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Association between intimate partner violence against women and HIV infection

ABSTRACT

OBJECTIVE: To analyze the association between intimate partner violence against women and infection or suspected infection by the human immunodeficiency virus (HIV).

METHODS: A cross-sectional study was conducted, based on data from questionnaires applied face-to-face and medical records of 2,780 women aged between 15 and 49 years, cared for in *Sistema Único de Saúde* (Unified Health System) units of the Greater São Paulo area, Southeastern Brazil, in 2001-2002. Women were categorized into: users in treatment because they are "HIV seropositive", those "suspected of having HIV" and others who sought health services for different reasons. Intimate partner violence against women throughout life was categorized according to the severity and recurrence of episodes of violence. The association with the outcome was tested using the Poisson model with robust and adjusted variance for sociodemographic, sexual and reproductive variables.

RESULTS: The prevalence of violence was 59.8%. Suffering repeated and severe violence was more closely associated with confirmed HIV infection (PR = 1.91). Violence independent from severity and recurrence of episodes showed greater association with suspected HIV infection (PR = 1.29).

CONCLUSIONS: Intimate partner violence against women has a key role in situations of suspected and confirmed HIV infection. Thus, it is essential to include its detection, control and prevention as part of the comprehensive care provided for women's health.

DESCRIPTORS: Violence Against Women. HIV Infections. Women's Health. Spouse Abuse. Intimate partner violence.

INTRODUCTION

The harms to the health of women who suffer intimate partner violence (IPV), whether of a psychological, physical or sexual nature, are known worldwide.¹⁰ Among them, there is the AIDS pandemic. In Kenya, 40% of women who suffered physical violence by an intimate partner were infected with the human immunodeficiency virus (HIV) by their partners. The greatest proportion of cases of infection remained associated with violence, even after adjusting for sociodemographic variables.⁶

In the United States, a strong association was observed between suffering physical and/or sexual IPV and HIV infection (OR = 3.44) among 13,928 women aged 20 years or more, even after adjusting for sociodemographic variables, age of first sexual relation and report of other sexually transmitted diseases (STD).¹⁶

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A cross-sectional study conducted in India observed that HIV-infected women suffered 3.9 times more physical and/or sexual violence than those who were seronegative.¹⁹ However, this finding could have resulted from reverse association, once violence was informed when HIV infection was diagnosed.

A Brazilian study that estimated prevalences of psychological, physical and sexual IPV among women aged between 15 and 49 years, users of the Sistema Único de Saúde (SUS – Brazilian Unified Health System) in the Greater São Paulo area showed a prevalence of 70% of IPV (of any type of violence) in HIV-infected users and those seeking services for an HIV infection test. Of these, 63% reported psychological violence; 52%, physical violence; and 28%, sexual violence. Physical and sexual types of violence, usually overlapped with each other, corresponded to 56% altogether.¹⁷

The high prevalence of IPV suffered by women in Brazil, in conjunction with studies on its associated factors, point to the relevance of knowing its role in confirmed or suspected HIV infection among women. This study aimed to analyze the association between IPV against women and the infection or suspected infection with HIV.

METHODS

A cross-sectional study was conducted with 3,193 female SUS users, aged between 15 and 49 years and living in the city of São Paulo, Southeastern Brazil, between 2001 and 2002.

All the 19 services were selected by convenience (Schraiber et al),¹⁷ of which 18 were primary care units and one was a Centro de Referência e Treinamento em DST/AIDS (AIDS/HIV Training and Reference Center), regrouped in nine places, geographically well distributed in the Greater São Paulo area.¹⁷ The sample of women was consecutive, i.e., they were selected for interview in order of arrival in the service. Of all the 3,193 women, 2,780 were users for more than one year, had their medical records analyzed and thus comprised the final sample. Among participants, 179 (6.4%) were HIV-seropositive, 995 (35.8%) sought the services because they had a certain STD or because they wanted to have the anti-HIV test performed and 1,606 (57.8%) sought these services for any other reasons.

