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Gender, Psychopathy Factors and Intimate Partner Violence

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Abstract

The present study sheds light on relationships between distinct psychopathic traits and perpetration of IPV in women versus men. Men and women with recent drug and/or violence histories (N = 250) were assessed for psychopathic traits using the Psychopathy Checklist: Screening Version and for their and their partner's use of IPV with the Revised Conflict Tactics Scale. The first goal was to examine the moderating role of gender in psychopathy factor relationships to IPV. Although both the interpersonal-affective traits (Factor1) and the impulsive-antisocial traits (Factor 2) of psychopathy were related to higher frequency of IPV perpetration, the relationship between Factor 1 and IPV was stronger in men. Our second goal examined the moderating role of psychopathy traits in the relationship between partner's perpetration of IPV and participant perpetration (mutual violence) in the two genders. Relationships between partner- and self-IPV were similar at both low and high levels of Factor 1 in men, although the partner- and self-IPV relationship was significantly stronger among women at low relative to high levels of Factor 1. The relationship between partner- and self-IPV was stronger at high levels of Factor 2 in men, whereas Factor 2 did not moderate mutual violence in women. These results indicate that relationships between psychopathy factors and IPV differ by gender, with psychopathy generally exacerbating IPV perpetration in men and Factor 1 traits playing a unique role in mutual violence in women. These findings add to the literature on female psychopathy and have important implications for future research on gender and IPV.

Keywords

Psychopathy; Intimate Partner Violence; Factor 1; Factor 2; Gender

Intimate partner violence (IPV), defined as physical, sexual, or psychological harm to a partner or spouse, is a serious social problem, highlighted by the various detrimental effects it has on survivors (e.g., direct physical injury and long-term poor physical and mental health problems; Ellsberg, Jansen, Heise, Watts, & Garcia-Moreno, 2008), perpetrators (e.g., incarceration; Holtzworth-Munroe & Stuart, 1994; Walsh, Swogger, O'Connor, Chatav-Schonbrun, Shea, & Stuart, 2010), and society (e.g., costs of hospital visits, mental health, and incarceration; NCADV, 2012). Although the detrimental effects of IPV are observed across different types of harm that partners inflict on each other (e.g., psychological IPV; Finley, Baker, Pugh, & Peterson, 2010; Swan, Gambone, Caldwell, Sullivan, Snow, 2008), most of the research focuses on physical IPV, which produces widespread harm. Though

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men are most often perpetrators of more physically dangerous IPV (Swan et al., 2008), women also report engaging in IPV, in some cases at similar or higher rates (Archer, 2000; Testa, Hoffman, & Leonard, 2011). Despite the abundant literature on IPV (e.g., Golding, 1999; Wu, Huff, & Bhandari, 2010), female perpetration of IPV is a more exploratory area in research. Studying female perpetration of IPV will help to gain further insight on relationship violence more generally. Findings could lead to gender-tailored intervention programs and improvements in health outcomes for both partners. Our goal was to help identify gender-specific individual differences and situational factors that may affect IPV perpetration in a clinical-forensic sample.

In terms of key individual differences influencing IPV, psychopathy has been acknowledged in the literature as a powerful predictor of violence (Leistico, Salekin, DeCoster, & Rogers, 2008). This makes sense given that psychopathy is defined by traits that exacerbate violence and antisocial risk, including lack of remorse, manipulativeness, shallow emotion, callousness, and persistent violation of social norms (Cleckley 1976; Hare, 2003). However, meta-analytic results suggest that psychopathy may be a poorer predictor of future violence among women relative to men (Edens, Campbell, & Weir, 2007; see also Salekin et al., 1997, 1998). Hence, it might also be important to examine situational factors in relation to psychopathy and women's violence. For example, research suggests that women's IPV is often a response to their partner's IPV (e.g., self-defense; Ross, 2011), suggesting that being in a relationship with a violent partner may be a more important context for IPV perpetration in women than men. Moreover, the level of mutual violence (both partners perpetrating against each other) in the relationship may vary as a function of psychopathy. The goal of this study was to examine the interaction between gender, psychopathy, and IPV perpetrated by the partner to explain IPV perpetration in men and women.

Intimate Partner Violence and Gender

Research on IPV has traditionally focused on men as perpetrators, especially because historically women are less likely to be arrested for IPV compared to men (Swan et al., 2008). However, research mostly using the physical aggression subscales of the Conflict Tactics Scale (CTS; Straus, 1979) shows that women self report perpetrating IPV just as often as and sometimes more than men (Archer, 2000; Testa et al., 2011). There are various explanations posited for the higher rates of female IPV perpetration in studies using the CTS, and the topic itself has yielded much controversy (Straus & Gelles, 1990). Thus, more research is needed to investigate factors that influence female IPV perpetration or that may differentially relate to IPV in the two genders.

Another reason to focus on gender differences is the fact that the damage to women from IPV perpetrated by a man is much more severe (Archer, 2000; Testa et al., 2011), regardless of who initiates the violence. Multiple studies have examined this issue using the psychological aggression, physical aggression, and injury subscales of the CTS, and modified items from these subscales. These studies have shown that even when women are perpetrating the same amount or more IPV, women report experiencing more fear, injury, depression, eating problems, and suicidal ideation resulting from being victims of partner's IPV, whereas men report being less negatively impacted by their partner's violence toward

them (Ansara & Hindin, 2010; Ansara & Hindin, 2011; Romito, Beltramini, & Escribà-Agüir, 2013).

Finally, the importance of the partner's perpetration should be taken into account when considering gender differences in IPV perpetration. For example, women report self-defense (to protect oneself from partner) as their main reason for IPV, whereas theorists have suggested that men's IPV is typically perpetrated in the broader context of coercive control (Ross, 2011). Although these perceptions have not been fully verified empirically, this research suggests that female and male perpetrators of IPV may be impacted differentially by their partner's use of violence. Moreover, studies assessing IPV with the verbal and physical aggression subscales from the CTS showed that intimate relationships plagued by mutual violence are characterized by an increased risk for frequency, endurance, and escalation of IPV (Feld & Straus, 1989; Leonard & Senchak, 1996; Rauer & El Sheikh, 2012), as well as increased risk of experiencing injury, with that risk twice as likely for women than men (Capaldi et al., 2007).

