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Sexual Partnership-Level Correlates of Intimate Partner Violence Among Men Who Have Sex With Men and Transgender Women in Lima, Peru

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Abstract

To improve understanding of factors associated with intimate partner violence (IPV) and explore its role in sexually transmitted infection (STI) acquisition, we analyzed partnership-level correlates of IPV among men who have sex with men (MSM) and transgender women (TW) in Peru. In a 2017 cross-sectional study of rectal STI screening and HIV prevention, MSM/TW completed a sociobehavioral survey addressing demographic characteristics, sexual risk behaviors, and substance use, and were tested for rectal gonorrhea and chlamydia, syphilis, and HIV. Generalized estimating equations estimated individual- and partner-level correlates of IPV. Of 576 participants (median age, 27 years), 7.9% (36/456) of MSM and 15.0% (18/120) of TW reported IPV with 1

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of their last three partners. MSM/TW reporting IPV were more likely to meet criteria for an alcohol use disorder (74.1%) than participants reporting no IPV (56.7%; $p < .01$). Physical violence (4.5% MSM; 9.2% TW) was associated with stable partnerships (aPR 3.79, 95% CI: 1.79–8.04), partner concurrency (4.42, 1.19–16.40), and participant alcohol (4.71, 1.82–12.17) or drug use (5.38, 2.22–13.02) prior to sex. Psychological violence (4.5% MSM; 5.0% TW) was associated with stable partnerships (2.84, 1.01–7.99). Sexual IPV was reported by 1.1% of MSM and 5.0% of TW. Physical, psychological, and sexual IPV were reported in sexual partnerships of Peruvian MSM and TW, particularly with stable partners and in conjunction with substance use.

Keywords

Men who have sex with men (MSM); Intimate partner violence (IPV); Sexually transmitted infections (STIs); Substance use; Public health

INTRODUCTION

Intimate partner violence (IPV) refers to behavior within an intimate relationship that causes physical, psychological, or sexual harm, including acts of physical aggression, sexual coercion, psychological abuse, and controlling behaviors (WHO, 2017). Prevalence estimates of IPV among men who have sex with men (MSM) and transgender women (TW) are few, and vary widely—from 22% to 82% worldwide—likely because there is no standardized measurement instrument, and the time periods for capture differ by study (Brown & Herman, 2015; Buller, Devries, Howard, & Bacchus, 2014; Davis et al., 2015; Davis, Kaighobadi, Stephenson, Rael, & Sandfort, 2016; Li, Baker, Korostyshevskiy, Slack, & Plankey, 2012; Stephenson & Finneran, 2017; Stults, Javdani, Greenbaum, Kapadia, & Halkitis, 2016; Wong, Weiss, Ayala, & Kipke, 2010). This prevalence is as high or higher than what has been reported for women in opposite-sex relationships (Finneran & Stephenson, 2013; Tjaden, Thoennes, & Allison, 1999; Wall, Sullivan, Kleinbaum, & Stephenson, 2014). Recent studies of IPV among women in Peru, the geographic focus of our analysis, estimate lifetime prevalence between 7.9% and 43% (Benavides, Leon, Etesse, Espezuza, & Stuart, 2018; Sanchez et al., 2017).

Elements of control and coercion in sexual partnerships involving IPV can prevent victims from seeking HIV prevention services (Stephenson & Finneran, 2017) and negotiating safer sex practices (Stephenson, Freeland, & Finneran, 2016), contributing to high rates of condomless anal intercourse (CAI) (Stephenson & Finneran, 2017; Stults et al., 2016). The power differential inherent in abusive partnerships may therefore increase victims' vulnerability to HIV acquisition (Buller et al., 2014). This vulnerability often persists and extends to future sexual encounters (Buller et al., 2014), reflecting the deeply seated consequences of IPV victimization (Woodyatt & Stephenson, 2016).

Few studies of IPV among MSM and/or TW distinguish between the types of violence experienced, even though the prevalence, correlates, and consequences of physical, psychological, and sexual violence likely differ (Davis et al., 2016; Finneran & Stephenson, 2013). A better understanding of these differences by type of violence in MSM and TW

sexual partnerships is urgently needed to address IPV and its adverse health consequences for these highly stigmatized groups.

Although there is a small body of literature connecting IPV and CAI, there is a lack of consensus on the correlates of IPV among MSM and TW (Finneran & Stephenson, 2013; Newcomb & Mustanski, 2016; Stephenson & Finneran, 2017; Stults et al., 2016). The correlates of IPV among sexual and gender minorities are likely different than those in opposite-sex relationships due to the heterogeneity of sexual orientation, role, and partnership type within these vulnerable populations (Woodyatt & Stephenson, 2016). A limited number of studies suggest that younger age (Greenwood et al., 2002), decreased condom negotiation efficacy (Stephenson et al., 2016), and discussion of HIV serostatus (Finneran & Stephenson, 2014) may be associated with IPV in MSM. However, there are several factors associated with CAI in MSM and TW whose correlation with IPV has yet to be elucidated, including partnership type and concurrency (Gorbach & Holmes, 2003), and how and where sexual partners meet (Lewnard & Berrang-Ford, 2014). Many MSM and TW have overlapping short-term partnerships in which some of the factors associated with IPV in opposite-sex relationships like attachment (He & Tsang, 2014), power imbalance (Houston & McKirnan, 2007), and gender equity (Gomez, Speizer, & Moracco, 2011) are mediated by the venues where they meet or have sex (Gorbach & Holmes, 2003).

