

## RESEARCH ARTICLE

# Associations between different forms of intimate partner violence and posttraumatic stress among women who use drugs and alcohol in Kyrgyzstan

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## Abstract

Survivors of intimate partner violence (IPV) have an increased risk of experiencing posttraumatic stress, and the subsequently associated symptoms can vary by form of IPV exposure (i.e., physical, sexual, or psychological IPV). Related research among socially marginalized populations, however, is limited, including among women who use and misuse substances. Drawing on baseline data from a pilot study conducted among 213 women in Kyrgyzstan who reported using drugs or engaging in hazardous alcohol use, we examined the associations between different forms of IPV and severe posttraumatic stress symptoms (PTSS). The vast majority of participants reported lifetime (93.9%,  $n = 200$ ) and past 3-month (65.3%,  $n = 139$ ) IPV, and two thirds of participants (65.3%,  $n = 139$ ) reported experiencing PTSS in the prior month. Multivariable logistic regression analyses indicated statistically significant associations between only some forms of IPV and PTSS, including physical IPV, adjusted odds ratio (aOR) = 3.24, 95% confidence interval (CI) [1.15, 9.14], and injurious IPV, aOR = 2.71, 95% CI [1.10, 6.65]. Additionally, experiencing any form of IPV was associated with 4.95 higher odds of reporting PTSS, 95% CI [1.16, 21.15]; no other results were significant. These results not only underscore the need for future research on the mechanisms that might explain the unique associations between different forms of IPV and posttraumatic stress, but also highlight an urgent need for trauma-informed mental health and psychosocial support interventions for women who use drugs and alcohol.

A global public health priority, intimate partner violence (IPV; i.e., physical, sexual, and/or psychological violence and coercion by a current or former partner; Breiding et al., 2015), affects an estimated 35% of women worldwide (World Health Organization [WHO], 2021). Among women who use and misuse substances such as alcohol or illicit drugs, the risk of IPV is particularly acute, with prevalence rates frequently exceeding 50%, especially among treatment-engaged samples (El-Bassel et al., 2004; Schneider et al., 2009; Stone & Rothman, 2019). Numerous

studies examining the mechanisms linking IPV and substance use demonstrate a bidirectional association. For example, in their recent systematic review, Ogden et al. (2022) found that IPV acts as a predictor of substance use through coercion or the use of substances as a means of self-medication and coping. Conversely, the findings from another systematic review by Stone and Rothman (2019) suggest the timing of IPV and substance use development may vary, with drug use sometimes preceding IPV, and vice versa, such that substance use may increase one's

vulnerability to IPV, exacerbate abuse, create financial insecurity, and pose obstacles to seeking substance use treatment services.

In addition to the risk of substance use and misuse, there are a number of negative health outcomes associated with IPV among women, such as chronic pain and sexually transmitted infections, including HIV (Dillion et al., 2013; Siemieniuk et al., 2013; Stubbs & Szoeki, 2021; Walker et al., 2022). IPV may also adversely impact mental health and well-being; for example, a systematic review of IPV victimization globally found associations between IPV and an increased risk of developing posttraumatic distress and symptoms of depression and anxiety (Lagdon et al., 2014). As IPV is a potentially traumatic event, posttraumatic distress and posttraumatic stress symptoms (PTSS) are consistently identified as a consequence of exposure (Dillon et al., 2013; Grose et al., 2019; Meinhart et al., 2021), with lifetime prevalence ranging between 31% and 84% among survivors (Golding, 1999). For instance, a recent study conducted among a group of 90 survivors of IPV found that 54.4% of participants exhibited varying degrees (i.e., mild, moderate, or severe) of PTSS as assessed using the Post-Traumatic Stress Diagnostic Scale (Y. Sabri, 2021).

As outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013), PTSS encompass symptoms of intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and/or reactivity. The extant literature has demonstrated a clear link between IPV and PTSS; however, the findings have been mixed with regard to the relative impact of different forms of IPV. More specifically, studies have suggested that physical, psychological, and sexual IPV (Basile et al., 2004; Nzigo et al., 2020; Simpson et al., 2022); physical and sexual IPV (An et al., 2019); psychological IPV only (Pico-Alfonso, 2005); sexual IPV (Bennice et al., 2003; Jonker et al., 2019); physical and psychological IPV (B. Sabri et al., 2013); and psychological and sexual IPV (Houry et al., 2006) increase the risk of PTSS compared with other forms of IPV. Although these forms of IPV exposure may lead to the development of PTSS, there remains a lack of consensus regarding which of these forms of IPV are most impactful as well as a dearth of scientific exploration of the deleterious effects of varied forms of IPV on PTSS beyond physical, psychological, and sexual IPV.

Gaps additionally persist regarding which populations are included in studies examining IPV and PTSS. Particularly vulnerable women, such as those who use and misuse substances, are often overlooked or excluded from studies. The limited existing research has tended to examine the general associations between IPV and PTSS, further highlighting the severity of their linkage and the need for more nuanced research. For example, in a U.S.-based study,

Sullivan and colleagues (2009) found that IPV-related PTSS mediated the association between both physical and psychological IPV and drug problems. Further, a study conducted in five European regions indicated that, among women who injected drugs, those who experienced IPV were twice as likely to develop PTSS as those who did not experience IPV (Tirado-Muñoz et al., 2018). In yet another study, women in a community sample reported both using drugs to cope with PTSS and that drug use exacerbated PTSS, highlighting the complex associations among IPV, PTSS, and substance use (Sullivan & Holt, 2008).

Although substantial research has demonstrated an association between IPV and PTSS, few studies have examined this association in Central Asia or examined the associations between different forms of IPV and PTSS among women who use and misuse substances. This is a critical gap, as Central Asia, including Kyrgyzstan, has extremely high and growing rates of substance use and injection drug use (United Nations [U.N.] Office on Drugs and Crime, 2022). Further, access to services for survivors is limited: A regional Demographic and Health Survey found that IPV survivors tend to seek help only when they encounter severe and multiple forms of violence (National Statistical Committee of Kyrgyz Republic, 2021). Finally, mental health services in Kyrgyzstan are impacted by insufficient funding and trained providers, as well as underregulation, resulting in suboptimal mental health care (Molchanova, 2014; Molchanova et al., 2015; Pinchuk et al., 2021; WHO, 2008). Women who use and misuse substances may further experience stigma and discrimination, making it especially challenging to seek services; yet, there may be a high prevalence of both IPV and PTSS in this population. The respective and linked realities of substance use, IPV, and mental health in Central Asia highlight the need to address the existing gap in understanding the associations between different forms of IPV and PTSS among women who use drugs and/or alcohol in Kyrgyzstan.

This study aimed to examine (a) the proportion of women with IPV exposure and co-occurring exposure to different forms of IPV and PTSS and (b) the associations between different forms of IPV and PTSS among a sample of women reporting a history of drug and/or alcohol use within Kyrgyzstan. Of note, the word “forms” is used to indicate different experiences (e.g., physical, sexual) of IPV rather than “types” or “typologies” for clarity (Alexander & Johnson, 2023; Ali et al., 2016).

## METHOD

### Participants and procedure

Data for this paper were derived from baseline surveys collected as part of Project WINGS of Hope, a pilot screening,

