in 2005-06 to 5 % in 2010-11, and 6 % in 2015 [15]. In all three-national demographic and health surveys conducted in the country between 2005 and 2015, the current husband or partner was invariably reported as the main perpetrator of the violence. Estimates from the Zimbabwe Demographic and Health Survey (ZDHS) showed that 14% of women age 15–49 reported that they ever experienced sexual violence and 8 % experienced this form of violence within the past 12 months of the survey [15]. It is worth noting that by age 19% of all women aged 15–49 had experienced sexual violence at some point in their lives and the figure rose to 8% by the time they reached age 22. As with physical violence, the current husband was reported as the perpetrator. The experience of physical or sexual violence was highest among women age 25–29 years (48%).

This study seeks to investigate the association between gender-based violence, HIV risk factors, and outcomes using secondary data from the 2015 ZDHS data.

Methods

Study area and data sources

Subjects were enrolled in the ZDHS via a two-stage sampling procedure to select households. A total of 400 ZDHS sample locations were selected. The study population was limited to 5291 women aged 15 to 49 years who were ever in a marital union, administered the violence module and also tested for HIV. A trained interviewer conducted a woman's Questionnaire to participants in either English, or the two major languages that are spoken in Zimbabwe; Shona and Ndebele. Anonymous HIV testing was performed with the informed consent of all sampled individuals. HIV serostatus was determined by testing with the enzyme-linked immunosorbent assay (ELISA) Vironostika Uniform 2 Ag/AB. All those individuals who tested positive were retested with a follow-up ELISA, the Enzygnost® HIV Integral II assay (Siemens). The samples that tested positive to the two tests were classified as HIV positive. When the first and second tests are discordant, a confirmatory test, the HIV 2.2 western blot (DiaSorin), was then used as a tie-breaker.

Gender based violence variables

The GBV variables used in this manuscript have been described elsewhere [1]. Briefly, the 2015 ZDHS measured violence committed by spouses and by other household members. Accordingly, information was obtained from ever married women on violence by spouses and others, and from never married women on violence by anyone, including boyfriends. International research on violence shows that intimate partner violence is one of the most common forms of violence against women. Spousal or partner violence was measured in more detail than violence by other perpetrators through the use of a shortened, modified Conflict Tactics Scale (CTS). Specifically, spousal violence by the husband or partner for currently married women, and the most recent husband or partner for formerly married women was measured by asking all ever-married women the following set of questions:

Did your (last) husband/partner ever:

- a) Say or do something to humiliate you in front of others?
- b) Threaten to hurt or harm you or someone you care about?
- c) Insult you or make you feel bad about yourself?

Did your (last) husband/partner ever do any of the following things to you:

- d) Push you, shake you, or throw something at you?
- e) Slap you?

- f) Twist your arm or pull your hair?
- g) Punch you with his fist or with something that could hurt you?
- h) Kick you, drag you, or beat you up?
- i) Try to choke you or burn you on purpose?
- j) Threaten or attack you with a knife, gun, or any other weapon?
- k) Physically force you to have sexual intercourse with him even when you did not want to?
- l) Physically force you to perform any other sexual acts you did not want to?
- m) Force you with threats or in any other way to perform any sexual acts you did not want to?

Domestic Violence

When the answer to any of these questions was “yes,” women were asked about the frequency of the act in the 12 months preceding the survey. A “yes” answer to one or more of items (a) to (c) above constitutes evidence of emotional violence, a “yes” answer to one or more of items (d) to (j) constitutes evidence of physical violence, and a “yes” answer to items (k) to (m) constitutes evidence of sexual violence. This approach of asking about specific acts to measure different forms of violence has the advantage of not

being affected by different understandings of what constitutes a summary term like violence. By including a wide range of acts, the approach also has the advantage of giving the respondent multiple opportunities to disclose any experience of violence. In addition to these questions asked only of ever-married women, all women were asked about physical violence perpetrated by others with the question: From the time you were 15 years old, has anyone [other than your current (last) husband/partner] hit, slapped, kicked, or done anything else to hurt you physically? Respondents who answered this question in the affirmative were asked who had done this to them. A similar question asked women who had ever been pregnant about violence during pregnancy. Women were also asked about sexual violence by anyone other than the current husband/partner with the following question: At any time in your life, as a child or as an adult, has anyone ever forced you in any way to have sexual intercourse or perform any other sexual acts? Although this approach to questioning is generally considered optimal, the possibility of underreporting of violence exists in any survey.

