

Types and risk factors of violence experienced by people living with HIV, Pakistan: a cross-sectional study

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Abstract

Background: In Pakistan, data are lacking on the violence experienced by people living with HIV.

Aims: This study determined the prevalence and risk factors of violence (physical, psychological and sexual) in people living with HIV in Karachi, Pakistan.

Methods: This was a cross-sectional study in 2016 of people living with HIV attending clinics of Bridge Consultants Foundation, a community-based care provider. Data were collected using an interview-based questionnaire. Multivariate logistic regression analysis was done to assess the risk factors for violence with adjusted odds ratios (aOR) and 95% confidence intervals (CI) presented.

Results: The sample included 250 people living with HIV; 183 were men, 60 were women and 7 were transgender. The mean (standard deviation) age of the participants was 30 (6.5) years. The prevalence rates of psychological, sexual and physical violence were 79.6%, 74.8% and 64.4%, respectively. More women experienced physical violence than men (76.2% versus 60.7%). Psychological violence was associated with injecting drug use (aOR = 2.64, 95% CI: 1.27–5.50) and being married (aOR = 0.46, 95% CI: 0.24–0.90). Marriage (aOR = 2.30, 95% CI: 1.27–4.16) and having an HIV-positive partner (aOR = 2.07, 95% CI: 1.09–3.92) were risk factors for sexual violence. Physical violence was associated with young age (aOR = 0.95; 95% CI: 0.91–0.99) and having an HIV-positive partner (aOR = 2.17, 95% CI: 1.10–4.26).

Conclusion: Violence is an important public health problem affecting people living with HIV in Pakistan. This issue needs to be addressed by the government and nongovernmental organizations.

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Introduction

HIV/AIDS is a major health problem, especially for the developing world. According to the World Health Organization (WHO) estimates for 2016, globally about 36.7 million people are living with HIV/AIDS (1). Pakistan has a population of 190 million people and is the sixth most populous country in the world (2). The distribution of HIV incidence represents a concentrated epidemic in high-risk groups. Several factors such as poverty, illiteracy, lack of awareness, drug use and frequent migration make the Pakistan population vulnerable to contracting HIV (3). Data are limited on the number of people living with HIV, number of new HIV/AIDS registrations and mortality in people with HIV in Pakistan. The 2015 Global Burden of Disease study estimated trends in the HIV/AIDS burden in countries of the WHO Eastern Mediterranean Region and reported the age-standardized prevalence of HIV was 22.3 (6.0–59.6) per 100 000 population in Pakistan (4). According to the most recent report of Pakistan’s National AIDS Control Programme (5) nearly 133 000 people in the country were living with HIV/AIDs at the end of 2017 (6), but only 20 322 were registered with the 21 HIV treatment centres in the country. Because of the social stigma attached to the disease, most people with HIV hesitate to register themselves for treatment (7). Pakistan’s epidemic is primarily concentrated in a few population groups. These groups are: people who inject drugs (national prevalence of 33%) (8); transgender sex workers (5.5%); and male sex workers (3.7%) (6). Fortunately, the prevalence in female sex workers is still low (0.6%) (9). In Sindh province, an estimated 8752 people are living with HIV/AIDS, with 6188 (71%) of them living in Karachi.

Increasingly, evidence links the HIV epidemic and violence (by intimate partners, clients and state forces) (10,11). High levels of violence were reported in female sex workers in Pakistan – 66% reported violence by husbands and 38% by clients (12). Among male and transgender sex workers, police and clients were the most common perpetrators of violence and 24% male and transgender sex workers provided free sex to police (12).

Although the prevalence of HIV/AIDS is low in Pakistan, stigma associated with the diseases has implications for this vulnerable population. These people do not seek HIV testing or disclose their HIV-positive status, thus putting their health and the health of their partners at risk. Very few people want to register themselves and among the people who are registered, very few turn up for treatment (13,14). Violence in people living with HIV is very common; however, this issue has not been studied in Pakistan. The goal of this study therefore was to determine the prevalence and types of violence experienced by people living with HIV in Karachi, the largest city of Sindh province in Pakistan. We also aimed to identify the risk factors associated with violence.