brief intervention, and referral to treatment (SBIRT) study focused on gender-based violence (GBV) and conducted among 213 women with a history of drug or alcohol use. The study was carried out between 2013 and 2016, during which three different cohorts were recruited to participate ( $n = 78$ ,  $n = 55$ , and  $n = 80$ ). The first two cohorts were recruited in collaboration with two harm-reduction non-government organizations (NGOs) in Kyrgyzstan: Asteria, located in the capital city of Bishkek, and Podruga, located in the southern border city of Osh. The third cohort was recruited in partnership with Asteria and Podruga and two additional NGOs in each city: The Chance Crisis Center and Sotsium in Bishkek, and the public foundation Positive Dialogue and the Plus Center Public Foundation in Osh. At the start of the project, a community collaborative research board (CCRB), the No Violence Coalition (NOVIC), was established. The NOVIC consisted of a diverse set of community members including NGO staff, police, Ministry of Health representatives, substance abuse treatment providers, representatives from Kyrgyz State Medical Academy, U.N. Office on Drugs and Crime, United Nations Development Programme, crisis centers, and GBV/IPV service providers. The CCRB and lead members of the partner organizations provided input and feedback during all stages of the project. The Institutional Review Boards (IRBs) at Columbia University and the Global Research Institute of Kyrgyzstan approved the study design and all materials. The Arizona State University IRB additionally approved the study data analysis and reporting.

Outreach workers from collaborating NGOs engaged in recruitment activities through flyer distribution, inviting women to be screened, visiting public venues (e.g., parks) to recruit participants, and responding to word-of-mouth referrals from other participants. Women who expressed an interest in participating in the study completed screening and consent procedures. Eligibility criteria included being 18 years of age or older, self-identifying as a woman, and demonstrating basic fluency in Russian. In addition, women were required to endorse at least one of the following: (a) past 90-day illicit drug use; (b) past 90-day hazardous drinking; (c) having received drug or alcohol treatment in the past 6 months; or (d) having exchanged sex for money, goods, food, drugs, or housing in the past 90 days. The last option (i.e., “d”) was added during the recruitment of the third cohort, and all women who endorsed this option also endorsed one of the other three options.

Participants who were eligible and agreed to participate in the study completed a computerized assisted baseline survey using audio computer-assisted self-interview (ACASI) software, which allowed participants with low

**TABLE 1** Sociodemographic and intimate partner violence (IPV)-related characteristics of the sample

Variable	<i>M</i>	<i>SD</i>
Demographic characteristics		
Age (years)	39.0	0.6
	<i>n</i>	%
Married	103	48.4
At least some postsecondary education	142	66.7
Lifetime illicit drug use	186	87.3
Past 90-day illicit drug use	145	68.1
Lifetime transactional sex	108	50.7
Past 90-day transactional sex	43	20.2
Lifetime IPV		
Verbal	172	80.8
Physical	187	87.8
Psychological	137	64.3
Sexual	155	72.8
Injurious	110	51.6
Deprivation	52	24.4
Any	200	93.9
All (deprivation not included)	65	30.5
All (deprivation included)	25	11.7
Past 3-month IPV		
Verbal	116	54.5
Physical	113	53.1
Psychological	82	38.5
Sexual	95	44.6
Injurious	43	20.2
Deprivation	31	14.6
Any	139	65.3
All (deprivation not included)	28	13.2
All (deprivation included)	10	4.7
PTSS (PCL-C score $\geq 45$ )	139	65.3

Note:  $N = 213$ . PTSS = posttraumatic stress symptoms; PCL-C = PTSD Checklist-Civilian Version.

levels of literacy to participate (Hewett et al., 2004). The baseline survey included a wide range of items, such as questions related to sociodemographic characteristics, lifetime and recent GBV history, substance use, mental health, and access to or linkage with services. Participants received compensation equivalent to \$3 (USD) for completing a screening interview and \$5 for completing the baseline assessment.

On average, participants in this sample were approximately 39 years old ( $SD = 0.61$ ). Nearly half the participants identified as currently married (48.3%), and just over two thirds reported having completed at least some postsecondary education (66.7%; see Table 1).