While limited information is available about correlates of IPV in MSM and TW, we know surprisingly little about the structure of IPV events, including how conflicts escalate to violence and the partnership contexts in which IPV occurred (Capaldi, Knoble, Shortt, & Kim, 2012; Stults et al., 2016). For example, although emerging evidence suggests that victims of IPV may be more likely to use drugs and alcohol in general, these behaviors have not yet been linked to the specific sexual encounters in which IPV occurred (Buller et al., 2014; Davis et al., 2016; Dunkle et al., 2006; George et al., 2016; Houston & McKirnan, 2007; Li et al., 2012; Lisco, Leone, Gallagher, & Parrott, 2015; Stults, Javdani, Greenbaum, Kapadia, & Halkitis, 2015; Wheeler, Anfinson, Valvert, & Lungo, 2014). Prior studies with MSM and/or TW measure IPV over a period of at least 12 months (Finneran & Stephenson, 2013; Stephenson & Finneran, 2017; Stults et al., 2016; Wheeler et al., 2014) or only with a primary partner (Davis et al., 2015, 2016), measures that do not account for the fluctuating nature of vulnerability, and the diversity of partnerships MSM and TW may engage in.

In addressing IPV among MSM and TW, it is important to acknowledge how prevalence, correlates, and consequences of violence differ by type. Prevalence of physical IPV in MSM and TW worldwide has been estimated between 11.8–45.1% and 35–37%, respectively (Brown & Herman, 2015; Finneran & Stephenson, 2013; James et al., 2016). In heterosexual relationships, physical IPV has been associated with gendered power imbalances in relationships and structural gender inequalities in social roles (Fleming et al., 2015). While it is unknown whether these concepts directly map onto MSM and/or TW partnerships, the gendered power structures of sexual roles in Latin America, where the receptive (*pasivo*) sexual partner is typically considered feminine and submissive, may uniquely shape IPV contexts in this region (Clark et al., 2013). It is therefore critically important to unpack the diversity of sexual orientations and roles within the epidemiological labels MSM and TW in

order to develop public health interventions addressing psychosocial concerns like IPV victimization.

There is little research addressing psychological or sexual IPV among MSM and TW that does not involve physical violence, and prevalence estimates vary widely (Finneran & Stephenson, 2013). The dearth of research on these violence types among MSM and TW is concerning because literature addressing IPV in heterosexual relationships suggests women who experience psychological violence may develop health problems similar to those who are physically assaulted, and women who experience sexual violence are at increased risk for HIV infection (Mason et al., 2013; Meekers, Pallin, & Hutchinson, 2013). In one study of correlates of HIV incidence among Chinese MSM, IPV victimization was independently associated with HIV seroconversion (Wang et al., 2018). While there was no significant difference in HIV incidence between types of IPV in this sample, there were only seven HIV seroconversions among participants reporting IPV victimization. In this way, IPV in MSM and TW partnerships may have biological consequences such as HIV infection and other sexually transmitted infections (STIs), with resultant implications for clinical practice with these vulnerable populations (Buller et al., 2014; Davis et al., 2015; Houston & McKirnan, 2007; Li et al., 2012).

While limited data exist on IPV correlates among MSM and TW globally, there is scant data documenting the needs of MSM and TW from Latin America (Buller et al., 2014; George et al., 2016; Semple et al., 2017; Wheeler et al., 2014). This absence is concerning due to the concentrated HIV epidemic among sexual and gender minorities in this region (Garcia, Bayer, & Carcamo, 2014). In Peru, prevalence of HIV in MSM and TW is estimated at 15.2% and 13.8%, respectively, more than 40 times greater than the general population (UNAIDS, 2016). To improve understanding of the contextual factors in which physical, psychological, and sexual IPV occur in sexual partnerships among MSM and/or TW, and to explore how different types of IPV interact with other risk factors to affect HIV and/or STI acquisition, we conducted a partnership-level analysis of IPV among MSM and TW in Peru. Our analysis is unique because it considers how participant and partner-specific characteristics and behaviors are associated with violence at the level of each sexual partnership. By examining the circumstances surrounding and factors associated with specific IPV sexual encounters, we provide a more nuanced portrait of IPV than studies using composite measures.

METHOD

Participants

Participants were selected from community venues by peer recruiters as part of the screening process for a 2017 study of rectal STIs and HIV prevention among MSM and TW in Lima. Enrollment in the screening protocol was limited to individuals who, 1) were at least 18 years old, 2) were assigned male sex at birth, 3) had not previously tested positive for HIV infection and, 4) reported at least one episode of condomless receptive anal intercourse (cRAI) with an HIV-infected or unknown serostatus partner in the previous six months.