Together, these studies suggest that it is important to consider the partner's perpetration of violence to fully understand female perpetration of IPV. Nonetheless, research has not examined individual differences, including psychopathic traits that may moderate mutual violence in relationships. For example, mutual violence may be more likely to occur among those low versus high on psychopathy, because persons high on psychopathy, including women, may be less likely to perpetrate IPV in a reactive way (e.g., do not require instigation by partner to escalate violence).

Psychopathy Factors, Intimate Partner Violence, and Gender

In previous research, total psychopathy scores have been reported as useful predictors of IPV (Holtzworth-Munroe & Stuart, 1994; Marshall & Holtzworth-Munroe, 2010). Nonetheless, theory and psychometric work suggests that psychopathy can be conceptualized as multidimensional (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Hare, 2003). Although various factor structures, involving from two to four factors, have been advocated (Cooke & Michie, 2001; Hare & Neumann, 2008), at least two broad factors are emphasized in the majority of the research. The interpersonal-affective factor, often termed Factor 1, involves manipulation, callousness, lack of remorse, and lack of empathy. The impulsive-antisocial factor, or Factor 2, reflects traits that are comparable to symptoms associated with Antisocial Personality Disorder (American Psychiatric Association, 2013), such as risk taking, irresponsibility, aggressiveness, and reckless disregard for the safety of others (Hare, 2003). These two factors often have unique, and sometimes opposing correlates, especially when adjusting for their overlap (e.g., Harpur, Hakstian, & Hare, 1988; Hicks & Patrick, 2006; Verona, Patrick & Joiner, 2001).

Despite previous research on the unique variance associated with the two factors, very few studies have examined the psychopathy factors separately in understanding IPV perpetration. In the general violence literature, Walsh and Kosson (2008) found that, although Factor 2 was an overall predictor of violent recidivism, it was a stronger predictor of violence at high versus low levels of Factor 1 (Walsh & Kosson, 2008). This work

indicates that it is important to consider both factors when attempting to understand violence. Alternatively, findings by Kennealy, Skeem, Walters & Camp (2010) indicated that Factor 2 but not Factor 1 (nor their interaction) explains a significant proportion of variance in violent recidivism.

Though in recent years there has been a large growth of research on female psychopathy (Hicks, Vaidyanathan, & Patrick, 2010; Sutton, Vitale & Newman, 2002; Vitale, Smith, Brinkley, & Newman, 2002), critical questions remain about the distinct correlates and manifestations of psychopathy in women relative to men (cf. Verona & Vitale, 2006). For example, there have been concerns about psychopathy's ability to predict future violence among women (e.g., Edens et al., 2007). Moreover, no research has investigated gender differences in psychopathy links to IPV. The few research studies that have examined psychopathy factors in regard to IPV in women had the main goal of identifying IPV perpetrator typologies. For example, Walsh et al. (2010) found similar typologies of partner violence perpetration among male and female psychiatric patients, with a violent/antisocial cluster showing the highest scores on all of the psychopathy facets. However, this research relied on identifying “types” and did not examine dimensional relationships between IPV and distinct psychopathy factors.

Research using the Revised Conflict Tactics Scale (CTS2; Straus et al., 1996) in women to examine relationships between broader antisociality and IPV has been limited but fruitful. Shorey, Brasfield, Febres, and Stuart (2011) reported a positive correlation between anger and impulsivity, traits relevant to Factor 2 psychopathy, and perpetration of psychological and physical IPV among a sample of women arrested for domestic violence. Another study testing multivariate models of couple's partner aggression in a representative community sample found that many of the same risk factors (e.g., dominance/jealousy, marital adjustment) were relevant for psychological and physical IPV perpetration in both male and female participants (O'Leary, Smith Slep, & O'Leary, 2007). However, childhood aggression in women and anger expression in men represented unique and gender-specific predictors of partner aggression. Overall, these data suggest that traits related to antisociality and anger/aggression are risk factors for IPV in both genders. Interestingly, Schumm and colleagues (2011) reported that, when accounting for other predictors like alcohol use and relationship adjustment, women's use of IPV was influenced by their male partner's antisocial traits and use of IPV; however, women's physical IPV did not influence their male partner's physical IPV. These results are consistent with the idea that women are more likely to engage in IPV within a mutually-violent relationship, whereas male IPV may be more influenced by their own traits.

Besides expanding the literature by comparing the strength of relationships between distinct psychopathy factors and IPV in women and men, it is important to identify the specificity of relationships between psychopathy factors and IPV. That is, the relationship between psychopathy and IPV may be due to overlap with other key risk factors in clinical-forensic samples. IPV has been linked to other personality disorders, including borderline personality disorder (e.g., Weinstein, Gleason, & Oltmanns, 2012; Whisman & Schonbrun, 2009). For example, Weinstein et al. (2012) found a relationship between borderline symptoms and the psychological and physical subscales of the CTS, a relationship that was stronger in women

than men. IPV has also been linked to substance use, such that the associations of acute alcohol and drug use with violence are present for men and women in SUD treatment (e.g., Kraanen, Vedel, Scholing, & Emmelkamp., 2014; Schumm et al., 2011). Schumm et al. (2011) found that heavy drinking in women increased risk for IPV, while multiple studies (e.g., Kraanen et al, 2014) have demonstrated links between male drinking and partner violence severity (e.g., resulting in injury). Finally, both borderline personality disorder and substance use are linked to psychopathy (e.g., Fanti, 2013; Howard McCarthy, Huband, & Duggan, 2013; Miller et al., 2010; Palmer et al., 2013; Salekin, Rogers, & Sewell, 1997; Sprague, Javdani, Sadeh, Newman, & Verona, 2012). Typically, Factor 2 but not Factor 1 traits show consistent relationships to substance use (Smith & Newman, 1990), although recently, Palmer et al. (2013) found that youths high on callous-unemotional traits (similar to Factor 1 traits in adults) are at an increased risk for substance abuse. Miller et al. (2010) found that Factor 2 psychopathy traits were linked to borderline personality disorder, although this relationship has been shown to be stronger, and possibly modulated by Factor 1, in women in at least one paper involving two studies (Sprague et al., 2012). Thus, an especially conservative test of the influence of psychopathic traits on IPV would adjust for the influence of borderline personality and substance use symptoms.