## Measures

### Dependent variable: PTSS

Our analysis assessed one primary outcome of interest: PTSS. This was a dichotomous outcome variable constructed from the Posttraumatic Stress Disorder (PTSD) Checklist–Civilian Version (PCL-C; Weathers et al., 1993). The PCL-C is a 17-item self-report checklist of past-month PTSS, informed by *DSM-IV* criteria (APA, 2000). The reported reliability of the PCL-C is .97 for all 17 items (Weathers et al., 1993). Symptoms include feelings, experiences, and behaviors related to a “stressful experience in the past.” Each symptom is measured on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). A cutoff score of 45 was used to indicate a high level of PTSS severity suggesting a probable PTSD diagnosis; thus, respondents who scored less than 45 received a score of 0, and those who scored at least 45 received a score of 1. The cutoff for severe PTSS indicating probable PTSD was used given that recruitment occurred in a specialized setting and given the high percentage of women in the sample (91.5%) who scored 33 or above, the cutoff that is typically used in general samples (National Center for PTSD, n.d.). In the present sample, Cronbach’s alpha was .93.

### Independent variables

#### *IPV exposure*

The primary independent variable of interest—forms of lifetime and past-3-month IPV experienced—were assessed using an adapted version of the Revised Conflict Tactics Scale (CTS-2; Straus et al., 1996). The internal consistency of the original CTS-2 has been shown to range from .75 to .95. In alignment with the original CTS-2, participants were asked whether they had experienced verbal abuse, psychological abuse, physical violence, injurious abuse (i.e., violence resulting in injuries), and/or sexual violence perpetrated by a current or former intimate partner. Formative research informed specific cultural adaptations of the CTS2. In this study, psychological abuse also included items on being blindfolded, stalked, or prevented from seeing family members or friends as well as being forced to eat in isolation. The study also included deprivation as an additional form of IPV. Deprivation was assessed using a single item wherein participants were asked whether a partner had ever deprived them of food, water, or sleep. Participants who responded affirmatively to one or more items within the set of items representing a particular form of IPV were coded as having experienced that respective form of IPV, with temporality determined by a follow-up question asking whether the experience

occurred in the past 3 months. In the present study, Cronbach’s alpha was .83 both with and without the item related to deprivation.

#### *Covariates*

Age was included as a continuous variable and measured by subtracting the participant’s year of birth from the year of data collection. Several binary variables were also included: marital status (currently married/in common law marriage vs. not), educational attainment (completed at least some postsecondary education vs. not), lifetime transactional sex history (lifetime experience of exchanging sex for money, goods, drugs or housing vs. not), past-3-month transactional sex history (past-3-month experience of exchanging sex for money, goods, drugs or housing vs. not), lifetime history of illicit drug use (lifetime use of illicit drugs [e.g., opium, heroin] vs. not), and past-3-month history of illicit drug use (past-3-month use of illicit drugs [e.g., opium, heroin] vs. not).

## Data analysis

We first estimated descriptive statistics for all variables included in the models. We then created figures to present the co-occurrence of different forms of lifetime IPV in the lifetime (Figure 1) and past-3-month IPV (Figure 2). Bivariate and multivariable logistic regressions were then used to estimate the associations between IPV and PTSS, as shown in Table 2. Of note, the respective IPV measures per row in Table 2 are categorical; for example, verbal IPV was measured as not experiencing verbal IPV (reference), experiencing verbal IPV in the past 3 months, and experiencing verbal IPV at some point in their lifetime, but not in the past 3 months (i.e., more than 3 months ago). Covariates in the adjusted models were selected based on considerations regarding the sociodemographic specificities of this group of marginalized women and the extant literature on IPV and PTSS and included age, marital status, educational attainment, transactional sex history, and history of illicit drug use. All analyses dropped missing observations, which accounted for fewer than 5% of observations. Analyses were conducted using Stata (Version 15; StataCorp, 2017).