Measures

Participants completed a computer-assisted self-interview (CASI) survey of demographic characteristics and sexual risk behaviors. Questions addressed participant sexual orientation (heterosexual, bisexual, homosexual), role (*activo* [insertive], *pasivo* [receptive], *moderno* [versatile], or other), and sexual acts with the three most recent contacts, including intercourse type (anal, vaginal, oral), and condom use and sexual position (insertive, receptive, both) for each act.

To measure event-specific substance use, participants were asked if they had: (1) consumed alcohol before having sex and, if so, (2) did they drink enough to feel “drunk” for the last sexual contact with each of their last three sexual partners. They were also asked if they had used any drugs prior to the last sexual contact with each of their last three partners (including marijuana, cocaine, heroin, poppers/amyl nitrates, methamphetamine, or “other”). Sexual partner alcohol and drug use were assessed with the same language, by participant report.

All participants completed a previously validated Spanish translation of the AUDIT-10 (Ludford et al., 2013). The AUDIT-10 was scored from 0 to 40, with higher scores indicative of more dangerous drinking patterns. Hazardous drinking was defined as a score between 8 and 15, and harmful drinking was defined as a score of 16 or greater. These scores are validated AUDIT-10 cut-points for identifying biological males who report drinking at hazardous and/or harmful/high-risk levels (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993).

For the last sexual contact with each of their last three sexual partners, participants were asked if they had experienced: (1) physical violence (hitting or assault), (2) sexual violence (physical coercion to have sex when they did not want to), and/or (3) psychological violence (intentional use of hurtful or offensive words by the partner).

Procedure

Study physicians performed a medical history and physical exam to assess for STI signs/symptoms, and collected blood and rectal swabs for STI screening. Specimens were tested for GC/CT infection using the Gen-Probe Aptima II assay (Hologic, San Diego, CA) at the Universidad Peruana Cayetano Heredia Sexual Health Laboratory in San Martin de Porres, Peru. Participants with clinically symptomatic urethritis or proctitis were treated with Ceftriaxone 250 mg IM once and Azithromycin 1g PO. NAAT testing results were provided within 14 days. Participants with asymptomatic, laboratory-diagnosed GC or CT infection were treated with Azithromycin alone (for CT mono-infection) or with Ceftriaxone (for all cases of GC infection).

Blood was tested for syphilis by rapid plasma reagin (RPR) assay (RPRnosticon, Biomérieux, Marcy l’Etoile, France) with positive results confirmed by *Treponema pallidum* particle agglutination assay (Serodia TPPA, Fujirebio, Malvern, PA) and serial dilution of titers. Treatment was according to stage of infection, as determined by the study physician, following review of the participant’s history of syphilis, treatment history, and prior RPR titer(s).

All participants underwent rapid HIV testing using a 4th Generation Rapid HIV-1/2 assay (Alere Determine, Alere) with confirmation of positive results by immunofluorescence assay. Participants diagnosed with HIV and/or STI were counseled on the importance of partner notification and provided information on local HIV/STI testing and treatment resources. All participants were compensated 15 *Nuevos soles* (approximately US \$5.00) for transportation and provided with five condoms and sachets of lubricant.

Design and Analyses

Bivariate analyses used chi-squared and Fisher's exact tests, when appropriate, to estimate the association of participant, partner, and partnership characteristics with physical, sexual, psychological, or multi-component IPV. The Kruskal-Wallis test was used to measure differences in the distribution of non-parametric numeric variables between participants experiencing different types of IPV versus no IPV. Sub-analyses of prevalent STI and physical IPV were conducted separately for MSM and TW using crude Poisson regression analyses with robust estimation of standard errors (Barros, 2003). Due to the small sample size of TW, we combined HIV infection and bacterial STIs into one biological outcome: prevalent STI. There were no significant differences between either HIV infection alone or bacterial STIs alone by type of violence among MSM.

Variables were selected for inclusion in multivariable models based on conceptual reasoning. To measure the association between independent variables and dichotomous outcomes (yes/no for physical and psychological IPV), we computed prevalence ratios with Poisson regression analyses with robust estimation of standard errors (Barros, 2003). Models were constructed under the generalized estimating equation extension with an exchangeable working correlation structure to account for correlation between the last three partners reported by the same participant (Hanley, Negassa, Edwardes, & Forrester, 2003).

We performed a stratified analysis to assess the robustness of the observed associations separately for MSM and TW: when the analysis was restricted to TW, unadjusted and adjusted associations between participant and partner characteristics and IPV type were similar to the primary findings, with only the relationships between stable partnerships and alcohol use before sex statistically differing from the analyses for combined MSM/TW (for physical IPV: stable partners crude $p=0.07$; participant alcohol use before sex crude $p=0.29$). For this reason, the combined analysis was used to maintain power.

All analyses were conducted using Stata 12.0 (StataCorp, College Town, TX). Complete case analysis was performed for variables with missing data; less than 5% of data were missing for any single variable.

Compliance with Ethical Standards

The Institutional Review Boards reviewed and approved all procedures prior to the initiation of study activities. Written informed consent was obtained from all participants prior to participation. All authors declare that there were no conflicts of interest.