Overview of Current Study

In sum, the extant research is relatively silent regarding links between psychopathy and IPV in women, or gender differences in these relationships. The present study sought to address gaps in the literature. Our first question was does gender moderate the relationship between Factor 1 or Factor 2 psychopathy traits and IPV? In other words, we examined psychopathy factors as independent predictors of IPV in the two genders. We had two alternate hypotheses for this research question, based on the existing literature. One prediction was that psychopathic traits, at least impulsive-antisocial traits reflected in Factor 2, would relate similarly to IPV in both men and women (e.g., Walsh et al., 2010). The second alternate prediction was that relationships between psychopathy factors and IPV would be attenuated in women relative to men if relationships between female psychopathy and IPV parallel recent work on psychopathy prediction of violent recidivism in women (Edens et al. 2007).

Our second question involved psychopathy as a moderator of mutual violence. Do the psychopathy factors moderate the relationship between the partner's IPV perpetration and participant's own engagement in IPV? We considered this important, given the literature on women's reported motives for their own IPV (e.g., self-defense; Ross, 2011). Our main predictions involved the moderating roles of Factor 1 and Factor 2. Recent findings have shown that only Factor 2, and not Factor 1, predicts violence when both variables are in the same model (Camp, Skeem, Barchard, Lilienfeld, & Poythress, 2013). However, theory and data suggest that Factor 1 is more strongly associated with instrumental aggression, while Factor 2 is associated with reactive aggression or violence in general (Patrick & Zempolich, 1998; Woodworth & Porter, 2002). Thus, it was expected that partner violence would exacerbate IPV in participants high (versus low) on Factor 2. If it is the case that Factor 1 is associated with more instrumental violence, we may expect individuals high (versus low) on Factor 1 to not be as affected by partner's own violence. We did not generate predictions regarding gender differences in these relationships, considering the scant prior research on

this topic. Finally, we explored whether psychopathy factors accounted for variance in IPV perpetration even when adjusting for the influences of borderline personality and substance use symptoms.

Method

Participants

The data for this study represent a subset of the baseline data from an ongoing longitudinal project on gender, violence, and substance use outcomes. Two hundred and fifty participants (*n* = 108 female, 43%) screened for recent histories of substance use and/or violence were recruited from substance use treatment agencies or community advertisements/flyers in a Midwestern community (*M* = 34.93; *SD* = 11.77; *range of age* = 44). Fifty-five percent of the sample had a history of incarceration, and 60% were or had been on parole or probation. Slightly over half of the sample (51%) had been in substance use treatment at least once in their life. Most participants identified as African-American (*n* = 122; 49%) or Caucasian (*n* = 89; 36%), followed by Mixed Ethnicity (*n* = 18; 7%), Asian (*n* = 6; 2%), Hispanic (*n* = 6; 2%), and Native American (*n* = 3; 1%). Approximately half the sample had at least some college education, 25% high school diploma or GED, and 21% dropped out in or before high school. A little over half of the sample (56%) was currently unemployed. About 32% of participants were currently living with a romantic partner, with 9% of them married and 23% cohabitating. Half of the participants (51%) had never been married, and 17% were divorced. Women and men did not differ on demographic variables or relationship status.

Participants provided informed consent and received monetary compensation for their participation: $35-40 at the end of the baseline interview session. Participants first completed the interview portion, which included substance use disorder modules of the Structured Clinical Interview for DSM-IV (SCID-I/NP; First, Spitzer, Gibbon, Williams, 2002), the Psychopathy Checklist: Screening Version (PCL: SV; Hart et. al, 1995) and the Borderline Personality Disorder (BPD) module of the Personality Disorder Interview (PDI-IV; Widiger et al., 1995). Then, participants completed a measure of IPV, along with other self-report scales not relevant to the current paper.

Measures

PCL: SV—A life history interview and examination of available public records were used to assess the traits on the PCL: SV (Hart et. al, 1995). The 12-item PCL: SV was chosen for this study, as it was developed for non-incarcerated samples and requires less collateral information than the 20-item PCL-R (Hare, 2003). Interviews were conducted by graduate students and advanced undergraduates under the supervision of a PhD-level licensed Clinical Psychologist. For each item, participants were rated 0 (absent), 1 (possibly present or present to a minor degree), or 2 (definitely present). As per the manual, scores were summed to create two factors. Factor 1 consisted of the interpersonal-affective features, such as callousness, lack of remorse, and lack of empathy, whereas Factor 2 involved the impulsive and antisocial lifestyle characteristics (Cleckley, 1976; Hare, 2003; Pastwa-Wojciechowska, Kaźmierczak, & Błażek, 2012). Two raters (the main interviewer and a trained secondary rater) were present for 62% of the PCL: SV interviews. The inter-class

correlation across raters was excellent for both Factor 1 (*ICC* = .94) and Factor 2 (*ICC* = . 97). However, for our analyses, we only used the data from our primary raters (i.e., interviewer).

