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Associations between Partner Violence Perpetration and History of STI among HIV-infected Substance Using Men in Russia

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Abstract

Studies document a significant association between victimization from intimate partner violence (IPV) and sexually transmitted infections (STI) and HIV among substance using women in Russia and elsewhere, but no study has examined IPV perpetration and STI among Russian men or HIV-infected men in Eastern Europe. This study was designed to assess the association between lifetime history of IPV perpetration and STI (lifetime and current) among substance using HIV-infected men in Russia. Cross-sectional analyses were conducted with baseline data from 415 male participants enrolled in a randomized HIV intervention clinical trial [the HERMITAGE Study]. Participants were HIV-infected men reporting recent heavy alcohol use and unprotected sex in St. Petersburg, Russia. Baseline surveys assessed demographics, IPV perpetration, risk behaviors, and STI history. Current STI was assessed via blood testing for syphilis and urine testing for gonorrhea, Chlamydia and trichomonas. Multiple logistic regression analyses were used to assess the association between history of IPV with lifetime and current STI. Participants were aged 20–57 years. Almost half of participants (46%) reported a history of IPV perpetration; 81% reported past 30-day binge alcohol use, and 43% reported past 30-day injection drug use. Past and current STI was 41% and 12%, respectively. Men reporting a history of IPV perpetration had significantly higher odds of reporting ever having an STI (AOR=1.6, 95% CI=1.1, 2.4) but lower odds of testing positive for a current STI (AOR=0.50, 95% CI=0.26, 0.96). These findings demonstrate that a history of male IPV perpetration is common in HIV-infected Russian men and associated with a history of STI. Programmatic work toward IPV prevention is needed in Russia

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and may be beneficial in mitigating STIs, but more research is needed to understand how and why the association between IPV and STI changes over time in this population.

INTRODUCTION

More than one-third of women in Russia have been victims of male partner-perpetrated intimate partner violence (IPV) (Horne, 1999; Kalichman et al., 2000; Lokhmatkina et al., 2010), and victims of IPV are at increased risk for contracting HIV (World Health Organization [WHO], 2005). Mechanisms for the association between IPV and HIV include both greater sexual risk taking (e.g., sex trade involvement, non-use of condoms) and substance use (e.g., injection drug use, risky sex while intoxicated) among victims of IPV, according to findings from Russia (Kalichman et al., 2000; Zhan et al., 2012), Ukraine (Dude, 2007), South Africa (Jewkes et al., 2006) and the United States (US) (Bogart et al., 2005; Dude, 2007; El-Bassel et al., 2001, 2005a; Panchanadeswaran et al., 2010; Schmuel & Schenker, 1998; Silverman et al., 2011; Silverman et al., 2001). However, research from Russia and elsewhere also indicate that male perpetrators of IPV are more likely to engage in risky sex (e.g., concurrent sex partnering, non-use of condoms, buying sex) and substance use (Zhan et al., 2012; Dunkle et al., 2006; Jewkes et al., 2006; Decker et al., 2008, 2009; Silverman et al., 2007; El-Bassel et al., 2001; Raj et al., 2006, 2008; Santana et al., 2006). Longitudinal studies with women and men in the US further indicate the bidirectional nature of these associations (El-Bassel et al., 2005b; Gilbert et al., 2007). Little of this research has focused on HIV-infected populations outside the US and in Eastern Europe, and may have growing importance given Russia's increasingly heterosexually driven epidemic (Goliusov et al., 2008). Thus, this study assesses lifetime IPV perpetration and its association with STI and high risk sexual behaviors among a sample of male HIV-infected substance users in St. Petersburg, Russia.

METHODS

This study involved a cross-sectional analysis of baseline data from male participants of a randomized clinical trial of an HIV risk reduction intervention for HIV-infected risky drinkers in Russia [the HERMITAGE Study]. Between July 2007 and April 2010, eligible adults were enrolled from four HIV or substance use clinical sites and one needle exchange program in St. Petersburg, Russia. Trained research associates recruited participants; those indicating interest were escorted into a private room to assess eligibility and to obtain informed consent. Subsequent to consent, trained staff conducted the baseline survey assessment; urine and blood samples were then collected for STI testing. Baseline incentives of 300 rubles (US$7) were provided. Of 921 individuals screened, 732 were eligible, and 700 agreed to participate. Analyses involved data from men (n=415), all men reported female sex partners. Institutional Review Boards of Boston University Medical Campus and Pavlov State Medical University approved this study.