RESULTS

Sample Characteristics

We evaluated 456 MSM (median age, 27 years) and 120 TW (median age, 29 years) between July and December 2017 (Table 1). The most frequently reported sexual orientation for MSM was homosexual (64.0%, 364/569). MSM most commonly reported a *moderno* (versatile) sexual role (50.5%; 225/446) and TW most often reported a *pasivo* (receptive) role (85.5%; 103/120). More than half of MSM (56.8%, 255/456) and TW (63.3%, 76/120) met AUDIT criteria for an alcohol use disorder (AUD). Sexual partners were most often described as casual (56.4% MSM; 35.5% TW), and met online (47.5% MSM; 30.9% TW). The most frequently reported sexual role among partners was *activo* (insertive; 58.0% MSM; 86.0% TW; Table 2). Alcohol and/or drug use by participants before sex with at least one partner was reported by less than half the sample (27.8% MSM, 41.4% TW; Table 3). Baseline prevalences of rectal GC/CT (24.6% MSM; 30.0% TW), syphilis (6.5% MSM; 5.8% TW), and HIV infection (21.8% MSM; 12.5% TW) were high. Overall, 7.9% (36/456) of MSM and 15.0% (18/120) of TW reported experiencing IPV by one or more of their last three partners and 0.8% (4/456) of MSM and 5.0% (6/120) of TW reported experiencing IPV by all of their last three partners.

Physical Intimate Partner Violence

Physical violence was the most common type of IPV reported by MSM (3.1%; 14/456) and TW (5.8%; 7/120) and most often occurred within stable partnerships (3.9% of stable partners of MSM; 20.0% of stable partners of TW). Participants reporting physical IPV more frequently endorsed concurrent sexual partners (94.4% versus 65.4% of MSM; 100.0% versus 76.3% of TW). Although the presence of any STI/HIV was highest in participants reporting physical IPV compared with participants reporting no IPV, the differences were not significant (42.9% versus 40.5% of MSM; 71.4% versus 37.3% of TW; $p = .26$). TW reporting physical IPV were more likely to have an STI diagnosed than TW without recent IPV (1.90, 1.13–3.18).

Factors related to problematic alcohol use were associated with physical IPV among MSM, both as measured by AUD criteria (85.7% [12/14] versus 55.2% [232/420]; $p < .01$) and in terms of alcohol use before sexual encounters involving IPV (70.0% versus 25.1% of encounters without physical violence). Both MSM and TW reported using drugs before sex more frequently in sexual encounters involving physical IPV (50.0% versus 15.6% of encounters reported by MSM; 60.0% versus 6.7% for TW).

Psychological Intimate Partner Violence

Psychological IPV by a partner was reported by 3.1% (14/456) of MSM and 2.5% (3/120) of TW. MSM/TW who reported psychological IPV were more likely to meet criteria for an AUD than participants who denied IPV (78.6% vs. 55.2% MSM, 100.0% vs. 62.8% TW; $p < .05$). MSM and TW who experienced psychological IPV were more likely to endorse cRAI with one or more of their last three sexual partners (94.1%) than participants reporting no IPV (68.8%, $p = 0.03$).

Sexual Intimate Partner Violence

Sexual violence was the least common type of IPV, with 0.4% (2/456) of MSM and 2.5% (3/120) of TW describing an episode with one of their three most recent partners, and occurring most often among TW with an anonymous sexual partner (4.2%; 3/71). Both of the MSM (100.0%) and two of the three TW (66.7%) who reported sexual IPV also reported using alcohol or drugs prior to forced sexual contacts (compared to 46.7% [196/420] of MSM and 50% [51/102] of TW with consensual encounters).

Multivariable Analyses of Physical, Psychological, and Sexual Intimate Partner Violence

All multivariable analyses were conducted at the partner level, for which the last sexual encounter with each of the three most recent partners was the unit of analysis. After adjusting for partner type, sexual orientation and role, concurrency, and substance use by participants and partners, physical IPV was reported more often in stable partnerships (aPR, 95% CI: 3.79, 1.79–8.04), in association with partner concurrency (4.42, 1.19–16.40), and in association with participant alcohol (4.71, 1.82–12.17) and drug use (5.37, 2.22–13.02) before sex. Psychological IPV was reported more often in stable (2.84, 1.01–7.99) and transactional sex partnerships (4.49, 1.54–13.09) compared with casual partnerships.

DISCUSSION

Findings highlight the prevalence of physical, psychological, and sexual IPV in the last three sexual partnerships of MSM and TW at high risk for HIV and other STIs in Peru. Physical violence was reported most frequently and was associated with stable partnerships, participant substance use before sex, and partner concurrency. Physical IPV was also associated with prevalent STI among TW. Psychological violence was more commonly reported by MSM and TW meeting criteria for an AUD and was associated with stable partners. MSM and TW reporting psychological violence were also more likely to endorse cRAI with one or more of their last three partners. Findings identify potentially modifiable factors and key partner characteristics associated with the sexual partnerships of MSM and TW involving physical and psychological IPV.

