

## **Intimate Partner Violence Experiences among Men Who Have Sex in Hanoi, Vietnam**

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## **Intimate Partner Violence Experiences among Men Who Have Sex with Men in Hanoi, Vietnam**

### **Abstract**

**Purpose:** Intimate partner violence (IPV) victimization is a pressing issue among men who have sex with men (MSM) and has profound health implications. This study aims to estimate the prevalence of IPV and identify factors associated with its occurrence among MSM in Hanoi, Vietnam

**Methods:** A cross-sectional study was conducted from March to May 2023 at an MSM-friendly sexual health clinic in Hanoi. Participants completed a self-administered questionnaire on a tablet after screening for eligibility. IPV victimization was assessed using a 21-item scale (the IPV-GBM scale). Logistic regression models were used to identify factors associated with IPV victimization in the past 12 months.

**Results:** Among 309 respondents, the mean age was 28 and half of participants reported using PrEP for 12 months or more. Two-thirds reported IPV victimization in the past 12 months (67%). Emotional IPV (47%) was most prevalent, followed by monitoring (39%), controlling (19%), and physical/sexual IPV (15%). Participants who were reported experiencing IPV in the past 12 months were more likely to be aged  $\leq 24$  years (aOR = 1.98, 95% CI: 1.14, 3.44), to report preferring the insertive sexual role (aOR = 2.02, 95% CI: 1.10, 3.70), or to report having more sexual partners (2-5 partners vs  $\leq 1$  partner: aOR = 2.02, 95% CI: 1.10, 3.70;  $\geq 5$  partners vs.  $\leq 1$  partner: aOR = 2.02, 95% CI: 1.10, 3.70).

**Conclusions:** IPV victimization among MSM on PrEP in Hanoi is highly prevalent. Tailored interventions are needed to address these vulnerabilities and promote safer behaviors and

healthier relationships. Efforts should prioritize younger MSM. Further research is necessary to explore IPV dynamics across diverse settings.

**Keywords:** Prevalence, IPV, IPV-GBM, MSM, Vietnam

## Introduction

Intimate partner violence (IPV) among men who have sex with men (MSM) is a pervasive health problem and is particularly relevant in the context of HIV prevention efforts.<sup>1</sup> Intimate partner violence (IPV) refers “to any behavior within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship,” including physical, sexual, economic, and emotional violence.<sup>2</sup> IPV is common among sexual minority groups. A meta-analysis of 26 studies including more than 39,000 sexual minority people (SMP) in the United States found that SMP were 3.8 times more likely to experience sexual abuse compared to the general population.<sup>3</sup> Another recently published meta-analysis of 52 studies including 32,048 MSM reported that the pooled prevalence of IPV victimization was 33%.<sup>4</sup>

Experiencing IPV is associated with significant short- and long-term health consequence.<sup>5</sup> IPV is linked to an increase in suicidal ideation<sup>6,7</sup>, and homicide<sup>8</sup>. MSM suffering from IPV are more likely to engage in substance use and to experience depressive symptoms.<sup>1,9,10</sup> MSM experiencing IPV are also more likely to engage in high-risk sexual behaviors, such as in unprotected sex, transactional sex and then have higher risk of acquiring HIV.<sup>1,10-12</sup> Furthermore, MSM living with HIV and experiencing IPV have significantly worse HIV outcomes and engagement in care.<sup>13</sup>

Studies assessing violence among MSM in low- and middle-income countries (LMICs) remain limited.<sup>4</sup> A study of 278 female sex workers, MSM, and transgender women in five countries in Latin America and the Caribbean reported that nearly all participants experienced some form of violence.<sup>14</sup> Another study among young MSM in Myanmar reported 21%-25% of the participants experienced sexual violence.<sup>15</sup> In Vietnam, a 2016 survey among 202 MSM found that 14.4% had experienced lifetime sexual violence, using a single self-reported item.<sup>16</sup> Furthermore, prior

research often lacked validated, multidimensional IPV instruments, leading to potential underestimation of IPV prevalence and its profile and associated factors.<sup>2,4</sup>

This study addresses these gaps by utilizing the validated IPV-GBM scale<sup>17</sup> to comprehensively assess the prevalence and correlates of IPV among MSM in Hanoi, Vietnam.

## **Methods**

### *Study overview*

A cross-sectional study was conducted between March 27 and May 14, 2023, at an MSM-friendly sexual health clinic in Hanoi, Vietnam. Study participants were MSM receiving oral daily PrEP. Eligible participants self-administered a structured questionnaire using a tablet in a private room after providing informed consent. Ethical approval for the study was obtained from the Institutional Review Board at Hanoi Medical University.

### *Study site*

Hanoi has the second-highest estimated number of MSM among 64 provinces in Vietnam, with at least 30,000 MSM.<sup>18</sup> HIV prevalence among MSM in Hanoi is estimated at 11.2%.<sup>19</sup> The Sexual Health Promotion (SHP) clinic, established in 2013, is a trusted resource for the LGBT+ community, offering services such as HIV post-exposure prophylaxis, PrEP, and sexually transmitted infection (STI) testing and treatment. Currently, the clinic has provided PrEP services to approximately 2,000 users, of whom 60–70% use daily PrEP and the remainder use event-driven PrEP.