Statistical analysis

STATA Version 15.1, Texas USA, was used to conduct statistical analysis for this cross-sectional study. The analysis began by using simple proportions to describe the characteristics of the women included in the analysis. Associations between GBV variables and HIV positivity were explored using the simple chi-square test for categorical variables and t-test for continuous variables. Odds ratios and their 95% confidence intervals were used to calculate the risk estimate for HIV positivity among women

experiencing various forms of violence compared to women not abused. Statistical significance cut-off for purposes of describing the significant GBV factors associated with HIV positivity was set at $p < 0.05$.

To describe the geographical structure of the female HIV prevalence and the prevalence of each GBV variable, and to identify potential areas where these variables had similar spatial distribution, maps of the HIV prevalence in females and each of the GBV variables reported using the geographic coordinates for each primary sample unit (PSU) where the survey was conducted were generated. First, the prevalence of HIV in females was estimated at each PSU. HIV prevalence ($HIVp$) at PSU location i was defined to be $HIVp_i = n_i / N_i$, where n_i denotes the number of HIV-positive females and N_i denotes the total number of females at location i . The prevalence of each GBV at each PSU was calculated in similar fashion as the HIV prevalence, in which the number of female participants with “yes” responses was divided by the total number of responders at each PSU. A kernel smoothing method to generate a continuous kernel density surface to illustrate the local spatial variations of female HIV and GBV prevalence was employed [16].

Results

Demographic Characteristics of the Respondent Population

A total of 5219 women aged 15 years and above took part in the study. Most of them (66%) were residents in rural areas. In terms of educational attainment, the majority (61%) had secondary education while 2% had none. Regarding marital status, the majority (79%) were married. When grouped by religious affiliation, the two dominant groups were Apostolic (44%) and Pentecostal (24%) sects, as shown in table 1 below.

Association between types of gender-based violence and HIV status

In this paper, gender-based violence was categorised into three broad types, namely emotional, physical and sexual. The question to be answered was; is there a significant association between GBV and HIV among the population of Zimbabwe? Below are findings under each of the three GBV categories.

Emotional violence and HIV status of women

As shown in table 2, the odds of being HIV positive were high for women who experienced various forms of emotional GBV compared to those who did not. For example, women who were ever humiliated by their husbands or partners were 1.45 times more likely to be HIV positive than those who were never humiliated, $p = 0.002$. The same was true for women whose husbands or partners ever threatened to harm them or someone they love, OR (95%CI) 1.33 (1.04-1.68), $p = 0.022$. The results were however not significant for women whose husbands or partners ever insulted them or made them feel bad about themselves.

Physical violence and HIV status of women

Physical violence was also significantly associated with having an HIV positive status. As shown in table 2, results show a positive association between HIV positivity and women who reported that their husband or partner, either pushed, shook, or threw something at them or punched them with a fist or with something that could hurt them or kicked, dragged or beat them, or tried to choke or burn them on purpose, or threatened or attacked them with a knife or gun, or any other weapon.

Sexual gender-based violence and HIV status of women

Women who experienced forced sexual gender-based violence (SGBV) with threats were more likely (odds 1.61, $p=0.019$), to be HIV positive than those women who did not experience the same (Table 2). There was however no significant association between either forced sexual intercourse or other forced sexual acts, and HIV infection.

Prevalence of GBV in Zimbabwe

Geospatial analysis showed that forms of GBV (emotional, physical and sexual) are endemic across Zimbabwe, and occurs in every part of the country to a high degree. However, high prevalence of the 3 forms of emotional, physical and sexual GBV are distinctly concentrated in the northern part of the country, in the provinces of Mashonaland West, Central and East, and Harare. Additionally, only emotional violence had similar spatial distribution as the HIV prevalence distribution in females, particularly in the southern part of the country, within the provinces of Matabeleland North and South, where the prevalence of both HIV and emotional violence are high (Figure 1).

Figure 1 shows spatial distribution of A) female HIV prevalence; B) emotional violence prevalence; C) physical violence prevalence; and D) sexual violence prevalence. Maps were created using ArcGIS® by ESRI version 10.5 (<http://www.esri.com>) [17]

Discussion

Our study results showed that forms of GBV (Emotional, Physical and Sexual Violence) are prevalent across the whole of Zimbabwe. There is a significant association between various forms of violence and HIV status. Studies have demonstrated that as women's empowerment decreases, the likelihood of inter-partner violence increases. For example, an analysis of the 2010-11 ZDHS data [10] showed that women aged 15–49 years who did not participate in decision-making at a household level were more likely to experience GBV than those who do. Further, those who had some level of control over their spouses' earnings were less likely to suffer from GBV. Economic factors may contribute to GBV, which subsequently exposure them to HIV infection or reinfection. For example, women may be forced to engage in transactional sex for survival and are unable to negotiate safe sex, due to economic dependence on casual or long-term partner who provides economic security for herself, her family or siblings; as well as child marriage [10]. Using a feministic framework to understand the association between inter-partner violence and HIV status in Zimbabwe, Henderson et al [11] found that married and cohabitating women who experienced various forms of violence from their partners were more likely to be

HIV positive compared to those who did not. In addition, the study also demonstrated that women with controlling partners were also more susceptible to HIV.