Both physical and psychological violence were associated with stable partners in our sample. This finding is consistent with the higher prevalence of any IPV with regular partners of MSM in a previous study, and underscores the importance of addressing violence prevention and conflict resolution within the stable relationships of MSM and TW (Davis et al., 2016). Unlike previous studies differentiating between IPV types among MSM and TW, however, physical violence was reported more frequently than psychological IPV in our sample (Finneran & Stephenson, 2013; Stephenson & Finneran, 2017). This distinction may be a consequence of the gendered power implications of the predominantly receptive sexual practices of our sample of MSM and TW in Peru, wherein the *pasivo* (receptive) partner may be considered the person who is acted upon but does not act (Clark et al., 2013). Physical IPV has been associated with parallel inequitable gender attitudes in heterosexual partnerships (Fleming et al., 2015), and this relationship power inequity has been shown to increase risk of HIV infection (Jewkes, Dunkle, Nduna, & Shai, 2010). Combined with the high prevalence of HIV and STIs among MSM and TW reporting physical IPV, these

findings reveal the importance of empowerment-based HIV prevention interventions that link social constructions of power and violence with biomedical approaches to HIV transmission.

Sexual encounters involving physical IPV were also associated with alcohol and drug use compared to those not involving IPV in our sample, reflecting the disinhibitory effects of these substances. Substance use in heterosexual partnerships has been shown to align with social constructs linking masculinity with violence and “toughness,” factors that may have a profound effect on men who identify themselves as “macho” (Lisco et al., 2015). For men who consider sexual contacts with MSM and/or TW a threat to their masculinity (Lisco et al., 2015), substance use may help minimize that perceived threat. However, substance use has also been associated with CAI and HIV transmission in MSM and TW (Li et al., 2012). Successful combined IPV and HIV prevention interventions for MSM and TW must account for the ways certain risk behaviors for HIV acquisition (like CAI, and their determinants, such as substance use, internalized homophobia, and IPV) may co-occur and reinforce each other during sexual encounters (Wheeler et al., 2014).

Physical violence was also associated with concurrent sexual partners for MSM and TW in our sample. This finding correlates with literature on IPV among heterosexual women showing associations between IPV victimization and partner concurrency (Hess et al., 2012). However, concurrent partners were reported by more than 80% of MSM and 90% of TW in our sample versus 16% of women in the aforementioned study. While these studies are not representative samples of MSM/TW or heterosexual women, a recent study comparing sexual behavior of MSM and heterosexual men and women showed much higher concurrency among MSM than heterosexuals (Glick et al., 2012). Due to the almost ubiquitous nature of concurrent partnerships among MSM and TW in our sample, interventions addressing IPV in these populations should emphasize communication about concurrency and provide training on how to resolve potential conflicts nonviolently.

Our study is one of few to identify an association between cRAI and psychological IPV among MSM and TW (Feldman, Diaz, Ream, & El-Bassel, 2007). This finding highlights the role psychosocial factors like intimacy, communication, and power dynamics play in the sexual risk behavior of MSM and TW. Victims of psychological violence in our sample were also more likely to meet criteria for an AUD. While it is unclear whether psychological abuse is the cause or the effect of problem drinking, results support the development of empowerment-based interventions for MSM and TW integrating issues of psychosocial vulnerability, psychological IPV, condom negotiation, and substance use. Recent research in Peru suggests these types of interventions are feasible and may help MSM and TW build community, enhance their health, decrease their risk of HIV transmission, affirm their sexual and gender identities, and develop a sense of agency (Maiorana et al., 2016).

Prevalence of any IPV was reported by TW in our sample almost twice as often as by MSM. While the distribution by type of IPV was similar for TW and MSM, a larger proportion of TW reporting IPV reported sexual violence, which has been associated with transactional sex in opposite-sex partnerships (Zembe, Townsend, Thorson, Silberschmidt, & Ekstrom, 2015). This difference in prevalence of sexual IPV between MSM and TW is likely a

consequence of the social marginalization and structural-level economic factors that make some TW in Peru dependent on transactional sex for income (Wheeler et al., 2014). Physical IPV was associated with prevalent STI only among TW, and was the only IPV type associated with biological outcomes in our sample. Previous studies have had mixed results on the association between STIs and different types of IPV in MSM and TW, highlighting the need for further research (Wheeler et al., 2014). Future studies should explore differences in the prevalences and consequences of IPV for MSM and TW in more detail to develop tailored IPV interventions targeted at the most common types of violence and their effects in these two sexual/gender minority groups.