Measures

Single items assessed subjects' age, marital status, education, incarceration, employment status and whether the participant was currently on anti-retroviral therapy (ART). Past 30-day drinking and binge drinking (5+ drinks per day) were assessed using the 30-day Timeline Follow Back (Sobell & Sobell, 1992, 1996). Past 30-day injection drug use (IDU) was assessed using an item from the Risk Behavior Survey (RBS) (Petry, 2001; Weatherby et al., 1994). Our primary independent variable, *IPV perpetration*, was assessed via three items based on the Conflict Tactics Scale-2 (Straus et al., 1996): physical IPV perpetration ["threatened partner with violence, pushed or shoved partner or threw something at partner"], sexual IPV perpetration ["insisted on or made partner have sex with him"] and

causing injury due to IPV ["injured partner during a fight"]. A subject was classified as 'yes' for IPV perpetration if a positive response was recorded for any of the three items.

STI ever, our primary outcome, was assessed via survey items on whether the participant had ever been diagnosed with each of the following: syphilis, gonorrhea, Chlamydia, trichomonas, genital warts, and genital herpes. *Current STI*, our secondary outcome, was assessed via biologic testing of urine and blood samples for gonorrhea, Chlamydia, trichomonas, and syphilis (See Pace et al., in press for details).

In terms of sex risk behaviors, our secondary outcomes of interest, subjects provided detailed information about their sexual partners in the past 90 days (Kalichman et al., 2001). For each of their five most recent partners in this period, starting with the most recent, participants were asked about number of sexual episodes and condom use during these episodes, as well as number of episodes involving drug or alcohol use prior to sex (past 30 days). They were then asked about any other sex partners beyond five in the past 90 days using these same questions. These items were used to create the following additional secondary outcomes: *number of unprotected sex episodes* in the past 90 days, *multiple sex partners* (2+) in the past 90 days, and *substance use before sex* in the past 30 days. Sex trade involvement items were taken from the Risk Assessment Battery (RAB) (Navaline et al., 1994); one item asked about *buying sex* with money or drugs in the past 90 days.

Data Analysis

Descriptive statistics were obtained for demographics, ART, sex risk behaviors, substance use behaviors, and STI for the overall sample and stratified by IPV perpetration status. Bivariate associations were assessed via chi-square analyses, t-tests, or the nonparametric Wilcoxon rank sum test as appropriate. To assess associations between IPV perpetration and dichotomous STI and sex risk behavior outcomes, simple logistic regression analyses as well as multiple logistic regressions analyses adjusted for demographics (age, marital status, and education), ART, and substance use (binge alcohol use and IDU) were conducted. Crude and adjusted overdispersed Poisson regression analyses were used to assess associations between IPV perpetration and the number of unprotected sex episodes. Odds ratios (OR) are reported for logistic regression models and incidence rate ratios (IRR) are reported for Poisson regression models; 95% CIs were used to determine significance. Statistical analyses were performed using SAS software (version 9.1; SAS Institute, Cary, NC).

RESULTS

Sample Characteristics

Participants (N=415) were aged 20–57 years; 20.7% had not completed high school, and 48.4% had a history of incarceration. Most (81.0%) reported past 30-day binge alcohol use, and 42.7% had injected drugs in this same timeframe. Half of participants (50.1%) reported alcohol or drug use before sex in the past 30 days, and one in eight had bought sex in the past 90 days. More than one in ten men (11.8%) currently had an STI; 41.0% had a history of a STI diagnosis. Almost half of participants (46%, n=189) reported a history of IPV perpetration. [Table 1] Of these IPV perpetrators, 55.9% (n=105/189) reported physical IPV perpetration; 63.0% (n=119/189) reported sexual IPV perpetration, and 46.9% (n=87/189) reported injury due to IPV perpetration.

Associations between IPV and STI and Sex Risk Behaviors

Adjusted regression analyses demonstrated that lifetime IPV perpetration is associated with a higher odds of reporting a lifetime STI (AOR=1.58, 95% CI=1.04, 2.39), but a lower odds of having a current STI (AOR=0.50, 95% CI=0.26, 0.96). [Table 2] No significant

associations between lifetime IPV perpetration and sex risk behaviors were observed in adjusted analyses.

DISCUSSION

Almost half of study participants reported a history of IPV perpetration, a percentage higher than that seen in other studies of men from Russia (Lysova & Hines, 2008; Serbanescu & Goodwin, 2005, September; WHO, 2011; Zhan et al., 2012), and may be attributable to having an HIV-infected and risky drinking sample. Previous research from Russia and elsewhere documents a strong association between IPV perpetration and substance use, particularly alcohol use (Lysova & Hines, 2008; WHO, 2011; Zhan et al., 2011, 2012). History of IPV perpetration may also be disproportionately represented among men with HIV in Russia, a finding seen in South Africa and India (Dunkle et al., 2006; Silverman, et al., 2007). Of note, the proportion of IPV perpetration among HIV-infected substance users in Russia is consistent with findings from a sample of HIV-infected IDUs (Frye et al., 2007), highlighting the relevance of considerations of IPV perpetration in this population of men.