Violence against women and girls could lead to negative health outcomes [12–14]. Specifically, violence can potentially prevent women and adolescent girls from negotiating safer sexual practices, exposing them to a higher risk of HIV infection. These challenges could be perpetuated by cultural, religious and social norms, which underpin gender inequalities and power imbalances, and which perpetuate patriarchal and toxic masculinity practices which hinder women's and girl's rights to well-being. For example, 31% of men do not believe that a woman has the right to refuse sexual intercourse if she knows her partner had sex with other women. More importantly, 23% of females believe that women may not ask their partners to use condoms if their partner has a sexually transmitted infection [15]. It would be critical to explore for example, how women who experience domestic violence, cope with their HIV status, uptake of HIV medication, and viral load, with a view to guiding evidence-based prevention and care programmes.

Our geospatial analysis confirms the high prevalence of forms of GBV (emotional, physical and sexual) in the country, but particularly at the northern part of the country, in the provinces of Mashonaland West, Central and East, and Harare. There is need for the government of Zimbabwe to not only acknowledge the depth of the problem but to also design innovative approaches to reduce the occurrence of GBV. Programme managers could use microplanning approaches to identify geographic locations which require priority attention for targeting. Moreover, there is need for robust and sustained engagement of gatekeepers in communities such as religious, traditional, and cultural leaders, and government officials so as to sensitise them of the negative impact of GBV. Champions for the rights of women should be recruited at the local level to create a conducive environment for victims to report instances of GBV to the relevant authorities.

The main limitation of these findings is that ZDHS 2015 was a cross-sectional survey thus lowering our ability to make causal inference from the data. However, these findings still contribute to a better understanding of the HIV epidemic and its GBV-related risk factors in Zimbabwe; as well as catalyse further topical research around the interlinkages between the two epidemics (GBV and HIV), in light of recent environmental dynamic shifts, such as climate change, deepened economic insecurities, and humanitarian shocks such as COVID-19.

Conclusions

There is a significant association between forms of violence (emotional, physical, and sexual) and HIV status. The recent (2020) commitments made by Governments, globally and in Africa, to the International Conference on Population Development (ICPD), and Beijing Platform for Action; implies urgent redress of the GBV response, in particular violence against women and girls, in a costed and systematic manner. Global AIDS Report 2020 highlights GBV as a key driving force which is stalling achieving HIV response targets in all countries, and end AIDS by 2030 will not be achieved is certain

populations remain at risk of GBV. It is recommended that the government of Zimbabwe strengthen interventions that translate existing well-framed GBV related policies and legislation into practice, towards scaling-up accessible GBV prevention, care and support services. As essential services, in particular within fragile circumstances, such as the current COVID-19 pandemic environment. This includes visible budget allocations, which not only address the clinical GBV response, but also enable a synergised social protection response which embraces mental health, psychosocial support, and economic empowerment mechanisms for those at risk, as well as survivors of GBV and their families. Equipping law enforcement agencies with appropriate training, or refreshers, on correct and stigma-free reportage and swift link to health care and /or legal recourse, is also fundamental to this bolstered response. Collaboration with civil society and development partners of Government, to scale-up working models, is fundamental. Ample evidence illustrates that where GBV is eradicated from households, educational spaces, workplaces and communities, a healthier society emerges, and contributes to sustainable development.

Abbreviations

ELISA Enzyme Linked Immunosorbent Assay

GBV Gender Based Violence

HIV Human Immunodeficiency Virus

MoHCC Ministry of Health and Child Care

OR Odds Ratio

ZDHS Zimbabwe Demographic and Health Survey

Declarations

Ethics approval and consent to participate

Procedures and questionnaires for standard Demographic Health Surveys (DHS) have been reviewed and approved by the ICF International Institutional Review Board (IRB). Additionally, country-specific DHS survey protocols are reviewed by the ICF IRB and typically by an IRB in the host country. The ICF International IRB ensures that the survey complies with the U.S. Department of Health and Human Services regulations for the protection of human subjects, while the host country IRB ensures that the survey complies with laws and norms of the nation. In the original primary data collection for each DHS, informed consent was sought from all participants prior to serological testing for HIV (<http://dh.sprogram.com/What-We-Do/Protecting-the-Privacy-of-DHS-Survey-Respondents.cfm#sthash.Ot3N7n5m.dpuf>). We sought and were granted permission to use the core dataset for this analysis by MEASURE DHS

Consent to publish

Not applicable.