## RESULTS

### Descriptive analysis

Table 1 presents participant characteristics. Most participants in this sample indicated exposure to some form of lifetime IPV ( $n = 200$ , 93.9%), and approximately two



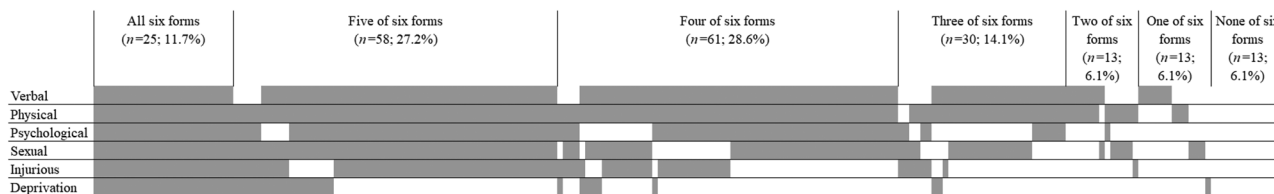


FIGURE 1 Forms of lifetime intimate partner violence experience among a sample of substance-involved women in Kyrgyzstan. Note: N = 213.

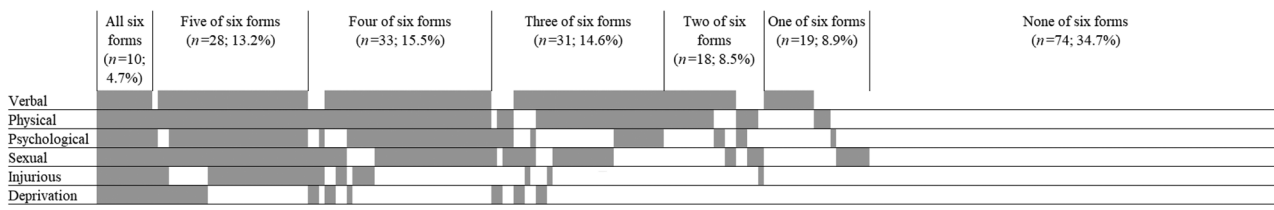


FIGURE 2 Forms of past-90-day intimate partner violence experience among a sample of substance-involved women in Kyrgyzstan. Note: N = 213.

thirds of the sample ( $n = 139, 65.3\%$ ) indicated experiencing some form of IPV in the past 3 months. The most commonly reported forms of lifetime IPV were physical ( $n = 187, 87.8\%$ ), verbal ( $n = 172, 80.8\%$ ), and sexual IPV ( $n = 155, 72.8\%$ ), followed by injurious IPV ( $n = 110, 54.6\%$ ) and deprivation ( $n = 52, 24.4\%$ ). Regarding past-month PTSS, nearly two thirds of the sample ( $n = 139, 65.3\%$ ) met the cutoff for a high level of symptom severity and probable PTSD.

### Co-occurrence of forms of IPV

Figures 1 and 2 present the extent to which participants reported experiencing different forms of IPV throughout their lifetime and during the past 3 months, respectively. Although there were no distinct patterns of co-occurrence, nor was co-occurrence limited to two forms of IPV during either timeframe, both figures demonstrate clear evidence of the co-occurrence of multiple forms of IPV in this sample. Only 6.1% of participants reported experiencing one form of IPV in their lifetime compared to 87.8% of participants who reported experiencing at least two forms of lifetime IPV. Among participants who reported experiencing at least two of the six possible forms of lifetime IPV, most reported exposure to four possible forms (28.6%), followed by five (27.2%), three (14.1%), all six (11.7%), and two forms of IPV (6.1%).

Although fewer participants reported experiencing IPV in the past 3 months, a general pattern of co-occurrence

persisted. Only 8.9% of participants reported experiencing one form of IPV in the past 3 months compared to 56.3% of participants who reported exposure to at least two forms of past-3-month IPV. Among participants who experienced at least two of six possible forms of IPV in the past 3 months, most experienced four forms (15.5%), echoing the lifetime IPV findings, followed by three (14.6%), five (13.2%), two (8.9%), and all six forms of IPV (4.7%).