CTS2—IPV within the last year was assessed using the 78-item CTS2 (Straus et al., 1996). The CTS2 asks participants to respond according to behaviors enacted in their current or most recent relationship that occurred within the last year. Items are rated as to the frequency of the violent behavior ranging from *0* (*never*) to *6* (*more than 20 times in the past year*). Participants responded to each item twice: once for themselves (hereafter self-IPV) and once for their partner (hereafter partner-IP V). Supporting the validity of our measure of partner IPV, previous research has found moderate to high agreement between individual's reports of their partner's violence and partner's reports of their own violence (Browning & Dutton, 2003; Moffitt, Fikowski, Mauricio, & Mackenzi,., 2013; Simpson & Christensen, 2005). Although the CTS2 assesses other forms of IPV (i.e., psychological and sexual), we focused on physical IPV in this report, as our hypotheses related to physical violence specifically. Further, physical IPV is arguably more costly than psychological IPV, as a result of healthcare costs, hospital visits, and incarceration of perpetrator. Moreover, sexual IPV was reported infrequently in our sample (∼8% for both genders). Items on the physical subscale included: “I kicked, bit, or punched my partner; my partner kicked, bit, or punched me” (self IPV: α = .85; partner IPV: α = .91). Following recommendations in Straus et al. (1996), scores were calculated as the sum of the midpoint of the frequencies of the response options (e.g., 3-5 times in the last year = 4). Participants who noted that they had experienced or perpetrated IPV in the past but not in the last year were coded as 0; hence, the scores only reflected IPV in the last year.

Other risk factors for IPV—To examine whether psychopathy relationships to IPV could be accounted for by related individual difference variables, other risk factors were also assessed. First, participants were administered the Borderline module of the PDI-IV. Each symptom from the DSM-IV-R BPD diagnosis was assessed, according to structured interviewing guidelines for the PDI. We calculated a BPD symptom count variable by summing the number of symptoms rated as threshold (α = .67). Second, we used interviewer ratings of criteria from the substance use module of the SCID-I to create a substance use disorder (SUD) composite variable that reflected the number of lifetime alcohol and other drug use disorder symptoms (i.e., abuse and/or dependence; Verona & Sachs-Ericsson, 2005). Drug use symptoms were assessed for the drug that participants felt was most problematic in their lives or their drug of choice. The most common problematic drugs were marijuana (42.9%), cocaine (38.3%), and opioids (9.2%). The alpha for the summed SUD symptoms was .87. BPD and SUD symptom counts were used in analyses to create a more conservative test of psychopathy relationships to IPV.

Results

Table 1 displays the descriptive statistics for and correlations between the primary study variables. It also shows effect sizes for gender differences in mean scores on study variables, with women showing higher levels of BPD symptoms, self-IPV, and partner-IPV perpetration. Men scored higher on the two psychopathy factors.

In terms of analytic strategy, because physical IPV was highly skewed and there were a large number of participants reporting no IPV (n =130) in the last year, we used a zero-inflated Poisson model. This type of model has two components: one that predicts excessive zeroes (in this case, no IPV) and one that predicts the count variable (in this case, IPV > 0; Atkins & Gallop, 2007). We report odds-ratio (*OR*) as the effect size for the zero-inflation model and incidence rate ratio (*IRR*) as the effect size for the Poisson model. Both effect sizes can be interpreted in the same way, with 1 indicating no effect; numbers larger than 1 (e.g., 1.10) indicate that for every unit increase in the independent variable (holding other variables in the model constant), there is an increase in odds/incident rate (e.g., 10%), and numbers lower than 1 (e.g., .90) indicating that for every unit increase in the independent variable (holding other variables in the model constant), there is a decrease in odds/incident rate (e.g., 10%).

None of the demographic variables (age, income, ethnicity, employment status, and relationship status) were significantly related to self-IPV (all p's > .19); thus, none were included as covariates in main analyses. Interestingly, partner-IPV was significantly related to age, employment status, and relationship status. However, given that these relationships were with an independent variable, not a dependent variable, we did not include them as covariates (cf. Tabachnick & Fidell, 2007).

Gender and Psychopathy Relations to Self-IPV

Our first research question was whether gender would moderate the relationship between psychopathy traits and IPV. To test this, gender (coded as 0 = Female, 1 = Male), Factor 1 of the PCL: SV (mean-centered), Factor 2 of the PCL: SV (mean-centered), and their interactions were used to predict participants' own perpetration of physical IPV (self-IPV). We also included BPD and SUD symptoms (also mean-centered) as covariates. Table 2 shows the parameter estimates for the full model.

In the zero-inflated model, BPD symptoms were the only significant predictor of excessive zeroes (b = -.29, χ^2 = 9.69, p = .001, *OR* = .75), with every unit increase in BPD symptoms being related to a 25% increase in the likelihood of a non-zero response (i.e., more likely to have at least some IPV). Similar to other research (e.g., Archer, 2000; Testa et al., 2011), women were marginally more likely to report non-zeroes (to report IPV) than men (b = .64, χ^2 = 3.57, p = .058, *OR* = 1.90). In the count model, there were a number of main effects (see Table 2 for parameter estimates), including of BPD and SUD symptoms, gender, Factor 1, and Factor 2. Both psychopathy factors were independently associated with higher levels of IPV; however, these effects were moderated. First, we uncovered a Factor 1 × Factor 2 interaction (b = -.04, χ^2 = 77.57, p < .001, *IRR* = .96). Second, gender significantly interacted with Factor 1 (b = .13, χ^2 = 31.93, p < .001, *IRR* = 1.14) but not Factor 2 (b = -.01, χ^2 = .08, p = .776, *IRR* = 1.05). The three-way interaction was not significant (p = .258).

To follow up on the Factor 1 × Factor 2 interaction, we examined moderation with continuous variables using the recommendations of Aiken and West (1991). This analysis used the parameters based on all continuous data to estimate scores for participants high (75^{th} percentile) and low (25^{th} percentile) in the moderator. These levels were used to calculate simple slopes tests that examined the effect of the predictor at the level of the

moderator. Although there was a significant positive relation between Factor 2 and IPV at low Factor 1 (b = .10, χ^2 = 54.41, p < .001, IRR = 1.10), the relation was negative at high Factor 1 (*b* = -.06, χ^2 = 10.83, *p* < .001, *IRR* = .94). Surprisingly, the psychopathy factors seemed to have their most pernicious relation with IPV when the individual was also low in the other factor, instead of when individuals were high on both factors.