The independent variables analyzed were as follows: sociodemographic (age, marital status, level of education, self-reported ethnicity, religion); and reproductive and sexual (number of pregnancies, age of first sexual relation – before or after the age of 15 years). Questions about types of IPV included concrete acts (well distinguished acts of aggression) suffered by women or not, at least once in their lives (Figure).

IPV categories were re-classified to indicate severity and recurrence of the perpetrated act.

The instrument used was that of the multi-country study to estimate IPV, coordinated by the World Health Organization (WHO), in which Brazil⁸ participated. According to this study, IPV severity was based on direct physical repercussions of acts (presumed physical injuries) of physical and sexual types of violence. The definition of severity used did not include psychological violence. Sexual violence, based on forced penetration, was considered severe violence for all its items. In contrast, physical violence was considered severe for positive responses to any of its four last items (questions 3, 4, 5 and 6 of the Figure) and moderate for the “yes” response to any of the two first items of physical violence and negative response to the remaining ones. Other acts of violence, described as “remaining forms of violence”, were the items of exclusive psychological violence and referred to the “yes” response to any of its four items (Figure) and negative response to any item of physical or sexual IPV. In the multi-country study in Brazil, exclusive psychological violence is particularly comprised of insults, contempt and humiliations. Intimidations and threats frequently overlap physical IPV.¹⁸ Thus, a different category of severity can be included in “remaining forms of violence”, implied in terms of

Psychological violence

Has he insulted you or made you feel bad about yourself?

Has he belittled or humiliated you in front of other people?

Has he done things to scare or intimidate you on purpose?

Has he threatened to hurt you or someone you care about?

Physical violence

Has he slapped you or thrown something at you that could hurt you?

Has he pushed or shoved you?

Has he hit you with his fist or with something else that could hurt you?

Has he kicked you, dragged you or beaten you up?

Has he choked or burnt you on purpose?

Has he threatened to use or actually used a gun, knife or other weapon against you?

Sexual violence

Has he physically forced you to have sexual intercourse when you didn't want to?

Did you ever have sexual intercourse when you didn't want because you were afraid of what he might do?

Has he forced you to do something sexual that you found degrading or humiliating?

Figure. Questions about intimate partner violence.

possible health problems resulting from violence, such as harms to mental health or indirect physical health problems. In the present study, the severity of violence was analyzed according to the following categories: without violence, moderate violence, severe violence, and remaining forms of violence. This last category was created to avoid diluting cases of violence which did not correspond to the sexual or physical types, in the reference category (without IPV).

The recurrence of episodes was classified as follows: without IPV, sporadic physical and/or sexual IPV (if occurring once or a few times) and recurrent physical and/or sexual IPV (if occurring many times).

Types of violence were combined for modeling, according to severity and recurrence. Sporadic and recurrent forms of violence were only integrated in the case of moderate physical violence, because a statistically significant difference was not observed in terms of recurrence. This ensured satisfactory sample size in the category.

The dependent variable was constructed according to reasons to seek the service in the previous year: "HIV-seropositive women" (with knowledge about diagnosis, seeking treatment/follow-up), "women with suspected HIV infection" (infected with other STDs and/or seeking anti-HIV testing) and "without suspected HIV" (other reasons).

Variables were described according to proportions and the hypothesis test was Pearson's chi-square.

Poisson model with robust variance was used to estimate the association between violence and infection or suspected infection with HIV.

The dependent variable used as reference in the modeling was "without suspected HIV". A total of two models were constructed: one using seropositivity as outcome and the other, suspected infection, both with the same reference category.

Independent variables with $p < 0.20$ after univariate analysis (Pearson's chi-square) were selected for the multiple model with variables related to violence, adjusted for the remaining ones.

