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Psychological Intimate Partner Violence and Sexual Risk Behavior: Examining the Role of Distinct PTSD Symptoms in the Partner Violence-sexual Risk Link

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Abstract

BACKGROUND—Research has examined how physical and sexual intimate partner violence (IPV) victimization increases sexual risk behavior, yet research is lacking on 1) the effect of psychological IPV on sexual risk behavior and 2) factors through which psychological IPV may be linked to sexual risk behavior.

METHODS—The current study examined the relationship between psychological IPV and sexual risk behavior controlling for other forms of IPV (i.e., physical and sexual) in a sample of 186 HIV-negative community women currently experiencing IPV. Further, this study examined the potential mediating effects of four posttraumatic stress disorder (PTSD) symptom severity clusters (i.e., re-experiencing, avoidance, numbing, and hyperarousal) on this relationship.

FINDINGS—Results revealed that greater severity of psychological IPV was uniquely and directly related to greater sexual risk behavior. Additionally, of the four PTSD symptom severity clusters, only avoidance symptom severity mediated the relationship between psychological IPV and sexual risk behavior.

CONCLUSION—Implications for addressing psychological IPV and PTSD to improve women's sexual health outcomes are discussed.

Keywords

intimate partner violence; psychological IPV; posttraumatic stress; HIV risk behavior

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Introduction

Intimate partner violence (IPV) poses a significant threat to women's sexual health and increases women's susceptibility to HIV infection and other STIs (Coker, Davis, Arias, et al., 2002; Coker, 2007; Meyer, Springer, & Altice, 2011). Research has linked physical and sexual IPV to poorer sexual health, including sexually transmitted infections, sexual risk-taking behaviors, and mental health correlates of HIV risk, such as posttraumatic stress disorder (Cavanaugh, Hansen, & Sullivan, 2010; Coker, 2007; Maman, Campbell, Sweat, & Gielen, 2000; Meyer et al., 2011; Pitpitan et al., 2012; Wu, El-Bassel, Witte, Gilbert, & Chang, 2003), yet less work has addressed the effect of psychological IPV on sexual risk behavior or factors through which psychological IPV contributes to sexual risk behavior (e.g., trading sex for drugs or money, having sexual contact without using a condom, having sexual intercourse with someone whose HIV status is unknown). Given the growing body of literature showing the detrimental effects of psychological IPV on women's sexual health and wellbeing (Coker, Smith, McKeown, & King, 2000; Coker et al., 2002a; Pico-Alfonso, 2005; Pico-Alfonso et al., 2006; Sullivan, Cavanaugh, Buckner, & Edmondson, 2009), it is critical that research also investigates the influence of psychological IPV on sexual risk behavior. The current study examines the relationship between psychological IPV and sexual risk behavior and explores the potential mediating effects of distinct PTSD symptom clusters.

Psychological IPV may play a key role in sexual risk behavior. Psychological IPV includes the use of emotional and verbal abuse and tactics to instill fear, demean women's self-esteem, isolate women from support networks, and/or control their activities (Tolman, 1989). Experiences of psychological IPV are highly prevalent, have damaging effects on women's psychological well-being, and often co-occur with other forms of IPV (Coker et al., 2000; Sullivan, McPartland, Armeli, Jaquier, & Tennen, 2012). Very few studies have examined the unique effects of psychological IPV on women's sexual health; rather, research mostly has focused on IPV as a single construct measuring cumulative experiences of physical, sexual, and psychological IPV or has focused on the unique effects of physical and/or sexual IPV on sexual risk behavior (Coker, 2007; Meyer et al., 2011; Stockman, Lucea, & Campbell, 2013). Of the studies that have examined sexual health consequences of psychological IPV, there is evidence that psychological IPV is uniquely associated with sexually transmitted infections and correlates of sexual risk such as depressive symptoms and substance use (Coker et al., 2000; Coker et al., 2002a); however, research is scarce on the relationship between psychological IPV and other aspects of sexual risk behavior such as having unprotected sex or trading sex for drugs or money.