More central to our goals, we decomposed the Factor 1 × Gender interaction by examining the relation between Factor 1 and IPV within each gender. As shown in the estimated regression lines in Figure 1, the nature of the interaction was that the relationship between Factor 1 and IPV was stronger for men (*b* = .11, χ^2 = 26.56, *p* < .001, *IRR* = 1.15) than women (*b* = .05, χ^2 = 17.69, *p* < .001, *IRR* = 1.05), although in the same direction for both genders. These results are consistent with other work showing a weaker relation between psychopathy traits and violence for women compared to men (Edens et al., 2007).

Gender, Partner-IPV and Psychopathy Relations to Self-IPV

Our second question was do psychopathy and gender moderate the relationship between the partner's use of IPV and participant's engagement in IPV? The model used to test this was similar to that above, with the BPD and SUD symptom covariates, psychopathy factors, self-reported partner physical IPV (partner-IPV) and relevant interactions included as predictors. Table 3 shows the parameter estimates for the full model.

Along with BPD symptoms, partner-IPV predicted excessive zeroes (*b* = -.13, χ^2 = 5.99, *p* < .014, *OR* = .87), with partner IPV related to a higher likelihood of reporting at least some physical IPV (non-zeroes). In the count model, there were several significant effects. As may be expected, partner-IPV was positively related to self-IPV (*b* = .01, χ^2 = 499.06, *p* < .001, *IRR* = 1.01). This effect was moderated by gender (*b* = .01, χ^2 = 627.46, *p* < .001, *IRR* = 1.01). Unlike research indicating a stronger relationship between partner's use of IPV and women's IPV perpetration, the relationship between partner- and self-IPV was stronger for men (*b* = .02, χ^2 = 151.04, *p* < .001, *IRR* = 1.02; *r* = .69) compared to women (*b* = .01, χ^2 = 655.65, *p* < .001, *IRR* = 1.01; *r* = .38). Factor 1 (*b* = -.003, χ^2 = 240.99, *p* < .001, *IRR* = .996), but not Factor 2 (*b* = -.0001, χ^2 = .13, *p* = .716, *IRR* = 1.00), significantly interacted with partner-IPV. However, these two-way interactions were modified by three-way interactions: Factor 1 × Partner-IPV × Gender (*b* = .003, χ^2 = 8.62, *p* = .003, *IRR* = 1.003) and Factor 2 × Partner-IPV × Gender interactions (*b* = .002, χ^2 = 10.23, *p* = .001, *IRR* = 1.002).

To decompose the three way interactions, we examined the two-way Psychopathy Factor × Partner-IPV interaction for each gender. Significant two way interactions at this stage were followed up with simple slopes test examining the relationship between partner-IPV and self-IPV at high and low levels of psychopathy factor. For the first interaction, the Factor 1 × Partner-IPV interaction was significant for women (*b* = -.003, χ^2 = 232.43, *p* < .001, *IRR* = .996), but only marginally significant for men (*b* = -.002, χ^2 = 3.83, *p* = .050, *IRR* = .998). To further understand this interaction, we examined whether Factor 1 moderated the effect of partner-IPV within each gender (see Figure 2). For men, the relationship between partner-IPV and self-IPV was significant at both high (*b* = .021, χ^2 = 94.40, *p* < .001, *IRR* = 1.021) and low (*b* = .029, χ^2 = 78.31, *p* < .001, *IRR* = 1.029) levels of Factor 1, although slightly

stronger at low Factor 1. For women, the relationship between partner and self IPV was stronger at low levels of Factor 1 (b = .018, χ^2 = 669.38, p < .001, *IRR* = 1.018), relative to high levels of Factor 1 (b = .004, χ^2 = 44.45, p < .001, *IRR* = 1.004). Thus, mutually-violent IPV was more likely when interpersonal-affective traits were low, but this effect was especially the case for women.

When following up the Factor 2 × Partner-IPV × Gender interaction, we found that the Factor 2 × Partner-IPV interaction was significant for men (b = .002, χ^2 = 6.60, p < .010, *IRR* = 1.001) but not women (b = -.003, χ^2 = 1.49, p = .222, *IRR* = .999). The nature of the two way interaction for men (see Figure 3) was that the relationship between partner-IPV and self-IPV was significantly stronger at high (b = .030, χ^2 = 166.43, p < .001, *IRR* = 1.03) relative to low levels of Factor 2 (b = .022, χ^2 = 68.32, p < .001, *IRR* = 1.02). For women, the relationship was similar in strength at both low (b =.012) and high (b = .013) levels of Factor 2. Hence, whereas impulsive-antisocial traits exacerbate mutual violence in men's relationships, they have little effect on mutual violence in women's relationships.

Discussion

To our knowledge, the current study is the first to directly address the intersection of gender, psychopathy traits, and IPV. We had two main research questions: (1) would gender moderate the relationship between psychopathy factors and participant IPV, and (2) would the two psychopathy factors moderate the relationship between partner IPV and participant IPV in the two genders? Besides showing that both psychopathy factors were related positively to IPV perpetration when accounting for excessive zeroes (i.e., in the Poisson regression), we found a significant interaction between gender and Factor 1 in explaining self-IPV. Although higher scores on Factor 1 were related to more IPV in both genders, the relationship between Factor 1 and IPV was stronger in men. For our second question, we found that not only did partner-IPV influence self-IPV, but both psychopathy factors and gender moderated these effects. First, relationships between partner- and self-IPV in men were significant at both low and high levels of Factor 1. In women, the partner- and self-IPV relationship was stronger at low levels of Factor 1. Second, high levels of Factor 2 exacerbated the relationship between partner- and self-IPV in men, whereas Factor 2 did not moderate mutual violence in women.