### *Participants*

Eligible participants were 18 years old or above, male at birth, had been taking oral daily PrEP for at least 30 days, and had at least one male sex partner or male lover in the past year. A sample

size of 310 was determined based on an anticipated IPV prevalence of 60%<sup>16,17</sup>, with a precision of 10% and an estimated population size of MSM 180,000.<sup>20</sup> To enroll participants, we screened all MSM visiting the clinic during the study period. Eligible but non-consenting individuals were asked to provide basic demographic and behavioral data, such as year of birth, months on PrEP, educational levels, employment, and having male sex partners or male lovers in the past year.

### ***Data collection***

Participants completed a self-administered questionnaire on a tablet. Prior to starting, a research assistant explained key terms (e.g., defining “partner” as inclusive of regular and casual relationships and of sexual or emotional relationship) and instructed on how to use the tablet. Assistance was available throughout the process to address technical or comprehension issues. Participants received 150,000 VND (equivalent to 7.5 USD) for their time and effort. Surveys took approximately 30–35 minutes to complete.

### ***Measures***

*Intimate partner violence.* The experience of IPV was assessed using the IPV-GBM scale.<sup>17</sup> The scale was developed in English to be particularly used among gay and bisexual men and validated in the US.<sup>17</sup> This 21-item scale includes five IPV domains: Physical and sexual IPV (6 items), monitoring behaviors (5 items), controlling behaviors (4 items), emotional IPV (3 items), and HIV-related IPV (3 items). Each item in the scale has five choices: “Never happened,” “1 time in the past year,” “2 times in the past year,” “3-5 times in the past year,” and “More than 5 times in the past year”. The scale underwent a rigorous five-step cultural adaptation process, including translation and cognitive interviews, to ensure validity for Vietnamese MSM.<sup>21</sup>

### ***Potential Correlates of IPV***

*Social support.* Levels of social support were measured by an eight-item instrument modified from a nineteen-item Social Support Survey instrument.<sup>22,23</sup> The modified scale measures two dimensions – tangible support (4 items) and emotional support (4 items). Respondents were asked “How often is each of the following kinds of support available to you if you need it?” (e.g. someone you can count on, to confide in, to love and make you feel wanted). Each item was rated from “none of the time,” to “all of the time,” with a score ranging from 1 to 5, respectively. Scores were computed to range from 1 to 100, with higher scores indicating greater support.

*Sexual histories.* The data included sexual preferences including whether they preferred penile-anal sex sexual role, the number of sex partners (in general, casual sex partner), condom use in anal sex, group sex, and sexualized drug use (e.g., methamphetamine or Viagra) in the past 12 months.

*Background characteristics of the participants.* Variables included age, highest educational levels, employment, marital status, personal monthly income, housing condition, sexual orientation, and duration of PrEP use.

### ***Data analysis***

The primary outcome was any IPV victimization in the past 12 month. We focused past 12 months because it was an indication of intervention. It was coded as “1” for the participants with any experience of any 21 items of the IPV-GBM scale in the past 12 months and “0” for participants without any experience of any 21 items of the scale in the past 12 months. Similarly, participants experienced physical or sexual IPV, monitoring behaviors, controlling behaviors, emotional IPV, or HIV-related IPV if they experience any of the items belonging to corresponding form of IPV. Experience of IPV victimization was reported by frequency and

percentage. Standardized Cronbach's alpha was calculated to assess internal validity for the overall scale and its subdomains.

Socio-demographic and behavioral characteristics of the study participants were summarized by mean and standard deviation for continuous variables (e.g., age, social support) or by frequency and percentage (e.g., education, sexual orientation). Differences between participants with and without any IPV victimization were assessed by Chi-squared tests for categorical variables or by Student's T-tests for continuous variables. Multivariable logistic regression models were used to identify factors associated with any IPV victimization. Variables were included in the model if their associations for association with IPV had p-values <0.2 in the univariate analysis. Adjusted odds ratios (aOR) and their respective 95% confidence intervals were reported. Model goodness-of-fit was evaluated using Hosmer-Lemeshow tests. Statistical analyses were performed using STATA version 18 (Stata Corporation, College Station, TX, USA), and a p-value < .05 was considered as statistically significant.



## Results

During the study period, 741 clients visited the SHP clinic, of whom 679 (92%) were using PrEP. Among these 679 PrEP users, 396 (58%) were eligible to participate in the study, and 310 (78%) of those eligible consented and completed the questionnaire (Supplement Table 1). Comparisons between participants who agreed and who refused to participate in the study showed that older and employed people were less likely to participate in the study (Supplement Table 2). One participant was excluded from the analysis due to event-driven PrEP usage, resulting in a final analysis sample of 309 participants (Figure 1).

The mean age of the study participants was 28 years, with 36% aged 24 or younger. Most participant self-identified as gay (60%) and 17% reported experiencing housing insecurity within the past 12 months. The majority (55%) reported having 2–5 sexual partners in the past year. Most (53%) participants reported inconsistent condom use during anal sex in the past 12 months and 66% reported the use of sexualized drugs in the past 12 months. Approximately half (51%) of participants had been using PrEP for 12 months or longer (Table 1).

Among 309 participants, 67% experienced one or more forms of IPV in the past 12 months, and 68% experienced lifetime IPV. The prevalence of each form of IPV victimization in the past 12 months and in lifetime were similar. Emotional IPV was the most prevalent form (47% in the past year and 49% lifetime), followed by monitoring behaviors (39% and 40%), controlling behaviors (19% and 20%), and physical or sexual IPV (15% and 22%). HIV-related IPV victimization was 12% last year as compared to 20% lifetime prevalence. Most standardized Cronbach alphas were  $>0.7$ , indicating moderate to good reliability, excepting for controlling behaviors in the past 12 months (Cronbach's alpha = 0.56) (Table 2).