In addition to understanding the impact of psychological IPV on sexual risk behavior, research is needed on factors through which psychological IPV may be linked to sexual risk behavior. Mental health problems have been shown to mediate the relationship between physical and sexual IPV and sexual risk behaviors (Campbell, 2002; Fischbach & Herbert, 1997; Meyer et al., 2011) and may also be a critical factor to explore in understanding the relation to psychological IPV. PTSD has emerged as an important mental health correlate of sexual risk behavior among men and women across various populations, including women living with HIV and substance users (Machtiger, Wilson, Haber, & Weiss, 2012; Weiss,

Tull, Borne, & Gratz, 2013). Research examining PTSD specifically among women who experience IPV has found that psychological IPV is related to greater PTSD symptom severity (Coker et al., 2002b; Sullivan et al., 2009). There also is emerging evidence that IPV-related PTSD is associated with greater sexual risk behavior (Cavanaugh et al., 2010); however, these studies do not examine concurrent relationships between psychological IPV, PTSD, and sexual risk behavior.

Though PTSD is recognized as a prevalent mental health consequence of IPV and there is recent evidence that PTSD is related to psychological IPV and sexual risk behavior, our understanding of the extent to which the severity of distinct PTSD symptom clusters (i.e., re-experiencing, avoidance, numbing, and hyperarousal) accounts for the relationship between psychological IPV and sexual risk behavior is less clear. With one exception (Cavanaugh et al., 2010), the literature examining the relationship between PTSD and sexual risk behavior among women who experience IPV has examined PTSD as a single construct rather than examining the influence of distinct PTSD symptom clusters on sexual risk behavior. Cavanaugh and colleagues used a three factor structure of posttraumatic stress (i.e., re-experiencing, avoidance and numbing, and hyperarousal) to predict women's sexual risk behavior in a post-hoc analysis and found that the combined avoidance and numbing symptom severity cluster was associated with greater sexual risk behavior, hyperarousal was associated with less sexual risk behavior, and no significant association existed between re-experiencing and sexual risk behavior. Although informative, a four-factor structure of posttraumatic stress, which separates avoidance and numbing into distinct clusters, could provide more nuanced information about components of PTSD that are associated with sexual risk behavior. Indeed, a four-factor structure of posttraumatic stress has garnered strong empirical support across a variety of populations (King, Leskin, King, & Weathers, 1998; Yufik & Simms, 2010) and these clusters have demonstrated differential relationships to mental and physical health problems across populations of women (Sullivan & Holt, 2008). Applying a four-factor structure of PTSD to the study of IPV and sexual risk behavior may be critical for targeting points of intervention addressing IPV and sexual health among women. Moreover, a four factor structure of PTSD is consistent with recommendations for assessing posttraumatic stress in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013).

Therefore, the present study examines the direct relationship of psychological IPV to women's sexual risk behavior and explores the indirect relationship through the severity of four distinct PTSD symptom clusters. We examine these relationships controlling for sexual and physical IPV. We hypothesize that psychological IPV will predict sexual risk behavior. Based on the findings of previous research (Cavanaugh et al., 2010), we also predict that avoidance and numbing symptom severity will mediate the relationship between psychological IPV and sexual risk behavior.

Methods

Participants and Procedure

A community sample of women experiencing IPV ($N = 212$) were recruited to participate in the "Women's Relationship Study." Flyers were placed throughout the community in hair

and nail salons, health clinics, grocery stores, libraries, laundromats, community health clinics and other locations. Women who responded to the flyers were screened for study eligibility by phone. Women were eligible if they experienced physical victimization by a current male partner in the last six months (with no more than 2 weeks apart from the partner within the past month), were English speaking, were at least 18 years of age or older, and had a monthly income of less than \$4,200 (determined a priori to methodologically control for the differential resources associated with greater income). Of the 212 women who met inclusion criteria, approximately 9% of women reported living with HIV. Given meta-analytic evidence that people reduce high-risk sexual behavior after they become aware of HIV infection (Marks, Crepaz, Senterfitt, & Janssen, 2005), we decided to exclude the 19 women living with HIV from our analyses to examine the relation between trauma and high-risk sexual behavior among HIV-negative women. Eight participants had missing data on the sexual risk variable; thus, the final sample was comprised of 186 HIV-negative women.

Data were collected via one-on-one, face-to-face interviews conducted by trained female research associates. Women provided informed consent and completed a computer-assisted interview. Following the completion of the interviews, women were provided with a list of community resources and remunerated \$50. This study was approved by the host institution's Institutional Review Board.