### Multivariable logistic regression analyses

Table 2 reports odds ratios (ORs) of experiencing PTSS by form of IPV and IPV recency. The results show that specific forms of past-3-month IPV were significantly associated with PTSS in both the adjusted and unadjusted models, including physical IPV, adjusted OR (aOR) = 3.24, 95% CI [1.15, 9.14], OR = 3.45, 95% CI [1.43, 8.31]; injurious IPV, aOR = 2.71, 95% CI [1.10, 6.65], OR = 2.71, 95% CI [1.18, 6.22]; and any form of IPV, aOR = 4.95, 95% CI [1.16, 21.15], OR = 4.10, 95% CI [1.26, 13.31]. Past-3-month sexual IPV was also significantly associated with past-month PTSS but only in the unadjusted model, OR = 2.35, 95% CIs [1.19, 4.65]. No additional significant findings were indicated.

### DISCUSSION

In recognition of the paucity of research examining the severe mental health correlates of IPV among acutely

**TABLE 2** Odds of experiencing posttraumatic stress symptoms, by intimate partner violence experience

Variable	OR	95% CI	aOR	95% CI
Verbal				
Past 3 months	1.81	[0.87, 3.77]	1.96	[0.80, 4.79]
> 3 months ago	1.3	[0.57, 2.96]	0.97	[0.39, 2.42]
Physical				
Past 3 months	<b>3.45**</b>	<b>[1.43, 8.31]</b>	<b>3.24*</b>	<b>[1.15, 9.14]</b>
> 3 months ago	2.37	[0.95, 5.90]	1.53	[0.55, 4.26]
Psychological				
Past 3 months	1.57	[0.82, 3.03]	1.47	[0.69, 3.14]
> 3 months ago	1.42	[0.69, 2.93]	1.05	[0.47, 2.31]
Sexual				
Past 3 months	<b>2.35*</b>	<b>[1.19, 4.65]</b>	2.03	[0.96, 4.31]
> 3 months ago	2.01	[0.95, 4.26]	1.22	[0.53, 2.77]
Injurious				
Past 3 months	<b>2.71*</b>	<b>[1.18, 6.22]</b>	<b>2.71*</b>	<b>[1.10, 6.65]</b>
> 3 months ago	1.47	[0.77, 2.79]	1.27	[0.63, 2.57]
Deprivation				
Past 3 months	1.49	[0.64, 3.45]	1.85	[0.75, 4.59]
> 3 months ago	2.59	[0.83, 8.06]	1.59	[0.48, 5.25]
Any				
Past 3 months	<b>4.10*</b>	<b>[1.26, 13.31]</b>	<b>4.95*</b>	<b>[1.16 – 21.15]</b>
> 3 months ago	2.01	[0.59, 6.87]	1.22	[0.29, 5.18]

Notes: Bolding indicates significance. Each row represents a separate model. The reference group was participants with no lifetime experience of the specified form on violence. Covariates in the adjusted model include age, marital status, primary education, transactional sex history, and history of illicit drug use.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

marginalized women, the purpose of this study was to examine the associations between IPV and PTSS in a sample of women with a history of drug and/or alcohol use in the Central Asian nation of Kyrgyzstan. In doing so, we extend the existing literature on the associations between IPV and PTSS by providing a nuanced analysis of lifetime and recent (i.e., past-3-months) exposure to different forms of IPV and current (i.e., past-month) PTSS among women who use and misuse substances. The methodological expansion in this study should be used to conduct critical research on the possible mechanisms accounting for the associations observed in this study and carries implications for targeted programming for this acutely vulnerable population. Broadly, the findings first strengthen the existing evidence that women who use and misuse substances face more extreme risks of experiencing IPV (El-Bassel et al., 2004; Schneider et al., 2009; Stone & Rothman, 2019) than those who do not. In our sample, nearly all participants experienced some form of IPV, with exposure to verbal and physical abuse most commonly reported.