Consistent with previous studies, findings indicate a higher odds of STI ever among those reporting a lifetime history of IPV perpetration. However, unexpectedly, history of IPV perpetration was not associated with current sexual risk behaviors and was negatively associated with current STI. These findings may in part be attributable to use of a lifetime IPV perpetration variable, which corresponds more directly to ever STI than current STI or recent sex risk behaviors, as such behaviors may change for men over time. Future research should examine whether recent IPV predicts current STI and sex risk behaviors in this population.

Study limitations include reliance on self-report of stigmatizing behaviors and STI over an “ever” timeframe; these data used are subject to recall and social desirability biases. Our IPV assessment had fewer items than the standard version, which may have resulted in underreporting. Use of differing time frames across some of our variables of interest (e.g., lifetime IPV perpetration, unprotected sex in past 90 days) likely affected some study findings. Cross-sectional data analyses do not allow an interpretation of the findings in terms of causality, and many potential relevant covariates such as knowledge and attitudes were not able to be considered by these analyses. Finally, the study may be limited in generalizability based on its focus on HIV-infected male risky drinkers recruited largely through health systems in the context of St. Petersburg, Russia. Despite limitations, study findings in conjunction with above described prior research document that IPV perpetration histories are a major concern among male HIV-infected risky drinkers in Russia and worthy of study with regards to their association with HIV acquisition and transmission in this national context.

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Table 1

Demographic and HIV/STI Risk Profile of Male HIV-Infected Risky Drinkers in St. Petersburg, Russia (N=415) and Stratified by for Total Sample (N=415) and by History of IPV Perpetration

	Total Sample N=415 n (%)	**No History of IPV Perpetration n=226 n (%)**	**History of IPV Perpetration n=189 n (%)**	**p-value***
Age Range (years)	(20 – 57)	(20 – 54)	(22 – 57)	0.52
Mean (SD)	30.6 (4.8)	30.5 (4.7)	30.8 (4.8)	
Married	131 (31.6%)	63 (27.9%)	68 (36.2%)	0.07
Education				
≤10 Grades	86 (20.7%)	55 (24.3%)	31 (16.4%)	0.05
11+ Grades	329 (78.3%)	171 (75.7%)	158 (83.6%)	
Employed	345 (83.1%)	188 (83.2%)	157 (83.1%)	0.97
History of Incarceration	201 (48.4%)	109 (48.2%)	92 (48.7%)	0.93
History of ART Use	78 (19%)	43 (19%)	35 (19%)	0.90
Binge Alcohol Past 30 Day	336 (81.0%)	183 (81.0%)	153 (81.0%)	0.99
IDU Past 30 Day	177 (42.7%)	106 (46.9%)	71 (37.6%)	0.06
MSM	15 (3.6%)	10 (4.4%)	5 (2.7%)	0.33
Multiple Sex				0.50
Partners, Past 90 Days	127 (30.6%)	66 (29.2%)	61 (32.3%)	
Buying Sex	52 (12.5%)	25 (11.1%)	27 (14.3%)	0.32
Selling Sex	12 (2.9%)	6 (2.7%)	6 (3.2%)	0.75
Any Substance Use Before Sex	208 (50.1%)	106 (46.9%)	102 (54.0%)	0.15
Number of Unprotected Sex Episodes past 90 Days Range	(0 – 300)	(0–300)	(0 – 90)	0.002
Mean (SD)	13.5 (25.8)	12.7 (29.0)	14.4 (21.2)	
Median (IQR)	4.0 (1 – 15)	3 (0 – 10)	5 (2 – 17)	
Self Report STI Ever	172 (41.0%)	82 (36.3%)	90 (47.6%)	0.02
Any Current STI	48 (11.8%)	32 (14.6%)	16 (8.5%)	0.06

* P-values based on chi-square analyses, t-tests, or Wilcoxon test, as appropriate.

Table 2

Logistic and Poisson Regression Analyses Assessing Associations between IPV and the Outcomes, STI and Sex Risk Behaviors

Outcomes	**Crude OR (95% CI) p-value**	**Adj[1] OR (95% CI) p-value**
Self Report STI Ever	1.60 (1.08, 2.37) p=0.02	1.58 (1.04, 2.39) p=0.03
Current STI	0.55 (0.29, 1.03) p=0.06	0.50 (0.26, 0.96) p=0.04
Multiple Sex Partners	1.16 (0.76, 1.76) p=0.50	1.24 (0.80, 1.93) p=0.33
Buying sex	1.32 (0.75, 2.40) p=0.32	1.36 (0.75, 2.48) p=0.31
Alcohol or Drug Use before sex	1.33 (0.90, 1.96) p=0.15	1.35 (0.89, 2.04) p=0.15
	Crude IRR (95% CI) p-value	**Adj[1] IRR (95% CI) p-value**
Number of unprotected sex encounters	1.13 (0.78, 1.64) p=0.51	1.06 (0.72, 1.58) p=0.76

[1]Adjusted for age, marital status, education, ART, IDU, binge alcohol use