Participants who reported housing insecurity had a three-fold higher proportion of experiencing any IPV victimization than participants who had a regular place to stay (22% vs. 8%, p-value 0.002). MSM with more sexual partners in the past 12 months were also more likely to report IPV. Additionally, MSM participating in group sex in the past 12 months were twice as likely to report last-year IPV victimization as compared to those not participating in group sex (30% and 13%, p-value 0.001). Lower levels of social support were observed among those who experienced IPV compared to those who did not (Table 1).

The multivariable logistic model suggested that participants aged  $\leq 24$  years were nearly twice as likely to experience any IPV victimization than those aged  $> 24$  years (aOR: 1.98, 95%CI: 1.14, 3.44). Compared to participants who preferred receptive sexual roles, those who preferred insertive sexual roles were more likely to experience any IPV victimization (aOR: 2.02, 95%CI: 1.10, 3.70). A higher number of sex partners in the last year was positively associated with experience of any IPV victimization (2-5 sex partners aOR: 2.48, 95%CI: 1.26, 4.89;  $\geq 5$  sex partners aOR: 3.37, 95%CI: 1.42, 7.99) (Table 3). Neither housing insecurity nor group sex participation was statistically associated with IPV in adjusted analyses. The p-value from Hosmer-Lemeshow test (p-value = 0.99) indicated the model fitted well.

## **Discussion**

This study is among the few reporting the current circumstances of IPV victimization among Vietnamese men who have sex with men (MSM). It highlights that the prevalence of intimate partner violence (IPV) victimization among MSM using PrEP was high – about two-thirds of men reported experiencing IPV in the past 12 months. This prevalence of IPV victimization among our study participants exceeds that reported in studies in the US<sup>24-26</sup>, China<sup>27,28</sup>, and a previous study in Vietnam.<sup>16</sup> Differences may stem from different recruitment methods. For

example, prior studies recruited participants via online advertisements<sup>24</sup> or from gay-friendly venues<sup>25</sup>, while our study recruited participants from a health clinic. Moreover, varying recall periods (e.g., 6 months in Sharma et al., 2021)<sup>26</sup> and the use of fewer items to measure IPV in some studies<sup>16,27,28</sup> may contribute to these discrepancies.

To our knowledge, this is the first study to adapt and use the IPV-GBM scale in Vietnam. Despite minor modifications following linguistic adaptation guidelines<sup>21</sup>, the scale retained consistency with its original form. We observed a similar pattern of different forms of IPV: the highest prevalence was emotional IPV, followed by monitoring, controlling, and physical/sexual IPV.<sup>9,29</sup> Because the scale is novel for use in Vietnamese MSM, further research is needed to validate this scale within Vietnamese MSM populations and to explore short-form adaptations and optimal thresholds for intervention.

Consistent with previous studies, younger participants were more likely to report IPV in the last 12 months.<sup>24,27</sup> Young MSM may lack experience in navigating interpersonal conflicts or ensuring their safety in relationships. Socioeconomic disparities and power imbalances in relationships with older partners may further heighten their vulnerability.<sup>26,30</sup> Additionally, IPV exposure increases risks for HIV and STIs<sup>10-12</sup>, underscoring the need for targeted interventions for young MSM.

An important finding from this study - the positive association between the number of sexual partners in the last 12 months and IPV - is well-established in studies among women<sup>31</sup> but has been uncommonly reported in studies among MSM. The mechanism could be complex. Different types of partners might be associated with different forms of IPV. For example, both regular partners and transactional sex partners were more frequently the perpetrators of IPV than casual partners.<sup>9,27</sup> A more parsimonious explanation of this finding might be that having more partners

means exposing oneself more frequently to partners capable of inflicting IPV. Establishing and adhering to sexual agreements in intimate relationships is crucial, as research has shown that men are more likely to experience IPV when their partners believe they have violated such agreements.<sup>24,26</sup> Notably, having more than two sexual partners has been identified as an independent risk factor for both STIs<sup>32</sup>, and HIV infections.<sup>33,34</sup> Therefore, promoting skills such as effective condom negotiation, developing and maintaining sexual agreements, and undergoing routine testing for HIV and STIs presents an opportunity to empower couples to address health concerns. These strategies may not only reduce IPV but also mitigate its associated consequences, including the risk of HIV infection.

The association of preference for an insertive role with a higher prevalence of IPV victimization is an important finding that, however, conflicts with the literature. One study suggested that MSM who had receptive anal sex during 30 days before the interview were more likely to experience any lifetime IPV.<sup>35</sup> Qualitative studies are needed to contextualize this finding among Vietnamese MSM.

The study findings should be interpreted in light of some limitations. First, our study was conducted in a sexual health clinic in Hanoi; this may limit generalizability to broader MSM populations, especially those outside Hanoi or without healthcare engagement. However, the clinic is the setting where interventions will be implemented, and a large number of MSM already access to the clinic, so data generated from this clinic-based sample will inform the future development of clinic-based interventions against violence. Further research should engage a larger sample size and involve MSM at different clinics and practice types in other provinces. Second, we could not avoid the natural limitation of a cross-sectional design, in which

reverse causation is possible. For example, in our study, condom use, or social support can be a consequence of IPV victimization, instead of a risk factor for it.

