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VIOLENCE AGAINST WOMEN IS ASSOCIATED WITH HIV AMONG WOMEN IN BRAZIL

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ABSTRACT

This study aims to describe the contextual factors of violence against women and to examine its association with HIV sero-positivity in the Southeast and South regions of Brazil, where prevalence of both is among the highest in the country. We conducted a secondary analysis using GENIH study data, which surveyed HIV sero-positive women (n=1,511) and HIV sero-negative women (n=1,536) from public health clinics in São Paulo and Porto Alegre, Brazil. Women were at increased odds of being HIV sero-positive women if they experienced any lifetime violence (OR=1.63; 95%CI:1.41,1.88), lifetime physical violence (OR=1.47; 95%CI:1.27,1.70), lifetime sexual violence (OR=2.13; 95%CI:1.73, 2.63), and sexual violence at debut (OR=2.57; 95%CI:1.68,3.93). Among HIV sero-positive women, 27% were verbally assaulted by someone for being HIV-positive, whereas 3% were physically assaulted due to their HIV-positive status. Findings from this study will facilitate the development of integrated violence prevention and HIV care programs for women.

INTRODUCTION

More than 13 million women in Brazil are victims of intimate partner violence (IPV).[1] The World Health Organization (WHO) Multi-country Study on Women's Health and Domestic Violence estimates that around 23% of all Brazilian women have been victimized by violence, which translates to one woman victimized every 15 seconds.[2,3] Brazil also has the seventh highest femicide rate worldwide (i.e., women murdered by men; 4.4 per 100,000), which is the most severe form of gender-based violence.[1] Almost 45 million women were killed in Brazil over the last decade alone, which translates to nearly one femicide every two hours.[1] Rates of violence against women (VAW; including femicide) are markedly high in the Southeastern and Southern regions of Brazil, where São Paulo and Porto Alegre are located, respectively.[1] Despite the high prevalence in VAW in Brazil, there

is less understanding of the contextual factors linking violence to heterosexual risk for HIV in Brazil.

Violence against women has been documented as a cause and consequence of HIV.[4] Brazil has the largest number of people living with HIV in Latin America (n=730,000) and is one of 15 countries that account for 75% of the number of people living with HIV worldwide.[5] Although the HIV epidemic in Brazil is classified as stable at the national level, prevalence varies by geographic region and socio-demographic factors. The Southeastern and Southern regions have the highest HIV prevalence, accounting for 56% and 20% of all the people living with HIV in Brazil from 1983 to 2013, respectively.[6] Furthermore, the rate of HIV infection in women is growing among adolescent girls, as well as women over 50 years of age.[6] Violence and HIV in Brazil are clearly linked, with 98% of women living with HIV in Brazil reporting a lifetime history of violence and 79% reporting violence prior to HIV sero-positive diagnosis.[7] Despite these statistics, there are only two studies in Brazil to our knowledge that have examined VAW as a correlate of HIV seropositivity.[8,9] In the first study, suffering repeated and severe violence was closely associated with confirmed HIV infection.[8] In the second study, the prevalence of violence victimization was significantly higher in women living with HIV for >5 years than women living with HIV ≤5 years.[9] Violence research thus far has not clearly elucidated how VAW across contexts (e.g., type of violence, life course timing, and relationship to perpetrator) contributes to HIV infection or how HIV disclosure affects VAW in Brazil.

This present study sought to describe the contextual factors of violence victimization among women in Brazil and to examine their association with HIV infection. To achieve these aims, we conducted a secondary analysis on data from the GENIH study, which was conducted in São Paulo (Southeast region) and Porto Alegre (South region), Brazil – two regions with high prevalence of VAW and HIV. [1,10]

METHODS

Data. This study is a secondary analysis on population-based data from the GENIH study conducted in São Paulo (Southeast region) and Porto Alegre (South region), Brazil.

Data used in this study originated from two studies using identical sampling methodologies (GENIH in São Paulo, n=2,000 and GENIH in Porto Alegre, n=1,326).

Sampling. HIV sero-positive women were sampled from HIV/STD clinics in each city and HIV sero-negative women sampled from health care centers. A two-stage cluster sampling design was used to sample women of reproductive age (18-49 years) at the time of their healthcare appointment at public health centers (primary sampling unit). Health centers were listed by region in the city and 40 were randomly sampled with selection probabilities proportional to size based on the average number of women 18-49 years with visits in 2011 in each city. In the second sampling stage, 25 women were randomly selected from a list of scheduled and walk-in appointments on days of interview. Selected women were approached by field staff, informed consent was obtained, eligibility was confirmed with a brief online questionnaire, and the purpose and procedures of the study were explained.