Two other findings should be highlighted in regard to gender and IPV more generally. First, similar to previous research using the CTS (Archer, 2000; Testa et al., 2011), women reported more physical IPV perpetration, as well as more perpetration by their partners. Second, men showed a stronger relationship between self- and partner-IPV than did women. This latter result suggests that men may also interpret their relationships as involving mutual violence, although we did not explore differences in the specific attributions about mutual violence in the relationships of the men and women in our study. Another caveat is that the moderating role of gender in the relationship between self- and partner-IPV was further moderated by psychopathy factors. It was beyond the scope of this paper to elaborate further on these issues, but future research should pursue work on how men and women understand violence in their relationships. Nonetheless, the findings from our study contribute to and

expand on the extant research on both female IPV and psychopathy and may have important implications for future research and assessment on IPV in women and men.

Psychopathy Factors and Self-IPV

Our first research question had two alternative predictions, one suggesting similar relationships between psychopathy factors and IPV in men and women and the second suggesting more attenuated relationships in women. Our results were partially in line with both predictions. First, the relationship between Factor 1 and IPV perpetration in the Poisson regression was attenuated in women compared to men. These results are consistent with a meta-analysis of youth by Edens et al. (2007), which found that total psychopathy scores were a weaker prospective predictor of recidivism in girls and participants of color. We found this to be the case in terms of Factor 1 and IPV in our cross-sectional design, although previous research indicates that concurrently-measured aggression has similar relationships to psychopathic traits in both genders (e.g., Marsee, Silverthorn, & Frick, 2005; Kimonis, Frick, Fazekas, & Loney, 2006). However, at least one study showed poor concurrent relationships between the PCL and institutional violence among women (Salekin et al., 1997). Regardless, much of the prior literature has failed to examine gender differences in factor score relationships with violence, and none have analyzed relationships with IPV. Our data tentatively suggest stronger links between the interpersonal-affective traits of psychopathy and partner violence in men than women. One interpretation is that men with such traits may be especially likely to engage in coercive violent control of their partners, in essence an exacerbation of male batterer patterns (Holtzworth-Munroe, Meehan, Heron, Rehman, & Stuart, 2000; Holtzworth-Munroe & Stuart, 1994;)—although this pattern may not be present for men when there is mutual violence in the relationship (as discussed further below). Unlike this gender-specific effect for Factor 1, gender did not moderate relationships between Factor 2 and IPV, which is in line with research already cited that antisocial and aggressive traits relate similarly to IPV in both genders.

Beyond these gender effects, it is interesting that we found a unique relationship between both PCL factors and IPV, in light of recent findings that only Factor 2, and not Factor 1, predicts violence when both variables are in the same model (Camp et al., 2013). However, the latter involved a prospective study of recidivism, whereas we examined retrospective reports of IPV in the last year among community-dwelling offenders and used Poisson models accounting for skewness in the data. Surprisingly, we found a Factor 1 × Factor 2 interaction which contradicts other published research on violent recidivism indicating that being high on both factors increases recidivism risk (Walsh & Kosson, 2008). Instead, we found that the combination of high on one trait and low on the other is related to more IPV than being high on both traits. The relationship between Factor 2 and IPV at low Factor 1 makes sense, because Factor 2 is generally related to violence (Camp et al., 2013; Kennealy et al., 2010). However, it is unclear why this relationship is removed for individuals who are high in Factor 1. Given that these results are novel and were not predicted a priori, replications are needed to know the robustness of the pattern of relationships.

Psychopathy Factors as Moderators of Mutual Violence in Relationships

Our next goal was to examine whether psychopathy moderated the presence of mutual violence among the relationships of our male and female participants. Psychopathy factors moderated the relationship between partner- and self-IPV, and differentially in the two genders. First, consistent with our hypothesis, partner IPV perpetration had a stronger association with self-IPV at high relative to low levels of Factor 2; however, this was the case only for men but not women. This is interesting, because although Factor 2 was related to IPV perpetration similarly in both genders (see above), things are different when considering the partner's IPV perpetration. Men high versus low on Factor 2 report higher levels of mutual violence, whereas women high versus low on Factor 2 do not differ in their reports of mutual violence. A couple of interpretations are posited. It may be that men high on Factor 2 (who tend to externalize blame more than men low on Factor 2; Harpur et al., 1988) are more likely to justify their IPV by endorsing that their partner also engages in IPV, as there are stronger proscriptions on male violence against female partners than vice versa. However, in a study where both partners reported on their own IPV perpetration, Schumm et al. (2011) found similar results to our study, in that men's but not women's antisocial traits and use of IPV influenced their partner's IPV. A slightly different interpretation is that mutual violence among partners is more likely when the man is high on Factor 2. This may mean that impulsive-aggressive men are more likely to promote physical conflict with their partners, whereas women high on these traits do not seem to provoke their (primarily male) partners to mutual aggression.

Second, we found a significant Factor 1 × Partner-IPV × Gender interaction. For men, partner-IPV was found to be related to self-IPV at high and low levels of Factor 1. That is, Factor 1 traits had less of an influence on the extent to which male participants were involved in mutually-violent relationships, perhaps because violence is a more gender-consistent response to conflict in men. Given that Factor 1 traits were related to more IPV generally in men (as indicated above), the fact that the partner is also violent contributes little to an already-high level of IPV perpetration.