## **Conclusions**

This study underscores the urgent need for policies and interventions to reduce IPV among MSM in Vietnam. The study found the high prevalence of IPV victimization among MSM attending PrEP services in a sexual health clinic in Vietnam. Younger age, preference for an insertive sexual role, and higher number of sex partners were positively associated with IPV victimization in the past 12 months. Qualitative data should be collected to provide context and to provide more information about the circumstances and perceptions of these incidents, which guide the development of violent prevention intervention. Interventions to mitigate IPV should focus on screening to identify victims, providing more support for youth, and promoting safe behaviors and healthy relationship skills among and should integrate into PrEP/ARV settings where a large number of MSM already have access to.

## **Authorship contribution**

**Loc Quang Pham:** Conceptualization (lead), Methodology (equal), Data collection (lead), Formal analysis (lead), Original draft (lead), Review and editing (lead). **Patrick S. Sullivan:** Conceptualization (supporting), Methodology (equal), Original draft (supporting), Review and editing (supporting). **Amanda K. Gilmore:** Conceptualization (supporting), Methodology (equal), Supervision (equal), Original draft (supporting), Review and editing (supporting). **Ameeta S. Kalokhe:** Conceptualization (supporting), Methodology (equal), Supervision (equal), Original draft (supporting), Review and editing (supporting). **Thanh Cong Nguyen:** Data collection (supporting), Review and editing (supporting). **Khanh Duc Nguyen:** Data collection (supporting), Review and editing (supporting). **Hao Thi Minh Bui:** Data collection (supporting), Review and editing (supporting). **Le Minh Giang:** Conceptualization (supporting), Methodology (equal), Supervision (equal), Original draft (supporting), Review and editing (supporting).