Our findings should be considered in the context of several limitations. First, while prevalence of IPV in our sample of MSM and TW was lower than others have reported among these populations (Buller et al., 2014; Ibragimov et al., 2017; Li et al., 2012), those studies had much longer recall periods. Moreover, a study among women in Peru reported a comparable prevalence of IPV of 14% in the last 12 months (Svec & Andic, 2018). As our analysis was restricted to the last three sexual encounters of MSM and TW reporting a median of five sexual partners per month, our findings examined a limited timeframe and likely underestimate yearly and/or lifetime prevalence of IPV. In this context, the prevalence of IPV we report is even more concerning. Our results were also consistent with a study of HIV-positive TW in Lima that found a 12% prevalence of IPV with the current partner (Rich et al., 2018). Second, our results may not be generalizable to all MSM/TW in Lima because we collected a convenience sample of volunteers for a rectal STI screening and HIV prevention trial. As the recruitment site is an HIV research center, our sample is likely to be higher risk, and have a higher HIV prevalence, than the general MSM/TW population in Peru. Additionally, due to the small sample size of TW, we combined HIV infection and bacterial STIs into one biological outcome.

Because cRAI was an inclusion criterion, the diversity of participant sexual orientation and role in our sample was limited primarily to TW and homosexual MSM who identified as *pasivo* or *moderno*. While these MSM/TW may be more vulnerable to IPV victimization due to the submissive power dynamics linked with the receptive sexual role in Peru, this also limits the generalizability of our results to MSM who identify their sexual role as *activo* (insertive) and/or their sexual orientation as hetero- or bisexual. Additionally, due to the cross-sectional design, we were not able to assess the temporal association of IPV with STI and/or HIV incidence. Finally, the small sample size of some sub-groups in our sample may have limited our ability to measure statistically significant differences between groups, and prevented us from constructing a multivariable model for partnerships involving sexual IPV.

Despite these limitations, results showcase prevalences of physical, psychological, and sexual violence in sexual partnerships of MSM and TW in Peru. Findings also reveal associations of violent encounters with behaviors that may increase HIV acquisition risk, like substance use, partner concurrency, and cRAI. Importantly, factors associated with sexual partnerships involving IPV in MSM and TW in our sample differed by violence type, and future research should distinguish between these to inform interventions to prevent and resolve IPV. Our findings stress the need for empowerment-based HIV and/or STI prevention interventions addressing intersections of sociobehavioral vulnerabilities for HIV

acquisition for MSM and TW, including substance use, power imbalances, multiple and concurrent partnerships, and interpersonal violence.

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Table 1.

Characteristics of MSM and TW reporting condomless receptive anal intercourse (cRAI) in Lima, Peru, 2017 stratified by types of IPV reported with the last three sexual partners; N = 576

Characteristic	Total (N = 576)	No IPV (n = 522)	Physical IPV (n = 21)	Psychological IPV (n = 17)	Sexual IPV (n = 5)	>1 Type of IPV (n = 11)
Age	576 (100.0)	27 (22, 35)	27 (23, 32)	29 (22, 35)	23 (19, 27)	28 (25, 35)
Education (n = 576)						
< Secondary	52 (9.2)	48 (9.2)	2 (9.5)	0 (0.0)	1 (20.0)	2 (18.2)
Secondary	227 (39.4)	200 (38.3)	10 (47.6)	9 (52.9)	1 (20.0)	7 (63.6)
University/technical	296 (51.4)	274 (52.5)	9 (42.9)	8 (47.1)	3 (60.0)	2 (18.2)
Sexual orientation/gender identity (n = 569)						
Hetero/bisexual	85 (14.9)	77 (15.0)	4 (19.1)	3 (17.7)	1 (20.0)	0 (0.0)
Homosexual	364 (64.0)	336 (65.2)	10 (47.6)	11 (64.7)	1 (20.0)	6 (54.5)
Transgender	120 (21.1)	102 (19.8)	7 (33.3)	3 (17.7)	3 (60.0)	5 (45.5)
Sexual role (n = 573)						
Activo	13 (2.3)	12 (2.3)	1 (4.8)	0 (0.0)	0 (0.0)	0 (0.0)
Pasivo	314 (54.8)	281 (54.1)	15 (71.4)	8 (47.1)	3 (60.0)	7 (63.6)
Moderno	246 (42.9)	226 (43.6)	5 (23.8)	9 (52.9)	2 (40.0)	4 (36.4)
Alcohol use disorders (AUD; n = 576)						
No AUD or social drinker	240 (41.7)	226 (43.3)	5 (23.8)	3 (17.6)	4 (80.0)	2 (18.2)
Hazardous use	219 (38.0)	202 (38.7)	6 (28.6)	8 (47.1)	0 (0.0)	3 (27.3)
Harmful use	117 (20.3)	94 (18.0)	10 (47.6)	6 (35.3)	1 (20.0)	6 (54.5)
Condomless receptive anal intercourse with ≥1 of the last three partners (n = 576)						
Yes	396 (68.8)	359 (68.8)	12 (57.1)	16 (94.1)	4 (80.0)	5 (45.5)
No	180 (31.2)	163 (31.2)	9 (42.9)	1 (5.9)	1 (20.0)	6 (54.5)
Rectal gonorrhea or chlamydia (n = 574)						
Yes	147 (25.6)	135 (28.9)	6 (28.6)	4 (25.0)	0 (0.0)	2 (18.2)
No	427 (74.4)	386 (74.1)	15 (71.4)	12 (75.0)	5 (100.0)	9 (81.8)
Syphilis (n = 576)						
Yes	36 (6.3)	31 (5.9)	3 (14.3)	2 (11.8)	0 (0.0)	0 (0.0)
No	540 (93.7)	491 (94.1)	18 (85.7)	15 (88.2)	5 (100.0)	11 (100.0)
HIV status (n = 576)						
Infected	114 (19.8)	107 (20.5)	5 (23.8)	0 (0.0)	1 (20.0)	1 (9.1)
Uninfected	462 (80.2)	415 (79.5)	16 (76.2)	17 (100.0)	4 (80.0)	10 (90.9)

Bold text= p -value < 0.05.