Further, we found there was an extensive co-occurrence of different forms of IPV, suggesting a high degree of IPV exposure with the potential to manifest multiple adverse physical, psychological, and psychosocial outcomes. For example, in a sample of U.S. college students, Sabina and Straus (2008) found that exposure to multiple forms of IPV was the strongest predictor of experiencing PTSS. Additionally, research has shown that PTSS among IPV survivors may also increase the risk of future IPV (Iverson et al., 2013, 2022). This is critical as women who use and misuse substances already face an increased risk for a range of adverse outcomes, such as poor mental health and HIV, and IPV may further exacerbate these risks (El-Bassel et al., 2022; National Institute on Drug Abuse, 2020; U.N. Programme on HIV/AIDS, 2021).

We found a high prevalence of PTSS, with about two thirds of participants meeting the criteria for a high level of PTSS symptom severity and probable PTSD. The prevalence of PTSS found in this study is higher than those found in studies of women with a history of drug and alcohol use (e.g., Nathanson et al., 2012) and may be potentially explained by the high levels of stigma and discrimination that women who use substances in Central Asia experience (Deryabina & El-Sadr, 2017; Ibragimov et al., 2017; Smith et al., 2022; Stringer et al., 2019), which may directly contribute to adverse mental health sequelae or stem from potentially delayed access to care, exacerbating risks. Stigma and discrimination among women who use and misuse substances in the context of IPV may additionally hinder access to IPV services, not only enabling ongoing IPV but also magnifying substance use and mental health risks. Further research on multilevel risks that may contribute to the high levels of PTSS observed in this study, as well as subsequent intervention programming that addresses multilevel risks, may serve to improve understanding and overall health outcomes. For example, a recent systematic review by Rao et al. (2019) on multilevel stigma interventions, such as community-level interventions and combined structural-level and interpersonal interventions, suggests the potential promise and importance of these approaches in addressing macro-level factors that impact individual-level health, although much more work is needed.

Consistent with many studies among clinical or shelter-based samples of survivors, the results of our analyses indicate that experiencing any IPV and experiencing recent violent physical victimization (i.e., physical abuse, such as kicking or slapping, and injurious abuse resulting in physical injury) is related to PTSS (Nathanson et al., 2012). In our models, however, other forms of IPV were not associated with PTSS. This failure to find significant associations should be interpreted with caution given the extant literature on robust associations between other forms of IPV

and PTSS (Houry et al., 2006; Pico-Alfonso, 2005; Simpson et al., 2022) and could be explained by the high degree of co-occurrence of multiple forms of IPV and a lack of power due to the sample size. Further, although it is clear that experiencing any type of violence and physical or injurious abuse is associated with PTSS, the specific pathways that link them are less clear and not identifiable through these data. Violence resulting in physical injuries that can potentially impact mobility and daily health, combined with visual trauma reminders and the anticipation of further harm in the context of the cycle of abuse, may potentially explain these findings; future research examining how different forms of IPV are linked to different types of PTSS may strengthen the field's understanding and advance potential treatment opportunities.

The general finding that recent IPV exposure was associated with PTSS alludes to the importance of early intervention and treatment availability for survivors of IPV. This may be critically important for women who use and misuse substances, as in this sample, given prior research that IPV and PTSS can affect substance use treatment engagement and relapse rates (Ogden et al., 2022; Sullivan et al., 2016). Research has additionally shown associations between the current or daily severity of various PTSD symptom clusters (e.g., hyperarousal, avoidance) and daily risks of substance use (Sullivan et al., 2016, 2020). Further, as noted, prior research has shown associations between PTSS and a risk of incident IPV among IPV survivors, thus generating additional risks (Iverson et al., 2013, 2022). To sufficiently support women in substance use treatment, the findings from this study suggest that it is imperative that treatment settings simultaneously address IPV and trauma during goal-setting and linkage to care. This may be facilitated by the use of comprehensive assessments and integrated safety planning wherein consideration is given to multiple potential triggers and risks rather than solely focusing on mental health, IPV, or substance use, as is frequently the case in practice settings. Likewise, considering treatment approaches that best attend to acute trauma may be critical to successfully addressing these intersecting risks. This finding and its associated clinical implications do not negate the need for attention to past IPV but rather underscore the need to attune to recent IPV and its linkage with PTSS.