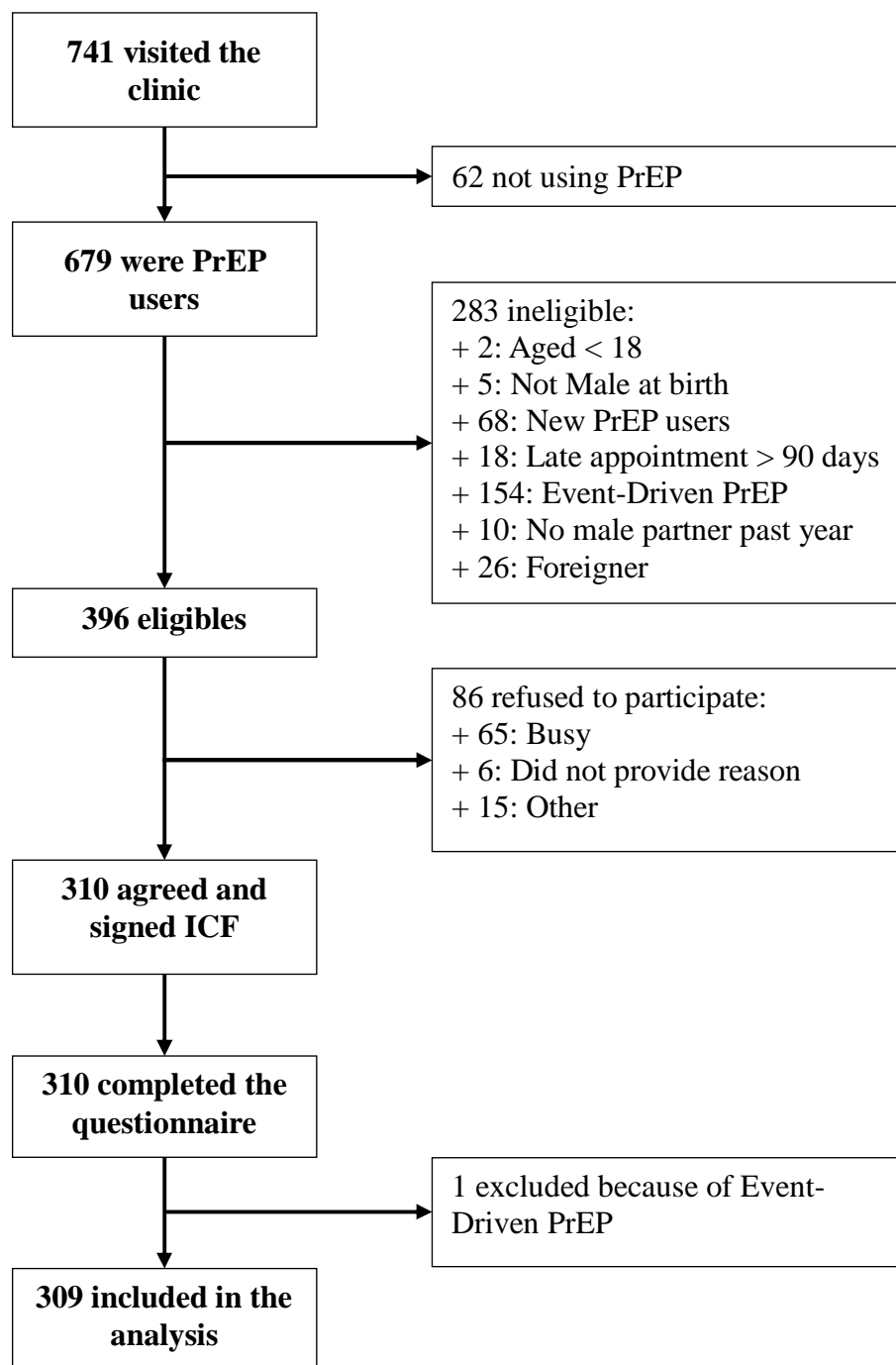
## References

1. Buller AM, Devries KM, Howard LM, Bacchus LJ. Associations between intimate partner violence and health among men who have sex with men: A systematic review and meta-analysis. *PLoS Med.* 2014;11(3):e1001609; doi: 10.1371/journal.pmed.1001609.
2. Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. *Lancet.* 2002;360(9339):1083–8; doi: 10.1016/S0140-6736(02)11133-0.
3. Friedman MS, Marshal MP, Guadamuz TE, Wei C, Wong CF, Saewyc EM, et al. A meta-analysis of disparities in childhood sexual abuse, parental physical abuse, and peer victimization among sexual minority and sexual nonminority individuals. *Am J Public Health.* 2011;101(8):1481–94; doi: 10.2105/AJPH.2009.190009.
4. Liu M, Cai X, Hao G, Li W, Chen Q, Chen Y, et al. Prevalence of intimate partner violence among men who have sex with men: An updated systematic review and meta-analysis. *Sex Med.* 2021;9(6):100433; doi: 10.1016/j.esxm.2021.100433
5. Campbell JC. Health consequences of intimate partner violence. *Lancet.* 2002;359(9314):1331–6; doi: 10.1016/S0140-6736(02)08336-8.
6. Afifi TO, MacMillan H, Cox BJ, Asmundson GJG, Stein MB, Sareen J. Mental health correlates of intimate partner violence in marital relationships in a nationally representative sample of males and females. *J Interpers Violence.* 2008;24(8):1398–417; doi: 10.1177/0886260508322192.
7. Ogunbajo A, Oginni OA, Iwuagwu S, Williams R, Biello K, Mimiaga MJ. Experiencing intimate partner violence (IPV) is associated with psychosocial health problems among gay, bisexual, and other men who have sex with men (GBMSM) in Nigeria, Africa. *J Interpers Violence.* 2022;37(9–10):NP7394–NP7425; doi: 10.1177/0886260520966677
8. Lund LE, Smorodinsky S. Violent death among intimate partners: A comparison of homicide and homicide followed by suicide in California. *Suicide Life Threat Behav.* 2001;31(4):451–9; doi: 10.1521/suli.31.4.451.22046
9. Davis A, Kaighobadi F, Stephenson R, Rael C, Sandfort T. Associations between alcohol use and intimate partner violence among men who have sex with men. *LGBT Health.* 2016;3(6):400–6; doi: 10.1089/lgbt.2016.0057.
10. Wang HY, Wang N, Chu ZX, Zhang J, Mao X, Geng WQ, et al. Intimate partner violence correlates with a higher HIV incidence among MSM: A 12-month prospective cohort study in Shenyang, China. *Sci Rep.* 2018;8(1):1–9; doi: 10.1038/s41598-018-21149-8.
11. Stephenson R, Finneran C. Receipt and perpetration of intimate partner violence and condomless anal intercourse among gay and bisexual men in Atlanta. *AIDS Behav.* 2017;21(8):2253–60; doi: 10.1007/s10461-017-1709-6
12. Wheeler J, Anfinson K, Valvert D, Lungo S. Is violence associated with increased risk behavior among MSM? Evidence from a population-based survey conducted across nine cities in Central America. *Glob Health Action.* 2014;7(1):24814; doi: 10.3402/gha.v7.24814

13. Schafer KR, Brant J, Gupta S, Thorpe J, Winstead-Derlega C, Pinkerton R, et al. Intimate partner violence: A predictor of worse HIV outcomes and engagement in care. *AIDS Patient Care STDS*. 2012;26(6):356–65; doi: 10.1089/apc.2011.0409.
14. Evens E, Lanham M, Santi K, Cooke J, Ridgeway K, Morales G, et al. Experiences of gender-based violence among female sex workers, men who have sex with men, and transgender women in Latin America and the Caribbean: A qualitative study to inform HIV programming. *BMC Int Health Hum Rights*. 2019;19(1):1–14; doi: 10.1186/s12914-019-0187-5.
15. Johnston LG, Mon MM, Steinhaus M, Sass J. Correlates of forced sex among young men who have sex with men in Yangon and Monywa, Myanmar. *Arch Sex Behav*. 2017;46(4):1001–10; doi: 10.1007/s10508-016-0761-z.
16. Hershow RB, Miller WC, Giang LM, Sripaipan T, Bhadra M, Nguyen SM, et al. Minority stress and experience of sexual violence among men who have sex with men in Hanoi, Vietnam: Results from a cross-sectional study. *J Interpers Violence*. 2021;36(13–14):6531–49; doi: 10.1177/0886260518819884
17. Stephenson R, Finneran C. The IPV-GBM scale: A new scale to measure intimate partner violence among gay and bisexual men. *PLoS One*. 2013;8(6):e62592; doi: 10.1371/journal.pone.0062592
18. Son VH, Safarnejad A, Nga NT, Linh VM, Manh PD, Long NH, et al. Estimation of the population size of men who have sex with men in Vietnam: Social app multiplier method. *JMIR Public Health Surveill*. 2019;5(2):e12451; doi: 10.2196/12451.
19. Le Minh Giang. The Hanoi MSM (HIM Hanoi) Study: Evidence for action on HIV epidemic among MSM HIM [Conference presentation]. Dissemination Workshop; 2019 Sep 27; Hanoi Medical University, Hanoi, Vietnam.
20. Lwanga SK, Lemeshow S, World Health Organization. Sample size determination in health studies: A practical manual. Geneva: World Health Organization; 1991.
21. Van Ommeren M, Sharma B, Thapa S, Makaju R, Prasain D, Bhattarai R, et al. Preparing instruments for transcultural research: Use of the translation monitoring form with Nepali-speaking Bhutanese refugees. *Transcult Psychiatry*. 1999;36(3):285–301; doi: 10.1177/136346159903600304
22. Sherbourne CD, Stewart AL. The MOS social support survey. *Soc Sci Med*. 1991;32(6):705–14; doi: 10.1016/0277-9536(91)90150-b.
23. Moser A, Stuck AE, Silliman RA, Ganz PA, Clough-Gorr KM. The eight-item modified Medical Outcomes Study Social Support Survey: Psychometric evaluation showed excellent performance. *J Clin Epidemiol*. 2012;65(10):1107–16; doi: 10.1016/j.jclinepi.2012.04.007
24. Pruitt KL, White D, Mitchell JW, Stephenson R. Sexual agreements and intimate-partner violence among male couples. *Int J Sex Health*. 2015;27(4):429–41; doi: 10.1080/19317611.2015.1037037