Methods

Study setting, design and sample

This study was conducted in collaboration with Bridge Consultants Foundation. This foundation is a community-based home care provider which works for advocacy of health, education and social development of impoverished communities in the country. Bridge works closely with government and nongovernmental organizations including Infection Control Society Pakistan and Infectious Diseases Society of Pakistan for the prevention and control of infectious diseases in the country. Bridge provides facilities to screen people for HIV, provides people living with HIV with medicines and trains doctors, nurses and field officers how to screen people for HIV and counsel HIV patients. Bridge also holds events to sensitize and educate the general public about HIV/AIDS and their prevention and control.

We conducted a cross-sectional study for this baseline assessment. The study was conducted from February 2016 to April 2016. The study sample comprised adults (18 years and older) living with HIV who attended the Bridge clinic in Karachi, Pakistan. All the participants had an HIV card issued by the Sindh AIDS Control Programme. The sample size was calculated using *Epi Info* assuming a 50% prevalence of different types of violence in HIV-positive participants, 95% confidence level and 6% margin of error. This gave a maximum sample size of 267.

Data were collected using an interviewer-led questionnaire.

Questionnaire development

An interview-based questionnaire was developed specifically for this study with the help of three sources (15–17). The questionnaire had two parts: the first part asked for information on sociodemographic characteristics of the participants, disease history and HIV risk behaviour; the second part asked about history of physical (16,18), sexual (15,16) and psychological violence after diagnosis of HIV infection (17), diet and knowledge about HIV infection.

Physical violence was measured by assessing the following acts: ever beaten up, slapped, kicked, dragged or had something thrown at him/her that could hurt them; ever pushed or shoved, hit with a fist, choked or burnt on purpose; and ever threatened with the use of or experienced the actual use of a gun, knife or other weapon (yes/no response). Physical violence was recorded if a positive answer was given to any one of the above questions.

Psychological violence was recorded if a positive answer was given to any one of the following questions: ever insulted; ever humiliated (verbally or physically) in front of others; or ever scared or someone you care about ever hurt (yes/no response).

Sexual violence was measured based on experience of the following acts: physically forced to have sexual intercourse or oral sex or had sexual intercourse when not wanting to because of fear of the consequences; forced to do something sexual that was degrading or humiliating (response: once, a few times, many times or a great many times; any of these responses was scored as yes). Sexual violence was recorded if a participant with HIV reported having experienced one or more acts of sexual violence by a current or former partner or at any point in their lives.

The questionnaire and consent form were developed in English and translated into the local language, Urdu. The questionnaire's validity was assessed in a pilot test of 25 participants. Face validity of the questionnaire was checked by three experts; no major issues were identified.

Data collection

After taking permission from the Bridge, registered people living with HIV coming to the clinics were approached. Trained data collectors interviewed the participants and recorded the data.

Statistical analysis

Baseline data and outcome data were summarized separately. For continuous variables, we examined the distribution of the observations; if normally distributed we summarized as means and standard deviations (SDs). If the variables were not normally distributed, we calculated medians and interquartile ranges. For discrete variables, numbers and percentages were reported. We calculated the prevalence of different type of violence in HIV-positive participants and 95% confidence interval (CI) with *Epi Info*, version 6.04.

To evaluate the association between different types of violence in HIV-positive participants and demographic characteristics and HIV-related factors, the chi-squared test was used. We did univariate and multivariate logistic regression analyses to identify the variables associated with violence. Odds ratios (ORs) and 95% CI were calculated. In univariate analysis, in order not to

exclude important variables, $P < 0.25$ was used as the level of significance and variables significantly associated with violence were entered in the multivariate analysis. In the multivariate analysis, a forward stepwise selection method was used to identify factors associated with physical, psychological and sexual violence. Variables significantly associated with the outcome at $P < 0.05$ were retained in the final model. All P -values were based on two-sided tests. The analyses were performed using SPSS, version 19.

Ethical considerations

Ethical approval for the study was obtained from the Ethical Review Committee of the Aga Khan University and Bridge Consultants Foundation.