The findings from this study should be considered alongside its limitations. The study relied on cross-sectional data and, thus, causal conclusions may not be drawn. The extant literature, including longitudinal examinations of IPV and mental health, has demonstrated that IPV is associated with subsequent PTSS (Dillon et al., 2013; Krause et al., 2008). However, it is also possible that participants experiencing PTSS were at an increased risk of IPV. Additional longitudinal research examining how dif-

ferent forms of IPV impact the risk of PTSS, and vice versa, among women who use drugs and/or alcohol may offer additional insight into the patterns observed in this study. This study also relied on a convenience sample of women recruited into a pilot intervention study, which limits the generalizability of the findings; however, participants were recruited across a range of NGOs serving the broader population of women who use and misuse substances. The study relied on self-report data, which may have affected the findings due to recall and social desirability bias. To mitigate social desirability bias, participants were reminded about the confidentiality of the study, and research team members supporting the study were thoughtfully selected from within partner organizations and trained in data collection.

Further, our use of standardized scales enabled comparability with other studies but limited our ability to capture cultural specificities, particularly in regard to PTSS. Although we were able to examine a number of different forms of IPV and their cultural specificities, we did not capture all the different forms of IPV that survivors may experience. It is possible that different patterns of association with PTSS may be observed when other forms of IPV, such as reproductive coercion and economic abuse, or the frequency of abuse are included. Importantly, PTSS were assessed using a measure based on the *DSM-IV* criteria instead of the current *DSM-5* criteria, and this study did not include an examination of other forms of trauma, such as childhood sexual abuse, which may have also impacted PTSS in this sample. Future research drawing on current *DSM* criteria and examining a wider range of childhood and adult traumatic experiences and their differential associations with PTSS among women who use and misuse substances would strengthen existing knowledge and clarify avenues for intervention. Finally, given the high prevalence of PTSS and the endorsement of a range of PTSS in this study, we used the highest standardized score cutoff for our dependent variable. Although the use of a high level of PTSS severity can inform responses for women most vulnerable to the potentially acute impact of IPV on PTSS, this measurement approach may have contributed to the different patterns of association observed in this study. Additional research using various thresholds may help extend the current findings.

The findings from this study bolster current knowledge regarding the association between different forms of IPV and PTSS among women who use drugs and/or alcohol and address a gap in the existing literature on the association between IPV and PTSS in Kyrgyzstan and the Central Asian region. The results suggest that, in particular, recent physical and injurious IPV is associated with greater PTSS severity. This has important implications for timely and targeted responses in clinical practice, especially within

the context of harm reduction and/or substance use treatment settings. The findings suggest that assessing recency and the form of IPV experienced could be relevant in risk assessment and treatment planning. Further, the findings suggest that the immediacy of psychosocial services may be imperative; given the robust literature on the pathways linking IPV to PTSS, and subsequent drug and alcohol use, ensuring timely services when PTSS are particularly severe may be critical to successful treatment outcomes. Moreover, increasing the general safety net of services through capacity-building across a range of providers who may work with IPV survivors and considering the best treatment approaches for PTSS in the context of IPV and substance use may improve outcomes among survivors. Our findings highlight the importance of integrating IPV and PTSS coping and safety strategies within substance use programming to mitigate risks and improve the lives of this acutely vulnerable group of women in Kyrgyzstan.

## OPEN PRACTICES STATEMENT

The study reported in this article was not formally preregistered. Neither the data nor the materials have been made available on a permanent third-party archive; requests for the data or materials should be sent via email to the lead author at [jiwatram@asu.edu](mailto:jiwatram@asu.edu).

## AUTHOR NOTE

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