Table 2.

Characteristics of last three sexual partners of MSM and TW in Lima, Peru, 2017 stratified by types of IPV reported with the last three sexual partners; N = 1,644

Partner-level characteristics	Total partners (N = 1,644)	No IPV (n = 1,566)	Physical IPV (n = 36)	Psychological IPV (n = 25)	Sexual IPV (n = 10)	>1 Type of IPV (n = 7)
Partner type (n = 1,587)						
Casual	826 (52.0)	803 (53.0)	9 (28.1)	9 (39.1)	4 (40.0)	1 (16.7)
Stable	144 (9.1)	126 (8.3)	11 (34.4)	3 (13.0)	1 (10.0)	3 (50.0)
Anonymous	420 (26.5)	402 (26.5)	8 (25.0)	6 (26.1)	3 (30.0)	1 (16.7)
Transactional sex client	157 (9.9)	152 (10.0)	2 (6.3)	1 (4.4)	1 (10.0)	1 (16.7)
Transactional sex worker	40 (2.5)	33 (2.2)	2 (6.3)	4 (17.4)	1 (10.0)	0 (0.0)
First meeting place (n = 1,570)						
Online	693 (44.1)	660 (44.0)	16 (50.0)	9 (40.9)	5 (50.0)	3 (50.0)
Through a friend	378 (24.1)	369 (24.6)	5 (15.6)	2 (9.1)	1 (10.0)	1 (16.7)
In a bar or social space	254 (16.2)	239 (15.9)	9 (28.1)	4 (18.2)	0 (0.0)	2 (33.3)
In a sauna/sexual space	64 (4.1)	59 (3.9)	2 (6.3)	1 (4.5)	2 (20.0)	0 (0.0)
In a party or social event	104 (6.6)	101 (6.7)	0 (0.0)	2 (9.1)	1 (10.0)	0 (0.0)
In a commercial sex site	77 (4.9)	72 (4.8)	0 (0.0)	4 (18.2)	1 (10.0)	0 (0.0)
Perceived sexual orientation (n = 1,569)						
Heterosexual	280 (17.8)	262 (17.5)	11 (34.4)	2 (8.7)	3 (30.0)	2 (33.3)
Bisexual	675 (43.0)	645 (43.1)	15 (46.9)	9 (39.1)	3 (30.0)	3 (50.0)
Homosexual	596 (38.0)	577 (38.5)	5 (15.6)	11 (47.8)	2 (20.0)	1 (16.7)
Female	18 (1.2)	14 (0.9)	1 (3.1)	1 (4.4)	2 (20.0)	0 (0.0)
Perceived sexual role (n = 1,579)						
Activo	1,014 (64.2)	972 (64.5)	21 (65.6)	10 (43.5)	5 (50.0)	6 (100.0)
Pasivo	124 (7.9)	114 (7.6)	4 (12.5)	1 (4.4)	5 (50.0)	0 (0.0)
Moderno	441 (27.9)	422 (28.0)	7 (21.9)	12 (52.2)	0 (0.0)	0 (0.0)
Perceived concurrency of sexual partner (n = 1,587)						
Yes	1,230 (77.5)	1,167 (77.0)	29 (90.6)	19 (82.6)	10 (100.0)	5 (83.3)
No	357 (22.5)	349 (23.0)	3 (9.4)	4 (17.4)	0 (0.0)	1 (16.7)

Table 3.

Sexual practices of MSM and TW with their last three sexual partners in Lima, Peru, 2017 stratified by types of IPV reported with the last three sexual partners; N = 1,644