The purpose of the study was explained to the participants in Urdu. Participation in the interview was on voluntary basis. Respondents were provided with an informed consent form, to sign or put their thumbprint on. In view of the sensitive nature of the study, the data collectors were trained and approached the patients with the help of doctors working in the clinic. This helped to develop rapport between the data collectors and the participants and kept the patients at ease. Patient safety and confidentiality were ensured (19).

Results

A total 262 people living with HIV were approached; and 250 agreed to participate and were enrolled in the study (response rate: 95.4 %). Only 7 (2.8%) of the participants were transgender and 183 were men. The baseline characteristics and self-reported HIV risk behaviour were shown in Table 1. More than half of the participants were male 183 (73.2%). The mean age of the participants was 30 (SD 6.5) years; almost two thirds (155; 63.8%) were younger than 30 years. Of the 250 participants, 113 (45.2%) were illiterate, 132 (52.8%) were married and 144 (57.6%) were employed. The median duration since diagnosis of HIV was 24 months. The mean duration of living with HIV was 58 months for female and 28 months for male participants. Only 15 (25.0%) of the female and 29 (15.8%) of the male participants had a history of blood transfusion. Most of the female participants (43; 71.7%) had an HIV-positive sex partner compared with only 16 (8.7%) of male participants, $P < 0.001$. In addition, more women (11; 18.3%) had HIV-positive children than men (1; 0.5%), $P < 0.001$. Just over half of the male participants (96; 52.2%) injected drugs compared with only 2 (3.3%) of the women, $P < 0.001$. Just over half of the participants (133; 53.2%) had used a condom in the past month.

Overall, 237 (94.8%) participants reported experiencing at least one type of violence. The reported prevalence of physical, psychological and sexual violence was 64.4% (95% CI: 58.2–70.0%), 79.6% (95% CI: 74.1–84.1%) and 74.8% (95% CI: 69.0–79.7%), respectively. Females

reported a significantly higher prevalence of physical violence (76.6%; 95% CI: 64.5–85.5%) than males (60.6%; 95% CI: 53.4–67.4), $P = 0.02$ (Table 1).

In the bivariate analysis (Table 2), physical violence was more commonly reported in younger participants ($P = 0.03$). In addition, more women reported physical violence than men (OR = 2.13, 95% CI: 1.09–4.15) as did participants with an HIV-positive partner (OR = 2.07, 95% CI: 1.06–4.04).

Among participants who reported sexual violence, being married (OR = 2.22, 95% CI: 1.23–3.98), having an HIV-positive partner (OR = 2.19, 95% CI: 1.01–4.76), history of blood donation (OR = 1.97, 95% CI: 1.05–3.70), monthly income more than 6000 Pakistani rupees (OR = 2.77, 95% CI: 1.08–7.10) and HIV duration of 4–5 years compared with ≤ 1 year (OR = 0.44, 95% CI: 0.21–0.92) were significantly associated with sexual violence in the univariate analysis (Table 3). As regards psychological violence, younger age (OR = 0.95, 95% CI: 0.91–0.99), being married (OR = 0.43, 95% CI: 0.22–0.83), having a monthly income more than 6000 rupees (OR = 0.38, 95% CI: 0.15–0.96), history of blood transfusion (OR = 0.44, 95% CI: 0.21–0.90), living with HIV for ≥ 6 years compared with ≤ 1 year (OR = 0.30, 95% CI: 0.12–0.73) and injecting drugs (OR = 2.82, 95% CI: 1.37–5.82) were significantly associated with psychological violence (Table 4).

In the multivariate logistic regression analysis (Table 5), only two variables were significantly associated with physical violence: young age (OR = 0.95, 95% CI: 0.91–0.99) and having an HIV-positive partner (OR = 2.17, 95% CI: 1.10–4.26)]. Variables significantly associated with sexual violence in the multivariate analysis were being married (OR = 2.30, 95% CI: 1.27–4.16) and having an HIV positive partner (OR = 2.07, 95% CI: 1.09–3.92). Variables significantly associated with psychological violence were being married (OR = 0.46, 95% CI: 0.24–0.90) and injecting drug use (adjusted OR = 2.64, 95% CI: 1.27–5.50).