Inclusion of the socio-demographic, reproductive and sexual variables in the model was made in an increasing order of p-value of the univariate analysis. Adjustment of Poisson model was observed with the Wald and Hosmer Lemeshow test.

The model was confirmatory, in which the association of IPV in the outcomes of interest is tested and other (independent) predictive variables are included for

adjustment, without an in-depth analysis of specific associations. This type of modeling was selected to estimate the relevance of violence when there was suspected or confirmed HIV infection.

Stata 10.0 was used to perform the analyses.

This research project was approved by the Research Ethics Committee of the Faculdade de Medicina e Hospital das Clínicas on May 12th, 2000. A signed Informed Consent Form was used, in addition to other ethical measures recommended by the World Health Organization (WHO) for sensitive issues such as violence.^{18,a}

RESULTS

The majority of women were aged between 29 and 39 years, married, non-black and Catholic and had up to eight years of education. In addition, most of them initiated their sexual life at an age older than 15 years and had had four or more pregnancies until the interview (Table 1).

Prevalence of IPV was high (59.8 %), especially for severe violence (32.1%) (Table 1).

In the univariate analysis, there was an association between seropositivity and not having a partner, not being black, having a higher level of education and beginning one's sexual life at the age of 15 years or less. Severe violence was associated with seropositivity, with a greater magnitude observed for recurrent violence (Table 2).

Sociodemographic and reproductive variables were associated with suspected HIV, except for ethnicity and religion. Being aged between 29 and 39 years, not living with a partner, having a higher level of education, having had up to three pregnancies, and beginning one's sexual life at 15 years of age or less showed a higher level of association. Having suffered severe and episodic violence was also associated with the outcome (Table 2).

Severe and recurrent violence remained associated with seropositivity after adjusting for the remaining variables, thus reducing its magnitude. Severe episodic violence lost significance when marital status was included in the model (Table 3).

Seeking services due to suspected HIV infection continued to be associated with moderate and severe violence, independently from recurrence, after adjustment (Table 3).

^a World Health Organization. Putting women's safety first: ethical and safety recommendations for research on domestic violence against women. Geneva; 1999. (WHO/EIP/GPE/99.2).

Table 1. Frequency and percentage of sociodemographic, sexual and reproductive characteristics and those related to intimate partner violence against women without infection, with suspected infection, HIV-seropositive and suspected HIV infection. São Paulo, Southeastern Brazil, 2001-2002.

Variable	Total sample		Without infection and suspected infection		HIV-seropositive		Suspected HIV infection	
	n	%	n	%	n	%	n	%
Sociodemographic characteristics								
Age (years)								
15 to 29	654	23.5	412	25.7	66	36.9	176	17.7
29 to 39	1,299	46.7	726	45.2	24	13.4	549	55.2
39 to 50	827	29.8	468	29.1	89	49.7	270	27.1
p*								0.000
Marital status								
Married	1,776	63.9	1,093	68.1	77	43.0	606	60.9
Not living with the partner	457	16.4	229	14.2	25	14.0	203	20.4
Does not have a partner	547	19.7	284	17.7	77	43.0	186	18.7
p*								0.000
Level of education (years)								
Does not know	217	7.8	136	8.5	7	4.0	74	7.4
0 to 8	1,928	69.4	1,154	71.9	123	68.7	651	65.4
9 to 11	546	19.6	281	17.5	40	22.3	225	22.6
More than 12	89	3.2	35	2.2	9	5.0	45	4.6
p*								0.000
Ethnicity								
Black	1,036	37.3	625	38.9	54	30.2	357	35.9
Not black	1,744	62.7	981	61.1	125	69.8	638	64.1
p*								0.038
Religion								
Catholic	1,624	58.4	950	59.2	74	41.3	600	60.3
Not Catholic	1,156	41.6	656	40.8	105	58.7	395	39.7
p*								0.000
Reproductive and sexual characteristics								
Number of pregnancies								
None	624	22.4	378	23.5	58	32.4	188	18.9
1 to 3	503	18.1	266	19.6	21	11.7	216	21.7
4 or more	1,653	59.5	962	59.9	100	55.9	591	59.4
p*								0.000
Age of first sexual relation								
Does not know	98	3.5	76	4.7	1	0.6	21	2.1
≤ 15 years	712	25.6	370	23.1	48	26.8	294	29.6
≥ 15 years	1,970	70.9	1,160	72.2	130	72.6	680	69.3
p*								0.000
Characteristics related to violence suffered throughout life								
Has not suffered violence	1,079	40.2	667	43.5	50	27.9	362	37.2
Exclusively psychological	418	15.6	241	15.7	20	11.2	157	16.1
Moderate (episodic or recurrent)	326	12.1	182	11.8	21	11.7	123	12.6
Severe and episodic	523	19.5	268	17.5	39	21.8	216	22.2
Severe and recurrent	341	12.6	176	11.5	49	27.4	116	11.9
p*								0.000