Participants were between 18 and 58 years of age ($M = 35.89$, $SD = 10.51$). Approximately 94% of participants self-identified as Black or African American, 5% self-identified as Latina, and 1% self-identified as White. On average, women had the equivalent of a high school education ($M = 12.14$, $SD = 1.53$) with 72% of women having a 12th grade education level or lower; 36% of women reported being unemployed, 28% reported working part-time, 27% reported being unable to work, and 10% reported working full-time; women had a median yearly income of \$9,600 (\$0–\$48,000). Approximately 47% of women reported cohabitating with their partner, 31% reported dating their partner but not cohabitating, 15% were married, 5% indicated no longer being with their partner but still seeing them, and 3% were separated or divorced. On average women indicated being with their partner for approximately five years ($M = 5.11$, $SD = 6.22$).

Measures

Sexual risk behavior—Five items assessed sexual risk behavior in the past 6 months. Women reported whether they engaged in: 1) unprotected anal or vaginal sex with a partner who used IV drugs; (2) unprotected anal or vaginal sex with a primary partner who was HIV-seropositive or whose status was unknown; (3) unprotected anal or vaginal sex with a primary partner who had multiple (concurrent) sex partners; (4) unprotected anal or vaginal sex with a non-primary partner whose HIV status was unknown or (5) sex trade. Endorsement of any 1 of the 5 items was indicative of sexual risk behavior. A dichotomous variable was created that divided participants into two categories: 0 = no sexual risk behavior and 1 = sexual risk behavior.

Intimate partner violence—Psychological, physical, and sexual IPV victimization was assessed over the past 6 months. Psychological IPV was assessed using the Psychological Maltreatment of Women Inventory (PMWI; Tolman, 1989). The PMWI is a 58 item, self-report measure that assesses the frequency of psychological maltreatment from a romantic/sexual partner. Example items are: “My partner insulted me or shamed me in front of others”; “My partner put down my physical appearance.” Participants responded on a 5 point scale: 1 (*never*) to 5 (*very frequently*). A composite score was created by summing items, with higher scores indicating greater psychological victimization. Cronbach’s α in the current study is .95.

Physical IPV was assessed using the Conflict Tactics Scale-2 (CTS-2; Straus, Hamby, & Warren, 2003). The CTS-2 physical assault subscale uses 12- items to evaluate both moderate and severe physical violence participants experienced. An example item is, “My partner threw something at me that could hurt.” Frequency of physical IPV was captured by the following response options: *never, once, twice, 3–5 times, 6–10 times, 11–20 times, and more than 20 times in the past 6 months*. Responses were recoded according to procedures outlined by Straus et al. (2003) (i.e., 3–5 = 4; 6–10 = 8; 10–20 = 15; > 20 = 25). Item ratings were summed with higher scores indicating greater physical victimization. Cronbach’s α for the current study is .87.

Sexual IPV was assessed using the 10-item Sexual Experiences Survey (SES; Koss & Oros, 1982). An example item is, “Has your partner tried to make you have sex by using force, like slapping or pushing, or by threatening to use force?” The same response options from the CTS-2 physical IPV scale (i.e., *never, once, twice, 3–5 times, 6–10 times, 11–20 times, and more than 20 times in the past 6 months*) were used to evaluate sexual IPV. Cronbach’s α for the current study is .88. Given the positive skew in the number of women who reported sexual IPV, a dichotomous variable was created by coding participants who responded that sexual victimization occurred once or more on any of the 10 items as a ‘1’ (otherwise ‘0’).

Posttraumatic Stress—PTSD symptom severity was assessed using the Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1995). Symptom severity was assessed relative to participants’ IPV victimization during the last six months of her current intimate relationship for each symptom severity cluster. Five items measured re-experiencing symptoms (e.g., “I had bad dreams or nightmares about the abusive events with my partner.”), five items measured hyperarousal symptoms (e.g., “I had trouble falling or staying asleep), five items measured numbing symptoms (e.g., “I felt distant or cut off from people around me.”), and two items measured avoidance symptoms (e.g., “I tried not to think about, talk about, or have feelings about the abusive events with my partner.”). Item responses ranged from 0–3 (0 = *not at all, or only one time*, 1 = *once a week or less, or once in a while*, 2 = *2 to 4 times a week, or half the time*, and 3 = *5 or more times a week, or almost always*). Responses were summed to obtain a symptom severity score for each cluster. Reliability is $\alpha = .87$, $\alpha = .79$, $\alpha = .77$ for the re-experiencing, hyperarousal and numbing clusters, respectively. The inter-item correlation for the two-item avoidance cluster is $r = .44$. Cronbach’s α for the total scale is .91. In this sample, 65 women (36%) met full DSM-IV diagnostic screening criteria for PTSD.