Discussion

Our study explored the self-reported prevalence of physical, psychological and sexual violence in adults living with HIV who were receiving antiretroviral therapy in Karachi, Pakistan.

Most of our participants living with HIV had experienced at least one form of violence. Of those who reported violence, 64.4% reported physical violence, 79.6% psychological violence and 74.8% sexual violence, with 94.8% of participants reporting that they had experienced at least one type of violence. These figures are higher than other developing countries. A study from India reported the prevalence of physical violence in HIV-positive adults was 14.5%: 17.6% in women and 6.9% in men (20). In another Indian study, 42% of female participants reported violence, of

whom 29% reported physical and 69% reported psychological abuse (21). Studies in Africa among people living with HIV found a prevalence of physical or sexual intimate partner violence of 29% in women (22), and that the risk of domestic violence was greater in women than men (23).

Most studies have reported violence by an intimate partner, while ours included violence perpetrated by anyone. In Pakistan, people living with HIV are vulnerable, with increasing levels of poverty, low levels of literacy, low levels of condom use, and social stigma associated with HIV/AIDS which leaves individuals infected with HIV, particularly women, at risk of violence.

We found that psychological violence was the most common form of violence against our sample of people living with HIV, with a prevalence of 79.6%. Psychological violence was significantly associated with injecting drug use and being unmarried in the multivariable analysis. While we did not investigate psychological distress, psychological violence is a risk factor, and HIV positivity and psychological distress have been found to be significantly associated with suicidal behaviour among injecting drug users (24,25). Furthermore, psychosocial problems are also a risk factor for poor adherence to HIV treatment (26). In a society where a social stigma already exists towards people infected with HIV (27), our findings emphasize the urgent need for effective mental health and social support services for these people to improve their adherence to treatment and quality of life.

Our results show that the prevalence of physical violence was greater in women living with HIV than men (76.6% versus 60.7%) and that younger age and having an HIV-positive partner were significant predictors of physical violence. The prevalence of physical and sexual violence was found to be higher in females with HIV infection than males in India (20). Furthermore a study in Canada found that up to 81% of women living with HIV had faced acts of violence, 56% of whom reported at least five episodes of violence in their lifetime (28). This study also found that current illicit drug use was a predictor of recent experiences of violence (28). Previous studies have focused on the role of violence against HIV-positive women only (29,30) whereas our study had predominantly male participants (75.3%). While the prevalence of self-reported physical violence was higher in women, 60.6% of the male participants also reported being victims of physical violence – an alarming figure which needs to be addressed.

The prevalence of sexual violence was 74.8% in our study, a figure much higher than reported from developed and developing countries (20,23,31,32). A meta-analysis in the United States of America showed the prevalence of intimate partner violence was 55.3% in HIV-positive women, and 30% of these women had experienced post-traumatic stress disorder (32). The Indian study reported that 8.5% of their female participants had experienced sexual violence but none of the male participants had (19). A study in Kenya among HIV-positive people found that the

prevalence of sexual violence among males was 13% and among females was 16% (23). We found that being married and having an HIV-positive partner were significant risk factors for sexual violence. Sexual violence is also cause for concern because it is potentially a risk factor for disease propagation. Intimate partner violence leads to decreased use of condoms which is vital to prevent transmission of HIV (33). Our results showed that only 53.2% of our participants reported using condoms in the past month and 18.3% of our female participants already had a child who was HIV-positive. In terms of formulating targeted interventions to prevent the spread of HIV, tackling sexual violence in people living with HIV seems to be an aspect of public health that has been neglected thus far.

This is the first study of its kind in Pakistan, whose society is unique in terms of a political, cultural and religious context where the stigma associated with sexually transmitted infections has impeded the timely identification and management of such diseases. Our data could serve as a foundation for targeted public health policies in the future. We determined the prevalence, risk factors and predictors of violence within the concentrated HIV epidemic in Pakistan. Future studies are needed to examine: violence in people living with HIV at the national level; the effects of intervention efforts to reduce violence; and the impact violence on adherence to HIV treatment. Identification and management of these social issues needs to be incorporated in clinical practice as well.