Survey Data Collection. Survey data was collected via electronic netbooks with QDS software.[11]

Dependent variables. The primary outcome variable for this study is HIV sero-positive status.

Independent variables. The primary independent variable for this study is lifetime experience of violence victimization, which is captured by any violence, physical violence, sexual violence during first sex, and sexual violence. Violence measures were adapted from the WHO Multi-country Study on Women's Health and Domestic Violence.[2] In each incident of violence (except for sexual violence during debut), women were asked about lifetime and past 12 month occurrence of violence, frequency, life course timing (childhood, adult, or both), and perpetrator (intimate partner, family member, friend, boss/colleague, stranger). Key independent variables include socio-demographic characteristics, including age, race, religion, parity, income, and number of sexual partners in the past 12 months. In addition, a battery of variables regarding HIV-related disclosure, discrimination, and violence will be included in a sub-analysis of only HIV sero-positive women.

Statistical Approach. We first conducted a descriptive analysis of the entire sample by socio-demographic characteristics and violence victimization experience. Then, we ran cross-tabulations using the Chi-square statistic to identify any significant differences between HIV sero-negative and HIV sero-positive women by socio-demographic characteristics and violence victimization experience. We then used logistic regression to identify individual-level correlates of HIV infection. Lastly, we conducted a sub-analyses to describe disclosure behavior and discrimination experienced by women living with HIV in Brazil and how this is associated with violence victimization.

RESULTS

Table 1 shows the frequency distribution of socio-demographic factors and violence (type, extent of victimization, perpetrator, and life course timing) for the total sample and by HIV status. On average, women were 34.3 years old, most had a lower secondary school or more education, half were of white race, almost one-third had no religious affiliation, two-thirds had a personal income, had an average of 1.8 children, and had an average of 1.1 sexual partners in the prior 12 months. Stratified by HIV infection status, women differed significantly on almost all socio-demographic variables except for the number of sexual partners in the past 12 months. Compared to HIV-negative women, HIV sero-positive women were on average, much older, had less formal education, were of Black race, reported being more religious, had more children, and reported personal income.

Experiences of violence were frequent among this sample of women in Brazil (Table 1). Forty-two percent of women report experiencing any form of violence in their lifetime, with 58% experiencing physical violence, 3.5% reporting sexual violence during first sexual experience, and 15% reporting sexual violence. Among women who reported physical violence, one-quarter experienced physical violence on more than two occasions, from an intimate partner (58.4%) and family member (34.8%), and 45% experienced this during childhood or adolescence. Among women who reported sexual violence, 6.6% experienced sexual violence on more than two occasions, from an intimate partner (54.5%), a stranger (21.1%), and/or a family member (14.1%), and 39.8% experienced this during childhood or

adolescence. Women who are living with HIV reported significantly greater frequencies of any violence, physical violence, and sexual violence than HIV-negative women, whereas significantly more HIV-negative women reported sexual violence at debut than women living with HIV.

Table 2 shows the odds ratios of bivariate associations between socio-demographic characteristics and violence victimization variables by HIV sero-status to better understand the Brazilian context. Among the socio-demographic variables, older age, being of Black (compared to white) race, reporting a religion, having children, and having a personal income were significantly associated with increased odds of being HIV sero-positive, whereas having a lower secondary school education (compared to primary school or less), being of Parda/Brown/Mixed (compared to white) race were significantly associated with decreased odds of being HIV sero-positive.

Women were at increased odds of being HIV sero-positive women if they experienced any violence during their lifetime (OR=1.63; 95% CI: 1.41, 1.88), physical violence during their lifetime (OR=1.47; 95% CI: 1.27, 1.70), sexual violence during their lifetime (OR=2.13; 95% CI: 1.73, 2.63), and sexual violence at debut (OR=2.57; 95% CI: 1.68, 3.93). A dose-response effect was found between extent of violence experienced and HIV sero-positive status, such that with greater frequency of experiencing violence, women are at increasingly greater odds of being HIV sero-positive. In future analyses, we will seek to run adjusted models to understand the distinct effects of each type of violence (and perpetrator) on the odds of being HIV sero-positive.

Table 3 describes the more nuanced experiences of violence, disclosure, and discrimination among women living with HIV in Brazil. Our sample reveals that 21% of women have not disclosed their HIV sero-positive status to anyone. Furthermore, only 40% of women had disclosed their HIV sero-positive status to their intimate partner and even less had disclosed to their family members, friends, and work colleagues. With respect to violence, 27% of the sample reported being verbally assaulted by someone for being HIV sero-positive, whereas 3% reported being physically assaulted due to their HIV sero-positive

status. In future analyses, we seek to model how HIV-related violence, disclosure, and discrimination overlap with experiences of physical and sexual violence among women, which will allow us to capture the intersecting vulnerabilities experienced by women who are living with HIV in Brazil.