Data analytic approach

A multiple mediation model with four mediators was estimated using the PROCESS procedure (Hayes, 2013). The PROCESS procedure conducts ordinary least squares regression analyses to test both the direct and indirect effects of the relationships hypothesized in our current model. We also tested the indirect effect of psychological IPV on sexual risk behavior through the four PTSD symptom severity clusters. Analyses controlled for physical and sexual IPV.

Results

All of the women in the sample reported physical and psychological IPV, and approximately 57% of women experienced sexual IPV in the past six months. Thirty-four women (18%) reported engaging in at least one sexual risk behavior in the past six months. Of these women, 24 (13%) reported unprotected vaginal or anal sex with a non-monogamous primary partner, 8 (4%) reported unprotected vaginal or anal sex with one or more non-primary partner(s) whose HIV status was positive or unknown, 8 (4%) reported trading sex for money, 3 (2%) reported unprotected vaginal or anal sex with a primary partner who was an injection drug user, and 1 (1%) woman reported engaging in unprotected vaginal or anal sex with a primary partner who was seropositive.

Table 1 presents the means, standard deviations, and correlations for study variables. Psychological IPV was positively correlated with physical and sexual IPV and was also positively correlated with all PTSD symptom severity clusters. Income, age and education were not associated with sexual risk behavior; therefore, they were not included in the model as covariates.

Direct Effects

Figure 1 displays the estimated model in which psychological IPV is the independent variable, the four PTSD symptom severity clusters are the mediators, and sexual risk behavior is the dependent variable, controlling for physical and sexual IPV. Psychological IPV was the only form of IPV that was related to sexual risk behavior. Women who reported greater psychological IPV were more likely to report engaging in sexual risk behavior after controlling for physical and sexual IPV.

Indirect Effects

We also examined whether psychological IPV had an effect on sexual risk behavior through certain PTSD symptom clusters more than others (Figure 1). Bootstrapping was used to test the significance of these indirect effects with 5,000 re-samples. Confidence intervals for each indirect effect are presented within parentheses. There was a significant indirect effect of psychological IPV on sexual risk behavior through avoidance symptom severity [indirect effect = .004 (.00, .01)]. There were no significant indirect effects of psychological IPV on sexual risk behavior through hyperarousal symptom severity [indirect effect = $-.003$ ($-.01$, .00)], numbing symptom severity [indirect effect = .002 ($-.00$, .01)], and re-experiencing symptom severity [indirect effect = $-.001$ ($-.01$, .00)].

Post-hoc analysis

In a post-hoc analysis, we considered whether there were differences in the relation between psychological IPV and sexual risk behavior when the psychological IPV scale was separated into the two subscales validated by Tolman (1999), which are dominance-isolation and emotional-verbal. We conducted the same analyses above, controlling for both physical and sexual IPV, and examined direct and indirect effects.

The dominance-isolation items of the PMWI describe isolating and controlling behaviors by one's intimate partner (e.g., my partner restricted my use of the telephone). Cronbach's α for this subscale is .92. The direct effect of the dominance-isolation component of psychological IPV was not significantly associated with sexual risk behavior ($b = .02, p = .08$). However, experiencing dominance-isolation from one's intimate partner was positively associated with each PTSD symptom severity cluster: hyperarousal ($b = .04, p = .02$), avoidance ($b = .03, p < .01$), numbing ($b = .06, p < .01$), and re-experiencing ($b = .04, p = .01$). In addition, there was a significant indirect effect of dominance-isolation psychological IPV on sexual risk behavior through avoidance symptom severity [indirect effect = .008 (.00, .02)].