HIV counselling and testing services for people with HIV infection are lacking in many countries, including Pakistan. We need to develop the capacity of counsellors in existing HIV programmes in Pakistan to understand the issues of violence experienced by people living with HIV.

Our study had some imitations. We only investigated people living with HIV in Karachi. Although this is the most populous city in Pakistan, it is possible that other predictors of violence could have been found with a wider and more varied study population. Since we measured the self-reported prevalence of violence, recall bias might have influenced the answers if participants only remembered recent acts of violence. As ours was a convenience sample, our finding may not representative of the entire population attending the HIV treatment centres.

Physical, psychological and sexual violence are a considerable burden among people living with HIV/AIDS in Pakistan. This issue needs to be addressed by the government and nongovernmental organizations taking into consideration the socioeconomic context and gender disparities in this population.

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Table 1: Characteristics of study sample

Characteristic	Total (%) (n = 250)	Women (n = 60)	Men (n = 183)	P-value (χ^2 test)
<i>Age (years)</i>				
Mean (SD)	30 (6.5)	30.9 (6.6)	29.3 (6.2)	0.10
Median (IQR)	29 (25–34)	30 (25–35)	28 (25–33)	
<i>Age (years), no. (%)</i>				
18–25	78 (31.2)	17 (28.3)	59 (32.2)	0.47
26–30	77 (30.8)	19 (31.7)	57 (31.1)	
31–35	54 (21.6)	11 (18.3)	42 (23)	
> 35	41 (16.4)	13 (21.7)	25 (13.7)	
<i>Education, no. (%)</i>				
Illiterate	113 (45.2)	27 (45)	83 (45.4)	0.005
Primary school	54 (21.6)	21 (35)	31 (16.9)	
Lower secondary (school grades 6–10)	78 (31.2)	10 (16.7)	66 (36.1)	
Upper secondary (school grades 11–12)	5 (2.0)	2 (3.3)	3 (1.6)	
<i>Marital status, no. (%)</i>				
Single	93 (37.2)	4 (6.7)	82 (44.8)	< 0.001
Married	132 (52.8)	39 (65)	93 (50.8)	
Widowed	17 (6.8)	17 (28.3)	0 (0.0)	
Separated	8 (3.2)	0 (0.0)	8 (4.4)	
<i>Occupational status, no. (%)</i>				
Employed	144 (57.6)	26 (43.3)	112 (61.2)	0.01
Unemployed	106 (42.4)	34 (56.7)	71 (38.8)	
<i>Monthly income (PKR^a) (n = 144)</i>				
Mean (SD)	5700.3 (11 435.4)	6185.1 (2249.5)	5699.5 (129.6.3)	
Median (IQR)	3000 (263–9000)	6000 (5000–7000)	500 (200–10 000)	0.01 ^b

<i>Crowding index, no. (%)</i>				
Low	33 (13.2)	4 (6.7)	26 (14.2)	0.009
Moderate	145 (58)	45 (75)	96 (52.5)	
High	72 (28.8)	11 (18.3)	61 (33.3)	
<i>Hospitalized for an HIV-related illness</i>	97 (38.8)	19 (31.7)	77 (42.1)	0.15
<i>HIV-infected child</i>	12 (4.8)	11 (18.3)	1 (0.5)	< 0.001
<i>Self-reported HIV risk behaviours, no. (%)</i>				
History of blood transfusion	46 (18.4)	15 (25.0)	29 (15.8)	0.11
History of blood donation	96 (38.4)	22 (36.7)	72 (39.3)	0.71
HIV-positive partner	59 (23.6)	43 (71.7)	16 (8.7)	< 0.001
Injecting drug use	98 (39.2)	2 (3.3)	96 (52.2)	< 0.001
Condom use in the past month	133 (53.2)	35 (58.3)	96 (52.5)	0.42
<i>Violence, no. (%)</i>				
Physical violence	161 (64.4)	46 (76.6)	111 (60.7)	0.02
Psychological violence	199 (79.6)	43 (71.6)	151 (82.5)	0.06
Sexual violence	187 (74.8)	47 (78.3)	133 (72.6)	0.38
Physical or sexual or both	221 (88.4)	53 (88.3)	161 (88.0)	0.94

SD: standard deviation.