Chi-square test

Table 2. Proportion and crude prevalence ratio of socio-demographic, reproductive and sexual characteristics and those related to violence, according to HIV-seropositivity and suspected HIV infection. São Paulo, Southeastern Brazil, 2001-2002.

Variables	HIV-seropositivity			Suspected HIV infection		
	%	PR crude	95%CI	%	PR crude	95%CI
Sociodemographic characteristics						
Age (years)						
15 to 29	36.9	1		17.7	1	
29 to 39	13.4	0.23	0.1;0.3	55.2	1.43	1.2;2.2
39 to 50	49.7	1.15	0.8;1.5	27.1	1.22	1.0;1.4
Marital status						
Married	43.0	1		60.9	1	
Does not live with the partner	14.0	1.49	0.9;2.3	20.4	1.31	1.2;1.5
Does not have a partner	43.0	3.24	2.4;4.3	18.7	1.10	0.9;1.3
Level of education (years)						
Does not know	4.0	1		7.4	1	
0 to 8	68.7	1.96	0.9;4.1	65.4	1.02	0.8;1.2
9 to 11	22.3	2.54	1.2;5.5	22.6	1.26	1.0;1.5
More than 12	5.0	4.17	1.6;10.6	4.6	1.59	1.2;2.1
Ethnicity						
Black	30.2	1		35.9	1	
Not black	69.8	1.42	1.0;1.9	64.1	1.08	0.9;1.2
Religion						
Catholic	41.3	1		60.3	1	
Not Catholic	58.7	1.91	1.4;2.5	39.7	0.97	0.9;1.1
Reproductive and sexual characteristics						
Number of pregnancies						
None	32.4	1		18.9	1	
1 to 3	11.7	0.55	0.3;0.9	21.7	1.34	1.2;1.6
4 or more	55.9	0.70	0.5;0.9	59.4	1.14	1.0;1.3
Age of first sexual relation						
Does not know	0.6	1		2.1	1	
≤ 15 years	26.8	8.84	1.2;63.1	29.6	2.04	1.4;3.0
> 15 years	72.6	7.75	1.1;54.7	69.3	1.70	1.2;2.5

DISCUSSION

This was the first Brazilian study on the association between suffering or having suffered physical or sexual violence by intimate partner and having confirmed or suspected HIV infection. A population-based study conducted in the United States shows the association between physical and/or sexual violence suffered in the previous year and the positive diagnosis of HIV infection.¹⁵ The present study also includes the association between outcome and severe and recurrent forms of violence.

Taking into account the cross-sectional nature of the present study, it is not possible to exclude reverse association, because violence could have occurred after HIV infection and its revelation to one's partner. Women

who revealed their seropositivity can become targets of domestic violence perpetrated by their partners.^{9,21}

When a woman reveals her positive diagnosis to her partner, especially if he is HIV-seronegative, this can trigger acts of physical violence.²² Violence suffered by seropositive women raises questions about care in terms of revealing the diagnosis, which may have repercussions for treatment. Situations of violence should be diagnosed by professionals, who must be able to deal with these situations and promote greater adherence to treatment.