25. Stephenson R, Freeland R, Finneran C. Intimate partner violence and condom negotiation efficacy among gay and bisexual men in Atlanta. *Sex Health*. 2016;13(4):366–72; doi: 10.1071/SH15212
26. Sharma A, Kahle E, Sullivan S, Stephenson R. Sexual agreements and intimate partner violence among male couples in the US: An analysis of dyadic data. *Arch Sex Behav*. 2021;50:1087–105; doi: 10.1007/s10508-020-01783-y
27. Wei D, Hou F, Hao C, Gu J, Dev R, Cao W, et al. Prevalence of intimate partner violence and associated factors among men who have sex with men in China. *J Interpers Violence*. 2021;36(21–22):NP11968–93, doi: 10.1177/0886260519889935.
28. Yu Y, Xiao S. Health and life satisfaction for Chinese gay men in Guangzhou, China. *Zhong Nan Da Xue Xue Bao Yi Xue Ban*. 2017;42(12):1407–16; doi: 10.11817/j.issn.1672-7347.2017.12.009.
29. Semple SJ, Stockman JK, Goodman-Meza D, Pitpitan EV, Strathdee SA, Chavarin CV, et al. Correlates of sexual violence among men who have sex with men in Tijuana, Mexico. *Arch Sex Behav*. 2017;46:1011–29; doi: 10.1007/s10508-016-0747-x
30. Rohrbaugh JB. Domestic violence in same-gender relationships. *Fam Court Rev*. 2006;44(2):287–99; doi: 10.1111/j.1744-1617.2006.00086.x
31. Luster T, Small SA. Sexual abuse history and number of sex partners among female adolescents. *Fam Plann Perspect*. 1997;29(5):204–11; doi: 10.2307/2953396.
32. Sathiyasuman A. Associated risk factors of STIs and multiple sexual relationships among youths in Malawi. *PLoS One*. 2015;10(8):e0134286; doi: 10.1371/journal.pone.0134286.
33. Kalichman SC, Ntseane D, Nthomang K, Segwabe M, Phorano O, Simbayi LC. Recent multiple sexual partners and HIV transmission risks among people living with HIV/AIDS in Botswana. *Sex Transm Infect*. 2007;83(5):371–5; doi: 10.1136/sti.2006.023630.
34. Mishra VK, Bignami-Van Assche S. Concurrent sexual partnerships and HIV infection: Evidence from national population-based surveys. Macro International; 2009. Available from: <https://dhsprogram.com/pubs/pdf/wp62/wp62.pdf>
35. Stults CB, Javdani S, Greenbaum CA, Kapadia F, Halkitis PN. Intimate partner violence and sex among young men who have sex with men. *J Adolesc Health*. 2016;58(2):215–22; doi: 10.1016/j.jadohealth.2015.10.008



**Figure 1. Study recruitment chart from March 27<sup>th</sup> to May 14<sup>th</sup> (7 weeks)**

**Table 1. Demographic and behavioral characteristics of men who have sex with men using PrEP by experience of IPV in the past 12 months, Hanoi, Vietnam, 2023. (n = 309)**