DISCUSSION

Since Brazil has HIV Specialized Care Service clinics through the National Health Care System (Unified Health System), findings from this study will facilitate the development of integrated violence prevention and HIV care programs for women. An example program, the Safe Homes and Respect for Everyone (SHARE) Intervention in Uganda, was recently found to be associated with significant declines in physical and sexual IPV and overall HIV incidence.[14,15] As such, it is feasible to have IPV prevention strategies integrated into existing HIV programming to facilitate reductions in these two intersecting epidemics in underserved settings such as Brazil.

Table 1. Characteristics of women with and without HIV infection in South and Southeast Brazil (n=3,047)

Variables	HIV- (n=1,536ǂ)		HIV+ (n=1,511ǂ)		p-value	Total Sample nǂ	%
SOCIO-DEMOGRAPHIC							
Age	31.7(9.1)	18 to 49	37.0(7.8)	19 to 49	<0.0001	34.3(8.8)	18 to 49
Education							
Primary school or less	564	36.7	679	44.9	<0.0001	1243	40.8
Lower secondary	821	53.5	639	42.3		1460	47.9
Some upper secondary and more	151	9.8	193	12.8		344	11.3
Race/Ethnicity							
White	767	49.9	743	49.2	<0.0001	1510	49.6
Parda/Brown/Mixed	523	34.1	418	27.7		941	30.9
Black	212	13.8	325	21.5		537	17.6
Asian/Indigenous	34	2.2	25	1.7		59	1.9
Religion							
No Religion	491	32.0	419	27.7	<0.0001	910	29.9
Catholic	514	33.5	399	26.4		913	30.0
Pentacostal Evangelical	369	24.0	437	28.9		806	26.5
Espirita/Spiritism	74	4.8	139	9.2		213	7.0
Candomble/Santaria	59	3.8	74	4.9		133	4.4
Other	29	1.9	43	2.9		72	2.4
Number of children	1.6(1.5)	0 to 13	2.0(1.7)	0 to 11	<0.0001	1.8(1.6)	0 to 13
Has Personal Income							
No	825	53.7	280	18.5	<0.0001	1105	36.3
Yes	711	46.3	1,231	81.5		1942	63.7
No. of sexual partners last 12 months	1.1(1.4)	0 to 50	1.1(2.9)	0 to 100		1.1(2.3)	0 to 100
VIOLENCE							
Any Violence (lifetime)	561	36.5	731	48.4	<0.0001	1292	42.4
Physical Violence (lifetime)	502	32.68	629	41.63	<0.0001	1131	37.12
Frequency Physical Violence (lifetime							
Never	1,034	67.3	882	58.4	<0.0001	1916	62.9
1-2 times	192	12.5	193	12.8		385	12.6
Several times	146	9.5	203	13.4		349	11.5
Many times	164	10.7	233	15.4		397	13.0
Physical Violence Perpetrator*							
Intimate partner	256	51.0	404	64.2	<0.0001	660	58.4
Family member	194	38.7	199	31.6	<0.05	393	34.8
Friend	50	10.0	26	4.1	<0.0001	76	6.7
Work colleague/boss	9	1.8	9	1.4		18	1.6
Stranger	20	4.0	51	8.1	<0.01	71	6.3
Other	41	8.2	50	8.0		91	8.1
Physical Violence Timing							
Childhood or Adolescence	254	50.6	257	40.9	<0.01	511	45.2
Last 12 months	61	12.2	63	10.0		124	11.0
Sexual Violence at Debut	31	2.0	76	5.0	<0.0001	107	3.5
Sexual Violence (lifetime)	158	10.29	297	19.66	<0.0001	455	14.93
Frequency Sexual Violence							
Never	1,378	89.7	1,214	80.3	<0.0001	2592	85.1
1-2 times	95	6.2	160	10.6		255	8.4
Several times	37	2.4	68	4.5		105	3.5
Many times	26	1.7	69	4.6		95	3.1
Sexual Violence Perpetrator*							
Intimate partner	92	58.2	156	52.5		248	54.5
Family member	23	14.6	41	13.8		64	14.1
Friend	5	3.2	15	5.1		20	4.4
Work colleague/boss	2	1.3	6	2.0		8	1.8
Stranger	27	17.1	69	23.2		96	21.1
Other	14	8.9	35	11.8		49	10.8
Sexual Violence Timing							
Childhood or Adolescence	61	38.6	120	40.4		181	39.8
Last 12 months	9	5.7	15	5.1		24	5.3