The emotional-verbal items of the PMWI describe behaviors and verbal comments that demean the partner (e.g., my partner insulted me or shamed me in front of others). Cronbach's α for this subscale is .94. The direct effect of the emotional-verbal component of psychological IPV was not significantly associated with sexual risk behavior ($b = .03, p = .06$). Similar to the dominance-isolation subscale, experiences of emotional-verbal IPV were associated with each PTSD symptom severity cluster: hyperarousal ($b = .06, p < .01$), avoidance ($b = .03, p < .01$), numbing ($b = .06, p < .01$), and re-experiencing ($b = .05, p < .01$). Again, there was a significant indirect effect of emotional-verbal psychological IPV on sexual risk behavior through avoidance symptom severity [indirect effect = .008 (.00, .02)]. In summary, the indirect effects of psychological IPV on sexual risk are not explained by a unique association through one subscale vs. the other.

Discussion

The current study is one of the first to examine (a) the unique effects of psychological IPV on a broad range of sexual risk behaviors and (b) the four PTSD symptom clusters as distinct trauma experiences linking psychological IPV to sexual risk behavior. We found that psychological IPV was associated with greater sexual risk behavior in a sample of HIV-negative women currently experiencing IPV even after accounting for physical IPV and sexual IPV. We also found that, of the four PTSD symptom severity clusters examined, only the avoidance symptom severity cluster mediated the association between the severity of psychological IPV and sexual risk behavior. This indirect effect was consistent even when psychological IPV was examined by the dominance-isolation and emotional-verbal dimensions. These findings have several implications for research and practice.

Psychological IPV is commonly overlooked by researchers when examining the relationship between IPV and sexual risk behavior; however, our findings suggest that psychological IPV is related to greater odds of engaging in sexual risk behavior. These findings are consistent with past studies that show a link between psychological IPV and other correlates of HIV

risk such as substance use and STIs (Coker et al., 2000; Coker et al., 2002a). Importantly, our findings suggest that psychological IPV is uniquely associated with sexual risk behavior when compared to physical and sexual IPV, which extends findings in the literature showing associations between several types of IPV victimization and sexual risk behavior (Miner, Ferrer, Cianelli, Bernales, & Cabieses, 2011). Identifying psychological IPV as a unique correlate of sexual risk behavior underscores the need to examine the effect of psychological IPV on women's sexual health more broadly, including condom use, sexual dysfunction, and risk of HIV and other STIs. Conversely, we did not find evidence that sexual and physical IPV were associated with sexual risk behavior despite evidence of these relationships in other studies (see Coker, 2007 for review). It is possible that when psychological, physical, and sexual IPV are examined concurrently that psychological IPV is a stronger predictor of sexual risk relative to other forms of IPV.

The current study focused on the consequences of psychological IPV on sexual risk behavior and examined four distinct PTSD symptom clusters as factors linking psychological IPV to sexual risk. Of the four PTSD symptom clusters examined, only the avoidance symptom severity cluster was related to greater odds of engaging in sexual risk behavior. Further, one's experience of psychological IPV was related to greater sexual risk behavior through the avoidance symptom severity cluster. These findings call attention to the role that avoidance symptom severity may play on sexual risk-taking. The avoidance symptom severity cluster characterizes avoidance coping strategies women use to stop thinking about thoughts or emotions related to experiences of IPV. It is possible that women who actively avoid trauma-related thoughts with regard to IPV may be less likely to advocate for their sexual needs, thereby further complicating contexts in which women's sexual agency is already compromised. Future research is needed to examine processes that connect psychological IPV, avoidance symptom severity, and sexual risk behavior among women who experience IPV.

Implications for Practice

Expanding on existing literature that shows an association between PTSD and sexual risk behavior (Cavanaugh et al., 2010; Machtinger et al., 2012; Weiss et al., 2013), we examined how four PTSD symptom severity clusters were related to PTSD. Our findings highlight that psychological IPV, whether examined as dominance-isolation, emotional-verbal, or the total score, is related to greater avoidance of thoughts and emotions related to IPV, which in turn is related to greater sexual risk behavior. Though future research is needed to replicate these results, our findings provide a nuanced understanding of how PTSD influences sexual risk behavior and indicate that PTSD avoidance symptoms may play a critical role in sexual risk behavior, a finding that has been previously demonstrated among gay men (Martin, Pryce, & Leeper, 2005). Martin and colleagues suggest that avoidance may contribute to sexual risk behavior by enhancing disengagement from one's emotions and from others. In the context of IPV, where experiences of violence can occur frequently, there may be a sustained level of disengagement that adversely affects decision-making during sex above and beyond the experience of violence itself. Future research and clinical endeavors may benefit from understanding how mental health treatment, specifically regarding PTSD, can minimize the stress and trauma associated with IPV, and the potential for this treatment to reduce sexual