	<b>Total N (%)</b>	<b>IPV past 12 months N (%)</b>	<b>No IPV past 12 months N (%)</b>	<b>p-value</b>
<b>Age</b>				0.133
> 24 years old	197 (63.8)	126 (60.9)	71 (69.6)	
18 – 24 years old	112 (36.2)	81 (39.1)	31 (30.4)	
<b>Highest educational level</b>				0.639
High school or below	130 (42.1)	89 (43.0)	41 (40.2)	
University or higher	179 (57.9)	118 (57.0)	61 (59.8)	
<b>Relationship status</b>				0.698
Single	192 (62.1)	131 (63.3)	61 (59.8)	
In the relationship	102 (33.0)	68 (32.9)	34 (33.3)	
Married	11 (3.6)	6 (2.9)	5 (4.9)	
Separate/Divorce/Widow	4 (1.3)	2 (1.0)	2 (2.0)	
<b>Housing condition, past 12 month</b>				0.002
Security	256 (82.8)	162 (78.3)	94 (92.2)	
Insecurity	53 (17.2)	45 (21.7)	8 (7.8)	
<b>Employment</b>				0.941
No	40 (12.9)	27 (13.0)	13 (12.8)	
Yes	269 (87.1)	180 (87.0)	89 (87.2)	
<b>Monthly personal income (VND)</b>				0.875
≤ 7 million	98 (31.7)	67 (32.4)	31 (30.4)	
> 7 million	211 (68.3)	144 (68.6)	67 (67.7)	
<b>Sexual orientation</b>				0.692
Straight	123 (39.8)	84 (40.6)	39 (38.2)	
Gay	186 (60.2)	123 (59.4)	63 (61.8)	
<b>Preferred penile–anal sexual role</b>				0.210
Receptive	109 (35.3)	67 (32.4)	42 (41.2)	
Versatile	77 (24.9)	51 (24.6)	26 (25.5)	
Insertive	123 (39.8)	89 (43.0)	34 (33.3)	
<b>Number of sex partners, past 12 months</b>				<0.001

	<b>Total N (%)</b>	<b>IPV past 12 months N (%)</b>	<b>No IPV past 12 months N (%)</b>	<b>p-value</b>
0 or 1	51 (16.5)	21 (10.1)	30 (29.4)	
2-5	171 (55.3)	116 (56.0)	55 (53.9)	
>= 5	87 (28.2)	70 (33.8)	17 (16.7)	
<b>Number of casual sex partners, past 12 months</b>				<0.001
0 or 1	157 (50.8)	95 (45.9)	62 (60.8)	
2-5	98 (31.7)	66 (31.9)	32 (31.4)	
>= 5	54 (17.5)	46 (22.2)	8 (7.8)	
<b>Condom use in anal sex, past 12 month</b>				0.059
All of the times	146 (47.2)	90 (43.5)	56 (54.9)	
Not all of the time	163 (52.8)	117 (56.5)	46 (45.1)	
<b>Sexualized drug use, past 12 months</b>				0.105
<b>No</b>	105 (34.0)	64 (30.9)	41 (40.2)	
<b>Yes</b>	204 (66.0)	143 (69.1)	61 (59.8)	
<b>Group sex, past 12 month</b>				0.001
No	235 (76.1)	146 (70.5)	89 (87.3)	
Yes	74 (24.0)	61 (29.5)	13 (12.8)	
<b>Social support score (Mean, SD)</b>	65.4 (1.37)	62.8 (1.65)	70.6 (2.39)	0.008 <sup>a</sup>
Tangible support (Mean, SD)	66.3 (1.52)	63.7 (1.82)	71.6 (2.68)	0.013 <sup>a</sup>
Emotional support (Mean, SD)	64.5 (1.44)	62.0 (1.73)	69.5 (2.54)	0.014 <sup>a</sup>
<b>Time on PrEP</b>				0.842
1 – 12 months	152 (49.2)	101 (48.8)	51 (50.0)	
> 12 months	157 (50.8)	106 (51.2)	51 (50.0)	

<sup>a</sup>p-value from a two-sided T-test, otherwise a Chi-squared test.

VND, Vietnamese Dong; STI, sexually transmitted infection, including Herpes, Syphilis, Gonorrhea, or Chlamydia.

**Table 2. Percentage of intimate partner violence victimization among men who have sex with men using PrEP at a clinic in Hanoi, Vietnam, 2023. (n = 309)**

	<b>Past 12 months</b>	<b>Lifetime</b>
<b>Any IPV</b>	<b>207 (67.0)</b>	<b>210 (68.0)</b>
<b>Physical &amp; Sexual (6 items)</b>		
1. Punch/Hit/Slap you	26 (8.4)	38 (12.3)
2. Kick you	11 (3.6)	16 (5.2)
3. Push/shove you	11 (3.6)	18 (5.8)
4. Force you to do something sexually that you didn't want to do	12 (3.9)	19 (6.2)
5. Rape you	14 (4.5)	25 (8.1)
6. Damage your property	7 (2.3)	14 (4.5)
<i>Any Physical &amp; Sexual</i>	<i>47 (15.2)</i>	<i>67 (21.7)</i>
<i>Cronbach Alpha<sup>a</sup></i>	<i>0.7370</i>	<i>0.8178</i>
<b>Monitoring (5 items)</b>		
7. Demand access to your cell phone	65 (21.0)	78 (25.2)
8. Demand access to your email	44 (14.2)	56 (18.1)
9. Read your text messages without your knowledge	80 (25.9)	95 (30.7)
10. Read your email without your knowledge	22 (7.1)	29 (9.4)
11. Repeatedly post on your social networking pages	50 (16.2)	53 (17.2)
<i>Any Monitoring</i>	<i>119 (38.5)</i>	<i>123 (39.8)</i>
<i>Cronbach Alpha<sup>a</sup></i>	<i>0.8085</i>	<i>0.8555</i>
<b>Controlling (4 items)</b>		
12. Prevent you from seeing your family	2 (0.7)	5 (1.6)
13. Prevent you from seeing his family	19 (6.2)	21 (6.8)
14. Prevent you from seeing your friends	34 (11.0)	38 (12.3)
15. Prevent you from seeing his friends	40 (12.9)	40 (12.9)
<i>Any Controlling</i>	<i>59 (19.1)</i>	<i>61 (19.7)</i>
<i>Cronbach Alpha<sup>a</sup></i>	<i>0.5558</i>	<i>0.7813</i>
<b>Emotional (3 items)</b>		
16. Call you fat or ugly	114 (36.9)	127 (41.1)
17. Ask or tell you to “act straight” around certain people	46 (14.9)	58 (18.8)
18. Criticize your clothes	68 (22.0)	85 (27.5)
<i>Any Emotional</i>	<i>144 (46.6)</i>	<i>151 (48.9)</i>