^a1 US\$ = 104.49 Pakistani rupees (PKR).

^bMann–Whitney U test.

Seven participants were transgender and were not included in the analysis by sex.

Table 2: Association of physical violence and characteristics of participants

Characteristic	Physical violence		Unadjusted OR (95% CI)	P-value
	Yes	No		
	Mean (SD)	Mean (SD)		
<i>Age (years)</i>	29.2 (5.8)	31.0 (7.5)	0.95 (0.92–0.99)	0.03
	No. (%)	No. (%)		
<i>Sex (n=243)</i>				
Male	111 (60.7)	72 (39.3)	1.0	
Female	46 (76.2)	14 (23.3)	2.13 (1.09–4.15)	0.02
<i>Education</i>				
Illiterate	78 (69.0)	35 (31.0)	1.0	
Educated	83 (60.6)	54 (39.4)	0.69 (0.40–1.16)	0.16
<i>Marital status</i>				
Single/separated	81 (68.6)	37 (31.4)	1.0	
Married	80 (60.6)	52 (39.4)	0.70 (0.41–1.18)	0.18
<i>Occupational status</i>				
Unemployed	70 (66.0)	39 (42.4)	1.0	
Employed	91 (63.2)	53 (57.6)	0.88 (0.52–1.49)	0.64
<i>History of blood transfusion</i>				
No	126 (61.8)	78 (38.2)	1.0	
Yes	35 (76.1)	11 (23.9)	1.97 (0.94–4.10)	0.07
<i>History of blood donation</i>				
No	97 (63.0)	57 (37.0)	1.0	
Yes	64 (66.7)	32 (33.3)	1.17 (0.68–2.00)	0.55
<i>HIV-positive partner</i>				
No	116 (60.7)	75 (39.3)	1.0	
Yes	45 (76.3)	14 (23.7)	2.07 (1.06–4.04)	0.03
<i>HIV-infected child</i>				
No	150 (63.0)	88 (37.0)	1.0	
Yes	11 (91.7)	1 (8.3)	6.45 (0.81–50.83)	0.07
<i>Injecting drug use</i>				
No	93 (61.2)	59 (38.8)	1.0	
Yes	68 (69.4)	30 (30.6)	1.43 (0.83–2.46)	0.18

OR: odds ratio; CI: confidence interval.

Table 3: Association of sexual violence and characteristics of participants

Characteristic	Sexual violence		Unadjusted OR (95% CI)	P-value
	Yes	No		
	Mean (SD)	Mean (SD)		
<i>Age (years)</i>	29.7 (6.4)	30.3 (6.9)	0.98 (0.94–1.03)	0.54
	No. (%)	No. (%)		
<i>Sex</i>				
Male	133 (72.7)	50 (27.3)	1.0	
Female	47 (78.3)	13 (21.7)	1.36 (0.68–2.72)	0.38
<i>Education</i>				
Illiterate	80 (70.8)	33 (29.2)	1.0	
Educated	107 (78.1)	30 (21.9)	1.47 (0.83–2.60)	0.18
<i>Marital status</i>				
Single/separated	79 (66.9)	39 (33.1)	1.0	
Married	108 (81.8)	24 (18.2)	2.22 (1.23–3.98)	0.008
<i>Monthly income (PKR^a)</i>				
< 3000	51 (69.9)	22 (30.1)	1.0	
3000–6000	15 (78.9)	4 (21.1)	1.61 (0.48–5.43)	0.43
> 6000	45 (86.5)	7 (13.5)	2.77 (1.08–7.10)	0.03
<i>History of blood donation</i>				
No	108 (70.1)	46 (29.9)	1.0	
Yes	79 (82.3)	17 (17.7)	1.97 (1.05–3.70)	0.03
<i>History of blood transfusion</i>				
No	150 (73.5)	54 (26.5)	1.0	
Yes	37 (80.4)	9 (19.6)	1.48 (0.67–3.26)	0.33
<i>Years living with HIV</i>				
≤ 1	88 (77.9)	25 (22.1)	1.0	
2–3	50 (79.4)	13 (20.6)	1.09 (0.51–2.32)	0.81
4–5	28 (60.9)	18 (39.1)	0.44 (0.21–0.92)	0.03
≥ 6	21 (75)	7 (25)	0.85 (0.32–2.23)	0.74
<i>HIV-positive partner</i>				
No	137 (71.1)	54 (28.3)	1.0	
Yes	50 (84.7)	9 (15.3)	2.19 (1.01–4.76)	0.04
<i>HIV-infected child</i>				