MSM sexual practices with partners	Total partners (N = 1,644)	No IPV (n = 1,566)	Physical IPV (n = 36)	= Psychological IPV (n = 25)	Sexual IPV (n = 10)	>1 Type of IPV (n = 7)
Participant alcohol use before sex with partner (n = 1,644)						
Yes-drunk	104 (6.3)	92 (5.9)	5 (13.9)	6 (24.0)	0 (0.0)	1 (14.3)
Yes-not drunk	354 (21.5)	323 (20.6)	15 (41.7)	6 (24.0)	6 (60.0)	4 (57.1)
No	1,186 (72.1)	1,151 (73.5)	16 (44.4)	13 (52.0)	4 (40.0)	2 (28.6)
Partner alcohol use before sex with participant (n = 1,644)						
Yes-drunk	89 (5.4)	74 (4.7)	4 (11.1)	8 (32.0)	1 (10.0)	2 (28.6)
Yes-not drunk	361 (22.0)	338 (21.6)	11 (30.6)	4 (16.0)	5 (50.0)	3 (42.9)
No	1,194 (72.6)	1,154 (73.7)	21 (58.3)	13(52.0)	4 (40.0)	2 (28.6)
Participant substance use before sex with partner (n = 1,644)						
Yes	167 (10.2)	132 (8.4)	20 (55.6)	7 (28.0)	6 (60.0)	2 (28.6)
No	1,477 (89.8)	1,434 (91.6)	16 (44.4)	18 (72.0)	4 (40.0)	5 (71.4)
Partner substance use before sex with participant (n = 1,644)						
Yes	203 (12.4)	170 (10.9)	16 (44.4)	9 (36.0)	6 (60.0)	2 (28.6)
No	1,441 (87.6)	1,396 (89.1)	20 (55.6)	16 (64.0)	4 (40.0)	5 (71.4)
Participant concurrency with sexual partner (n = 1,588)						
Yes	1,089 (68.6)	1,025 (67.6)	31 (96.9)	19 (82.6)	9 (90.0)	5 (83.3)
No	499 (31.4)	492 (32.4)	1 (3.1)	4 (17.4)	1 (10.0)	1 (16.7)
Condom negotiation (n = 1,588)						
Yes-after sex	477 (30.0)	462 (30.4)	2 (6.3)	8 (34.8)	5 (50.0)	0 (0.0)
Yes-during sex	85 (5.4)	79 (5.2)	1 (3.1)	5 (21.7)	0 (0.0)	0 (0.0)
Yes-before sex	106 (6.7)	104 (6.9)	0 (0.0)	0 (0.0)	1 (10.0)	1 (16.7)
No	920 (57.9)	872 (57.5)	29 (90.6)	10 (43.5)	4 (40.0)	5 (83.3)
Communication about HIV serostatus (n = 1,588)						
Yes-after sex	274 (17.3)	259 (17.1)	4 (12.5)	6 (26.1)	5 (50.0)	0 (0.0)
Yes-during sex	41 (2.6)	39 (2.6)	0 (0.0)	2 (8.7)	0 (0.0)	0 (0.0)
Yes-before sex	67 (4.2)	65 (4.3)	0 (0.0)	1 (4.3)	0 (0.0)	1 (16.7)
No	1,206 (75.9)	1,154 (76.1)	28 (87.5)	14 (60.9)	5 (50.0)	5 (83.3)

Table 4.

Correlates of physical and psychological IPV among MSM and TW sexual partnerships in Lima, Peru, 2017;
N = 1,644

Characteristic	Physical IPV (N = 44)				Psychological IPV (n = 31)			
	cPR	95% CI	aPR	95% CI	cPR	95% CI	aPR	95% CI
Partner-Level Characteristics								
Partner type								
Casual	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Stable	4.70	2.08 – 10.62	3.79	1.79 – 8.04	3.02	1.11 – 8.24	2.84	1.00 – 7.99
Anonymous	1.17	0.44 – 3.11	1.41	0.57 – 3.52	1.13	0.42 – 3.08	1.15	0.39 – 3.39
TS-client	1.71	0.63 – 4.65	0.94	0.34 – 2.58	1.20	0.30 – 4.82	1.09	0.28 – 4.32
TS-worker	2.18	0.38 – 12.45	1.64	0.48 – 5.63	6.37	2.00 – 20.28	4.49	1.54 – 13.09
Perceived sexual orientation								
Heterosexual	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Bisexual	0.83	0.39 – 1.77	0.73	0.36 – 1.48	1.68	0.48 – 5.85	-	-
Homosexual	0.38	0.15 – 0.97	0.45	0.19 – 1.04	1.94	0.56 – 6.80	-	-
Female	0.76	0.01 – 47.59	1.10	0.03 – 35.94	4.19	0.38 – 45.67	-	-
Perceived sexual role								
Activo	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Pasivo	0.78	0.25 – 2.45	-	-	0.46	0.06 – 3.52	-	-
Moderno	0.70	0.33 – 1.48	-	-	1.84	0.84 – 4.03	-	-
Participant concurrency with sexual partner ^a								
Yes	5.60	2.04 – 15.37	4.42	1.19–16.40	1.93	0.75 – 4.99	-	-
MSM Sexual Practices with Partners								
Participant alcohol use before sex with partner								
Yes	3.18	1.60 – 6.31	4.71	1.82 – 12.17	2.28	0.98 – 5.33	-	-
Partner alcohol use before sex with participant								
Yes	2.15	1.12 – 4.13	0.48	0.22 – 1.07	2.32	1.01 – 5.32	1.45	0.61 – 3.47
Participant substance use before sex with partner								
Yes	8.08	4.20 – 15.56	5.37	2.22 – 13.02	3.56	1.54 – 8.26	1.13	0.38 – 3.37
Partner substance use before sex with participant								
Yes	3.58	1.89 – 6.80	0.91	0.44 – 1.88	3.65	1.65 – 8.09	2.71	0.97 – 7.60

Bold text = p -value < 0.05. Crude and adjusted Poisson regression models constructed with GEE.

^aNo is the reference for these variables