	<b>Past 12 months</b>	<b>Lifetime</b>
<i>Cronbach Alpha</i>	<i>0.7516</i>	<i>0.8075</i>
<b>HIV-related (3 items)<sup>b</sup></b>	<b>n = 59</b>	<b>n = 60</b>
19. Lie to you about his HIV status	7 (11.9)	12 (20.0)
20. Not tell you he had HIV before you had sex	6 (10.2)	11 (18.3)
21. Intentionally transmit HIV to you	1 (1.7)	2 (3.3)
<i>Any HIV-Related</i>	<i>7 (11.9)</i>	<i>12 (20.0)</i>
<i>Cronbach Alpha<sup>a</sup></i>	<i>0.7891</i>	<i>0.7788</i>
<i>Cronbach Alpha for the whole scale (excluding HIV-related subscale)<sup>a</sup></i>	<i>0.8189</i>	<i>0.8826</i>

<sup>a</sup>Standardized Cronbach Alpha was reported.

<sup>b</sup>Missing because participants were not living with any HIV-positive partners.

**Table 3. Multivariable logistics regression of experiencing IPV past 12 months on associated factors among men who have sex with men, Hanoi, Vietnam, 2023. (n = 309)**

	Adjusted OR (95% CI)	p-value
<b>Age group</b>		
> 24 years old	1	
18 – 24 years old	1.97 (1.12, 3.45)	0.019
<b>Housing condition, past 12 month</b>		
Security	1	
Insecurity	2.00 (0.85, 4.70)	0.112
<b>Preferred penile–anal sexual role</b>		
Receptive	1	
Versatile	1.24 (0.64, 2.39)	0.531
Insertive	2.01 (1.10, 3.69)	0.024
<b>Number of sex partners, past 12 months</b>		
0 or 1	1	
2-5	2.53 (1.29, 4.99)	0.007
>= 5	3.44 (1.45, 8.16)	0.005
<b>Condom use in anal sex, past 12 month</b>		
All of the times	1	
Not all of the time	1.34 (0.79, 2.25)	0.277
<b>Sexualized drug use, past 12 months</b>		
No	1	
Yes	1.26 (0.73, 2.16)	0.407
<b>Group sex, past 12 month</b>		
No	1	
Yes	1.79 (0.84, 3.79)	0.130
<b>Social support score</b>	0.99 (0.98, 1.00)	0.070

IPV, intimate partner violence; OR, odds ratio; CI, confidence interval

The number of sex partners in the past 12 months was selected instead of the number of casual sex partners because of better performane, tested by Likelihood ratio test.

**Supplement Table 1. Reasons for ineligibilities of clients who visit SHP clinic, Hanoi Vietnam, 2023.**

	<b>Frequency</b>
Clients came to SHP	741
PrEP clients	679
In-eligible clients	283
Age < 18	2
Not Male	5
M0 clients	68
Late > 90 days	18
Event-driven PrEP	154
No partner in the past year	10
Not invited	26
Eligible clients	396
Refuse to participate	86
Agree and sign ICF	310
Complete the questionnaire	310



**Supplement Table 2. The comparison between participants who participated and did not participate in the study.**

	<b>Refuse to participate (n = 86)</b>	<b>Agree to participate (n = 309)<sup>§</sup></b>	<b>P-value</b>
<b>Age</b>			0.001
<= 24 years old	17 (19.8)	122 (39.5)	
> 24 years old	69 (80.2)	187 (60.5)	
<b>Months on PrEP</b>			0.070
<= 3 months	9 (10.5)	58 (18.8)	
> 3 months	77 (89.5)	251 (81.2)	
<b>Highest educational level<sup>‡</sup></b>			0.067
High school or below	20 (25.0)	95 (30.7)	
College/ Vocational School	15 (18.8)	35 (11.3)	
University	34 (42.5)	156 (50.5)	
Post-graduate	11 (13.8)	23 (7.4)	
<b>Employment<sup>‡</sup></b>			0.047
Unemployed	4 (5.0)	40 (12.9)	
Part-time	14 (17.5)	71 (23.0)	
Full time	62 (77.5)	195 (64.1)	
<b>Male partner, 12 months<sup>‡</sup></b>			0.049
No	1 (1.3)	0	
Yes	79 (98.7)	309 (100)	
<b>Male lover, 12 months<sup>‡</sup></b>			0.466
No	32 (40.0)	110 (35.6)	
Yes	48 (60.0)	199 (64.4)	

<sup>‡</sup>6 observations with missing values refused to participate because they left too quickly so not screening information collected.

<sup>§</sup>1 observation was excluded due to ineligibility after participating in the study.