Certain mechanisms could explain the association between intimate partner violence and HIV infection. Having sex due to marital obligation or without one's willingness, and the more explicit forms of sexual

Table 3. Crude and adjusted prevalence ratio of HIV-seropositive women and those with other STDs and/or who had had an anti-HIV test performed, according to violence. São Paulo, Southeastern Brazil, 2001-2002.

Violence suffered throughout life	HIV-seropositivity					Suspected HIV infection				
	%	Crude PR	95%CI	Adjusted PR ^a	95%CI	%	Crude PR	95%CI	Adjusted PR ^a	95%CI
Has not suffered violence ^b	27.9	1		1		37.2	1		1	
Exclusively psychological	11.2	1.09	0.7;1.8	1.12	0.7;1.8	16.1	1.12	0.9;1.3	1.10	0.9;1.3
Moderate (episodic or recurrent)	11.7	1.48	0.9;2.4	1.31	0.8;2.0	12.6	1.14	0.9;1.3	1.18	1.0;1.4
Severe and episodic	21.8	1.82	1.2;2.7	1.44	0.9;2.1	22.2	1.26	1.1;1.4	1.29	1.1;1.5
Severe and recurrent	27.4	3.12	1.2;4.5	1.91	1.3;2.8	11.9	1.12	0.9;1.3	1.24	1.0;1.5

^a Model adjusted for age, marital status, level of education, religion, ethnicity, number of pregnancies, and age of first sexual relation.

^b Reference variable: "Seeking health services for any other health reasons"

violence (rape, forced sex or sex due to fear), for example, result in greater vulnerability to infection caused by sexually transmitted diseases, because these usually occur without the use of condoms^{2,11} and can cause genital or anal lesions that promote infection.¹

There is a study that suggests that men may understand the fact that their wives have the HIV test performed as being associated with their sexual promiscuity. In addition, in this same study, men reported making holes in condoms to make their partners pregnant, even against their will.¹² The literature points to a higher number of children among women who suffer violence.^{3,11,13} In this way, even with the use of condoms, there is the risk of HIV transmission.

The results of the present study are similar to those that indicate a higher rate of violence among women with a great number of children and lower use of condoms in sexual relations, and who had had a certain sexually transmitted disease throughout life.^{5,20}

The fact that the present study dealt with women users of health services is a limitation, especially when it comes to population-based studies, because they only include women who already have a certain health demand and are seeking health care. In addition, there are also gaps related to detailed questions about the sexual and reproductive life and HIV infection of these women, such as the number of sexual relations without condoms throughout life. Another question is the temporality between exposure and outcome. Given the fact that it

is not possible to control temporality in cross-sectional studies, intimate partner violence could have occurred before infection or after the confirmation of diagnosis and its revelation to one's partner. In the first case, this will be a relevant factor for risk of HIV infection and other STDs. This last hypothesis is strongly suggested by the results found here of violence being also associated with suspected HIV infection, in addition to female users already diagnosed with HIV infection.

The identification of IPV as a factor associated with HIV can enable the development of new strategies to prevent this epidemic which, although concentrated, has increased among women.^{4,7}

Violence suffered by women must be considered when seeking health services, including the offer of anti-HIV tests and counseling for infected women. Detection of violence against women in health services is necessary, in addition to proposing measures for violence control and prevention as part of comprehensive care actions aimed at women, particularly those infected with HIV. Considering sexual violence in particular, until now, only women who suffer violence perpetrated by strangers are provided with preventive practices, such as HIV chemoprophylaxis, in specific reference services for this type of violence. What must be changed urgently is the type of health care provided to women, victims of intimate partner violence, in health services in general. These partners should also be the target of preventive care.

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