Availability of data and materials

The data that support the findings of this study are available from ICF but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of ICF.

Competing interests

All other authors declare that they have no competing interests.

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Authors' contributions

GM, MM, IC, FM conceived the study. GM & MM carried out the statistical analysis. GM wrote the first draft of the paper. All authors (GM, MM, ZM, IC, RE, DFC, TD and FM) contributed to the writing of the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1: Baseline characteristics for ZDHS 2015 -16 participant's data used in the analysis

Variable	Female Frequency n (%)
	N=5291
Age group in years	
15-19	283 (6)
20-24	917 (16)
25-29	1091 (20)
30-34	1159 (21)
35-39	808 (16)
40-44	655 (13)
45-49	378 (8)
Type of residence	
Urban	2132 (34)
Rural	3159 (66)
Highest education level	
None	69 (2)
Primary	1508 (30)
Secondary	3342 (61)
Higher	372 (7)
Marital status	
Married	4243 (79)
Living with partner	240 (4)
Widowed	265 (5)
Divorced	306 (7)
Separated	237 (5)
Religion	
Traditional	33 (1)
Roman catholic	324 (6)
Protestant	748 (14)
Pentecostal	1305 (24)
Apostolic sect	2259 (44)

Other Christian	295 (4)
Muslim	16 (0)
None	305 (6)
Other	6 (0)

Table 2: Association between GBV variables and HIV status

Variable	HIV Positive	HIV Negative	Odds Ratio (95% CI)	P value
	N (%)			
Emotional Violence (Did your (last) husband/partner ever do the following)				
Said or did something to humiliate in front of others				
No				
Yes				
	958 (19.2)	3679 (80.8)	1.45 (1.14- 1.84)	0.002
	177 (25.6)	477 (74.4)		
Threatened to hurt or harm or someone you care about				
	980 (19.4)	3686 (80.6)		
	155 (24.2)	470 (75.8)	1.33 (1.04- 1.68)	0.022
Insulted or made to feel bad about self.				
	831 (20.0)	3067 (80.0)		
	304 (20.1)	1089 (79.9)	1.01 (0.84- 1.22)	0.921
Physical Violence				
Push you, shake you, or throw something at you?				
No				

Yes				
	976 (19.1)	3739 (81.0)	1.67 (1.31-2.14)	0.001
	159 (28.3)	417 (71.7)		
Slap you?				
No	821 (20.1)	3075 (79.9)		
Yes	314 (19.9)	1081 (80.1)	0.99 (0.82-1.19)	0.906
Twist your arm or pull your hair?				
No				
Yes	1061 (19.8)	3942 (80.2)		
	74 (24.2)	214 (75.8)	1.30 (0.92-1.83)	0.142
Punch you with his fist or with something that could hurt you				
No				
Yes				
	987 (19.3)	3767 (80.7)		
	148 (25.9)	389 (74.1)	1.46 (1.14-1.86)	0.002
Kick you, drag you, or beat you up?				
No				
Yes				
	1014 (19.6)	3811 (80.4)		
			1.37 (1.05-	0.021

	121 (25.0)	345 (75.0)	1.78)	
Try to choke you or burn you on purpose?				
No				
Yes				
	1090 (19.7)	4064 (80.3)	1.86 (1.16- 2.99)	0.010
Threaten or attack you with a knife, gun, or any other weapon?				
No				
Yes				
	1094 (19.7)	4076 (80.3)	2.12 (1.35- 3.31)	0.001
Sexual violence				
Physically force you to have sexual intercourse with him even when you did not want to?				
No				
Yes				
	1018 (19.7)	3781 (80.3)	1.19 (0.91- 1.56)	0.209
Physically force you to perform any other sexual acts				

you did not want to?				
No				
Yes				
	1039 (19.9)	3833 (80.1)		
	96 (21.5)	323 (78.5)	1.10 (0.82- 1.48)	0.516
Force you with threats or in any other way to perform any sexual acts you did not want to?				
No				
Yes				
	1084 (19.7)	4034 (80.3)		
	51 (28.4)	122 (71.6)	1.61 (1.08- 2.41)	0.019

Figures

Figure 1

Spatial distribution of A) female HIV prevalence; B) emotional violence prevalence; C) physical violence prevalence; and D) sexual violence prevalence.