The Factor 1 interaction for women in regard to mutual violence is most intriguing and unexpected. For women, self-IPV was more strongly related to partner-IPV when Factor 1 was low compared to high. Results for women low on Factor 1 are as one would expect, in that women low on Factor 1 who exhibit normal emotionality and concern may engage in physical IPV when their partner is abusive, either in self defense or due to provocation. This is consistent with previous research that has found that women report their IPV to be as a result of their partner's IPV (Feld & Straus, 1989; Leonard & Senchak, 1996; Rauer & El Sheikh, 2012; Ross, 2011). Among women high on Factor 1, however, their partner's violence may be less influential than their own callous and unempathic traits in determining their domestic violence perpetration. For one, their partner's violence may produce less distress and trauma in women high on Factor 1 traits, given research suggesting that Factor 1 traits may be protective of stress, internalizing, and post-traumatic reactions (Blonigen et al., 2012; Vitale et al., 2005). Secondly, women high on Factor 1 may use IPV in their relationships as a form of control and manipulation and not necessarily in response to provocation or arguments. Thus, a more instrumental form of IPV would be expected from

women high on Factor 1, although relationships between instrumental aggression and psychopathy have not been fully explored in women (e.g., Woodworth & Porter, 2002). But why was this effect stronger in women than men? One interpretation is that interpersonal-affective traits represent greater deviance and prototypicality of psychopathic tendencies for women than men (Cruise et al., 2003; Salekin, Trobst, & Krioukova, 2001), as these traits are more likely to be discouraged through socialization in girls (e.g., girls show greater average empathy than boys). Thus, the presence of these traits signals protection from socialization processes in women more than men, which may, in turn, reduce tendencies toward emotionally-reactive violence and toward more instrumental violence in women than men. In the least, our findings encourage further research on this topic.

Finally, it is important to note that these results were not explained by two important covariates, which have been related to IPV in previous research: BPD or substance use symptoms (Schumm et al., 2011; Weinstein et al., 2012). The fact that psychopathy relations with IPV were still present when adjusting for BPD provides some specificity, given the conceptual overlap between BPD and psychopathy especially in women (e.g., Sprague et al., 2012). Overall, our results are relatively a strong test of psychopathy relations with mutual violence in relationships.

Strengths, Limitations, and Future Directions

This study had both strengths and limitations. The sample used was one with a wide range of violence histories, quite diverse, and important to study given their history of arrests and incarcerations. We also conducted thorough assessments involving interviews, clinician ratings, and self-reports that limits the extent to which our results are due to shared method variance. Finally, our study provides much-needed information on the real-life consequences of psychopathy, particularly one that is pervasive and destructive to families.

Limitations of the study stem from other aspects of the measures. First, we relied upon participant's reports of their partner's IPV. Though previous research has found moderate agreement, participants may over-report their partners' violence (Simpson & Christensen, 2005), suggesting that future research should seek to obtain reports directly from partners. Second, the CTS-2 has been criticized for not accounting for context and assessing a limited amount of violent acts. Indeed, it is important to consider a gendered context and coercive control in relationships when examining domestic violence, particularly when it involves male batterers with female partners. Future work would benefit from replicating these results using interview-based measures of IPV and coercive control. Third, we did not assess the gender of the partners involved, as these relationships may be different for same-sex versus opposite-sex partnerships. Fourth, social desirability may have influenced results, as participants may feel inclined to under-report IPV and other criminal behaviors in both the interview and questionnaires. However, they did not have any inducement to do so in our study, and this was circumvented to some extent in the case of the PCL: SV with the use of public records to corroborate reports of legal involvement. Finally, this study is cross-sectional, so it is impossible to make claims about which partner may have perpetrated the abuse first. Relational dynamics are often reciprocal, and it is difficult to disentangle

temporal order. Nonetheless, more precise temporal measurements may yield fruitful information about the role of psychopathy in IPV perpetration for both genders.

This study also has important implications for future research and intervention in IPV. First, our results, not surprisingly, suggest that individual differences do not operate in a vacuum (e.g., Mischel & Shoda, 1995), and at least in terms of psychopathic traits, researchers and clinicians need to consider broader relational functioning and partner violence to understand risk for IPV in participants or clients. Our findings highlight the importance of assessing psychopathic traits when working with couples involved in a mutually-violent relationship. First, to the extent that the male partner scores high on impulsive-antisocial traits, their strategies for dealing with conflict will ensure a cyclical pattern of violence unless different conflict-resolution skills are learned. Second, clinicians may want to assess women's Factor 1 traits, as women high on these traits may be less sensitive to partner perpetrated IPV in terms of their own violence, which may help violence risk assessments and explain why psychopathy may not predict violence as well in women as it does in men. Though our results are cross-sectional, and do not yet have utility for developing treatment, further investigations may suggest that different interventions might be more effective for men and women.

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References

Aiken, LS.; West, SG. Multiple regression: Testing and interpreting interactions. Newbury Park: Sage; 1991.

Atkins DC, Gallop RJ. Rethinking how family researchers model infrequent outcomes: A tutorial on count regression and zero-inflated models. Journal of Family Psychology. 2007; 21:726–735. [PubMed: 18179344]

Archer J. Sex differences in aggression between heterosexual partners: A meta-analytic review. Psychological Bulletin. 2000; 126:651–680. [PubMed: 10989615]

Ansara DL, Hindin MJ. Exploring gender differences in the patterns of intimate partner violence in Canada: a latent class approach. Journal of Epidemiology and Community Health. 2010; 64(10): 849–54. [PubMed: 19833606]

Ansara DL, Hindin MJ. Psychosocial consequences of intimate partner violence for women and men in Canada. Journal of Interpersonal Violence. 2011; 26(8):1628–1645. [PubMed: 20501897]

Benning SD, Patrick CJ, Hicks BM, Blonigen DM, Krueger RF. Factor structure of the psychopathic personality inventory: Validity and implications for clinical assessment. Psychological Assessment. 2003; 15(3):340–350. [PubMed: 14593834]

Blonigen DM, Sullivan EA, Hicks BM, Patrick CJ. Facets of psychopathy in relation to potentially traumatic events and posttraumatic stress disorder among female prisoners: The mediating role of borderline personality disorder traits. Personality Disorders: Theory, Research, and Treatment. 2012; 3(4):406–414.

Browning J, Dutton D. Assessment of wife assault with the Conflict Tactics Scale: Using couple data to quantify the differential reporting effect. Journal of Marriage and the Family. 2003; 48:375–379.