Source: GENIH Study 2011-2013; ǂ mean(standard deviation) and range for continuous variables

Table 2. Bivariate odds ratio (OR) of being HIV Sero-Positive in South and Southeast Brazil (N=3,047)

Variables	OR	95% CI
SOCIO-DEMOGRAPHIC		
Age	1.07	(1.06, 1.08)
Education		
Primary school or less		1.00
Lower secondary	0.65	(0.56, 0.75)
Some upper secondary and more	1.06	(0.83, 1.35)
Race/Ethnicity		
White		1.00
Parda/Brown/Mixed	0.83	(0.70, 0.97)
Black	1.58	(1.29, 1.93)
Asian/Indigenous	0.76	(0.45, 1.28)
Religion		
No Religion		1.00
Catholic	0.91	(0.76, 1.09)
Pentacostal Evangelical	1.39	(1.14, 1.68)
Espirita/Spiritism	2.20	(1.61, 3.00)
Candomble/Santaria	1.47	(1.02, 2.12)
Other	1.74	(1.07, 2.83)
Number of children	1.21	(1.15, 1.27)
Has Personal Income		
No		1.00
Yes	5.10	(4.32, 6.01)
No. of sexual partners last 12 months	1.00	(0.96, 1.03)
VIOLENCE		
Any Violence (lifetime)*	1.63	(1.41, 1.88)
Physical Violence Victimization (lifetime)*	1.47	(1.27, 1.70)
Frequency Physical Violence (lifetime)		
Never		1.00
1-2 times	1.18	(0.95, 1.47)
Several times	1.63	(1.29, 2.05)
Many times	1.67	(1.34, 2.07)
Physical Violence Perpetrator*		
Intimate partner	1.82	(1.53, 2.18)
Family member	1.05	(0.85, 1,30)
Friend	0.52	(0.32, 0.84)
Work colleague/boss	1.02	(0.40, 2.57)
Stranger	2.65	(1.57, 4.46)
Other	1.25	(0.82, 1.90)
Physical Violence Timing*		
Childhood or Adolescence	1.03	(0.86, 1,25)
Last 12 months	1.05	(0.90, 1.06)
Sexual Violence at Debut*	2.57	(1.68, 3.93)
Sexual Violence Victimization (lifetime)*	2.13	(1.73, 2.63)
Frequency of Sexual Violence Victimization (lifetime)		
Never		1.00
1-2 times	1.91	(1.47, 2.49)
Several times	2.09	(1.39, 3.14)
Many times	3.01	(1.91, 4.76)
Sexual Violence Perpetrator*		
Intimate partner	1.81	(1.38, 2.36)
Family member	1.83	(1.09, 3.07)
Friend	3.07	(1.11, 8.47)
Work colleague/boss	3.06	(0.62, 15.17)
Stranger	2.67	(1,70, 4.20)
Other	2.58	(1.38, 4.81)
Sexual Violence Timing*		
Childhood or Adolescence	2.09	(1.52, 2.86)
Last 12 months	1.70	(0.74, 3.90)

Source: GENIH Study 2011-2013; Exponentiated coefficients; 95% confidence interval; *Reference group for each category is no violence

Table 3. Frequencies of HIV sero-positive status disclosure, discrimination and violence among HIV sero-positive women in South and Southeast Brazil (N=1,522)

Variables	Total Sample¥ n	100%
HIV+ DISCLOSURE		
Who disclosed HIV+ status to:*		
No one	319	21.0
Intimate partner	604	40.0
Father/Step-father	181	12.0
Mother/Step-mother	512	33.9
Children	150	9.9
Brother/Sister	491	32.5
Other Family	257	17.0
Friends	222	14.7
Work colleague/boss	68	4.5
Other	74	4.9
DISCRIMINATION		
By someone in health services for being HIV+	337	22.3
HIV-RELATED VIOLENCE		
Verbally assaulted by someone for being HIV+	404	26.7
Verbally assaulted by:*		
Intimate partner	86	5.7
Father/Step-father	181	12.0
Mother/Step-mother	512	33.9
Work colleague/boss	45	3.0
Health Professional	42	2.8
Unknown	34	2.3
Other	235	15.6
Physically assaulted by someone for being HIV+	42	2.8
Physically assaulted by:*		
Intimate partner	19	1.3
Father/Step-father	0	0.0
Mother/Step-mother	2	0.1
Work colleague/boss	1	0.1
Health Professional	1	0.1
Unknown	3	0.2
Other	15	1.0

Source: GENIH Study 2011-2013; ¥ Columns may not add to full sample due to *not mutually exclusive categories

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