risk among women who experience IPV. It is important to note that victims' engagement in care is a highly complex issue. Above all, the focus must be on safety first and must utilize an empowerment approach so that women can make the choices they believe are most appropriate for their particular situation.

Limitations and Conclusion

Findings should be interpreted in the context of the following limitations. First, the present study was cross-sectional and precludes us from interpreting causality about the relationships proposed in the structural model. Second, we did not examine how the co-occurrence of different forms of IPV affect PTSD symptom severity and sexual risk behavior. Rather we considered the unique effects of each type of IPV on these variables. Approaching our analysis in this way limits our ability to address how the co-occurrence of different forms of IPV influence sexual risk behavior but sheds light on the unique effects of each type of IPV on sexual risk behavior. Third, our assessment of psychological IPV did not include experiences of stalking, which is known to be a common form of victimization from an intimate partner that has effects on mental and physical health for women and men (Davis, Coker, & Sanderson, 2002; Roberts, 2005). These experiences may also heighten PTSD symptoms, which in turn may affect the sexual health of women who experience violence. Finally, our PTSD measure focused on posttraumatic stress specific to IPV victimization with one's current partner. This approach limits our understanding of PTSD that may stem from other aspects of women's lives; however, we believe that assessing IPV-related PTSD strengthens the current study as it addresses how PTSD symptom severity relating to IPV is associated with sexual risk behavior and how psychological IPV victimization relates specifically to these PTSD symptoms among women.

This study demonstrates the detrimental effects of psychological IPV on women's sexual health, particularly susceptibility to HIV and other STIs through various sexual risk behaviors. Identifying PTSD avoidance symptom severity as a key component connecting psychological IPV to sexual risk is a viable avenue for sexual health interventions but more work is needed to identify other factor that link psychological IPV and sexual risk behavior. Exploring factors through which different forms of IPV, and their co-occurrence, shape women's sexual health is an important step in minimizing sexual risk behavior among women who experience IPV and improving women's overall health and well-being.

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Figure 1. Multiple mediation model of the relationship between psychological IPV and sexual risk behavior

Note. Regression coefficients are unstandardized. Standard errors are in parentheses.

* $p < .05$, ** $p < .01$

Table 1

Means, Standard Deviations, and Correlations of Study Variables (N = 186)

Variable	M, N (%)	SD	1	2	3	4	5	6	7	8	9	10
1. Sexual Risk Behavior	34 (18.3%)	-	-									
2. Psychological IPV Severity	126.65	34.49	.29**	-								
3. Physical IPV Severity	34.78	45.23	.19*	.50**	-							
4. Sexual IPV Severity	105 (56.5%)	-	.22**	.31**	.23**	-						
5. PTSD Arousal Severity	6.63	4.05	.09	.35**	.34**	.10	-					
6. PTSD Avoidance Severity	2.22	1.94	.29**	.41**	.37**	.25**	.46**	-				
7. PTSD Numbing Severity	5.19	3.80	.20**	.42**	.30**	.25**	.71**	.59**	-			
8. PTSD Re-experiencing Severity	4.70	3.72	.20**	.43**	.42**	.27**	.56**	.61**	.64**	-		
9. Income	13561.00	10572.32	-.08	-.06	-.21**	.03	-.12	-.10	.03	-.13	-	
10. Age	35.89	10.51	-.09	.20**	.04	.14	.04	.06	.09	.15*	-.07	-
11. Education	12.14	1.53	.00	-.00	.01	.13	.01	-.07	.02	.12	.30**	-.02

Note. IPV = Intimate Partner Violence.

*
 $p < .05$,**
 $p < .01$.

Means and SDs are reported for continuous variables; percent prevalence is reported for dichotomous variables.