No	176 (73.9)	62 (26.1)	1.0	
Yes	11 (91.7)	1 (8.3)	3.87 (0.49–30.63)	0.19
<i>Injecting drug use</i>				
No	115 (75.7)	37 (24.3)	1.0	
Yes	72 (73.5)	26 (26.5)	0.89 (0.49–1.59)	0.69

OR: odds ratio; CI: confidence interval.

^a1 US\$ = 104.49 Pakistani rupees (PKR).

Table 4: Association of psychological violence and characteristics of participants

Characteristic	Psychological violence		Unadjusted OR (95% CI)	P-value
	Yes	No		
	Mean (SD)	Mean (SD)		
<i>Age (years)</i>	29.4 ± 6.4	31.6 ± 6.8	0.95 (0.91–0.99)	0.03
	No. (%)	No. (%)		
<i>Sex</i>				
Male	151 (82.5)	32 (17.5)	1.0	
Female	43 (71.7)	17 (28.3)	0.54 (0.27–1.06)	0.07
<i>Education</i>				
Illiterate	85 (75.2)	28 (24.8)	1.0	
Educated	114 (83.2)	23 (16.8)	1.63 (0.87–3.03)	0.12
<i>Marital status</i>				
Single/separated	102 (86.4)	16 (13.6)	1.0	
Married	97 (73.5)	35 (26.5)	0.43 (0.22–0.83)	0.01
<i>Income/month (PKR^a)</i>				
< 3000	64 (87.7)	9 (12.3)	1.0	
3000–6000	16 (84.2)	3 (15.8)	0.75 (0.18–3.09)	0.69
> 6000	38 (73.1)	14 (26.9)	0.38 (0.15–0.96)	0.04
<i>History of blood donation</i>				
No	119 (77.3)	35 (22.7)	1.0	
Yes	80 (83.3)	16 (16.7)	1.47 (0.76–2.83)	0.24
<i>History of blood transfusion</i>				
No	168 (82.4)	36 (17.6)	1.0	
Yes	31 (67.4)	15 (32.6)	0.44 (0.21–0.90)	0.02
<i>Years living with HIV</i>				
≤ 1	92 (81.4)	21 (18.6)	1.0	
2–3	52 (82.5)	11 (17.5)	1.08 (0.48–2.41)	0.85
4–5	39 (84.8)	7 (15.2)	1.27 (0.50–3.23)	0.61
≥ 6	16 (57.1)	12 (42.9)	0.30 (0.12–0.73)	0.008
<i>HIV-positive partner</i>				
No	156 (81.7)	35 (18.3)	1.0	
Yes	43 (72.9)	16 (27.1)	0.60 (0.30–1.19)	0.14

<i>HIV-infected child</i>				
No	190 (79.8)	48 (20.2)	1.0	
Yes	9 (75)	3 (25)	0.76 (0.19–2.90)	0.68
<i>Injecting drug use</i>				
No	112 (73.7)	40 (26.3)	1.0	
Yes	87 (88.8)	11 (11.2)	2.82 (1.37–5.82)	0.005

OR: odds ratio; CI: confidence interval.

^a1 US\$ = 104.49 Pakistani rupees (PKR).

Table 5: Predictors of physical, sexual and psychological violence in HIV-positive participants

Risk factor	Physical violence	Sexual violence	Psychological violence
	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Young age	0.95 (0.91–0.99)	–	–
Having an HIV-positive partner	2.17 (1.10–4.26)	2.07 (1.09–3.92)	–
Being married	–	2.30 (1.27–4.16)	0.46 (0.24–0.90)
Injecting drug use	–	–	2.64 (1.27–5.50)

aOR: adjusted odds ratio, CI: confidence interval.