Camp JP, Skeem JL, Barchard K, Lilienfeld SO, Poythress NG. Psychopathic predators? getting specific about the relation between psychopathy and violence. Journal of Consulting and Clinical Psychology. 2013; 81(3):467–480. [PubMed: 23316742]

Capaldi DM, Kim HK, Shortt JW. Observed initiation and reciprocity of physical aggression in young, at-risk couples. Journal of Family Violence. 2007; 22(2):101–111. [PubMed: 17468783]

Cleckley, HM. The mask of sanity. 5th. St. Louis, MO: C. V. Mosby; 1976.

Cooke DJ, Michie C. Refining the construct of psychopath: Towards a hierarchical model. Psychological Assessment. 2001; 13:171–188. [PubMed: 11433793]

Cruise KR, Colwell LH, Lyons PM, Baker MD. Prototypical analysis of adolescent psychopathy: Investigating the juvenile justice perspective. Behavioral Sciences & the Law. 2003; 21(6):829–846. [PubMed: 14696033]

Edens JF, Campbell JS, Weir JM. Youth psychopathy and criminal recidivism: A meta-analysis of the psychopathy checklist measures. Law and Human Behavior. 2007; 31(1):53–75. [PubMed: 17019617]

Ellsberg M, Jansen HA, Heise L, Watts CH, Garcia-Moreno C. Intimate partner violence and women 's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. Lancet (London, England). 2008; 371(9619):1165–1172.

Fanti KA. Individual, social, and behavioral factors associated with co-occurring conduct problems and callous-unemotional traits. Journal of Abnormal Child Psychology. 2013; 41(5):811–824. [PubMed: 23408037]

Feld SL, Straus MA. Escalation and desistance of wife assault in marriage. Criminology. 1989; 27:141–161.

Finley EP, Baker M, Pugh MJ, Peterson A. Patterns of perceptions of intimate partner violence committed by returning veterans with post-traumatic stress disorder. Journal of Family Violence. 2010; 25(8):737–743.

First, MB.; Spitzer, RL.; Gibbon, M.; Williams, JB. Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Non-patient Edition. (SCID-I/NP). New York: Biometrics Research, New York State Psychiatric Institute; Nov. 2002

Golding JM. Intimate partner violence as a risk factor for mental disorders: A meta-analysis. Journal of Familty Violence. 1999; 14:99–132.

Hare, RD. Manual for the Revised Psychopathy Checklist. 2nd. Toronto, ON, Canada: Multi-Health Systems; 2003.

Hare RD, Neumann CS. Psychopathy as a clinical and empirical construct. Annual Review of Clinical Psychology. 2008; 4:217–246.

Harpur TJ, Hakstian AR, Hare RD. Factor structure of the psychopathy checklist. Journal of Consulting and Clinical Psychology. 1988; 56(5):741–747. [PubMed: 3192791]

Hart, SD.; Cox, DN.; Hare, RD. The Hare Psychopathy Checklist: Screening Version (PCL: SV). Toronto, Ontario, Canada: Multi-Health Systems; 1995.

Hicks BM, Patrick CJ. Psychopathy and negative emotionality: Analyses of suppressor effects reveal distinct relations with emotional distress, fearfulness, and anger-hostility. Journal of Abnormal Psychology. 2006; 115(2):276–287. [PubMed: 16737392]

Hicks BM, Vaidyanathan U, Patrick CJ. Validating female psychopathy subtypes: Differences in personality, antisocial and violent behavior, substance abuse, trauma, and mental health. Personality Disorders. 2010; 1(1):38–57. [PubMed: 20582155]

Holtzworth-Munroe A, Meehan JC, Heron K, Rehman U, Stuart GL. Testing the Holtzworth-Munro and Stuart (1994) batter typology. Journal of Counseling Psychology. 2000; 68:1000–1019.

Holtzworth-Munroe A, Stuart GL. Typologies of male batterers: Three subtypes and the differences among them. Psychological Bulletin. 1994; 116:476–497. [PubMed: 7809309]

Howard R, McCarthy L, Huband N, Duggan C. Re-offending in forensic patients released from secure care: The role of antisocial/borderline personality disorder co-morbidity, substance dependence and severe childhood conduct disorder. Criminal Behaviour and Mental Health. 2013; 23(3):191–202. [PubMed: 23371302]

Kennealy PJ, Skeem JL, Walters GD, Camp J. Do core interpersonal and affective traits of PCL-R psychopathy interact with antisocial behavior and disinhibition to predict violence? Psychological Assessment. 2010; 22(3):569–580. [PubMed: 20822269]

Kimonis E, Frick P, Fazekas H, Loney B. Psychopathy, Aggression, and the Processing of Emotional Stimuli in Non-Referred Girls and Boys. Behavioral Sciences and the Law. 2006; 24:21–37. [PubMed: 16491477]

Kraanen FL, Vedel E, Scholing A, Emmelkamp PM. Prediction of intimate partner violence by type of substance use disorder. Journal of Substance Abuse Treatment. 2014; 46(4):532–539. [PubMed: 24365101]

Leistico A, Salekin R, DeCoster J, Rogers R. A large-scale meta-analysis relating the Hare measures of psychopathy to antisocial conduct. Law and Human Behavior. 2008; 32:28–45. [PubMed: 17629778]

Leonard KE, Senchak M. Prospective prediction of husband marital aggression within newlywed couples. Journal of Abnormal Psychology. 1996; 105(3):369–80. [PubMed: 8772007]

Marsee MA, Silverthorn P, Frick PJ. The association of psychopathic traits with aggression and delinquency in non-referred boys and girls. Behavioral Sciences & the Law. 2005; 23(6):803–817. [PubMed: 16333813]

Marshall AD, Holtzworth-Munroe A. Recognition of wives' emotional expressions: a mechanism in the relationship between psychopathology and intimate partner violence perpetration. Journal of Family Psychology. 2010; 24(1):21–30. [PubMed: 20175605]

Miller JD, Dir A, Gentile B, Wilson L, Pryor LR, Campbell WK. Searching for a vulnerable dark triad: Comparing factor 2 psychopathy, vulnerable narcissism, and borderline personality disorder. Journal of Personality. 2010; 78(5):1529–1564. [PubMed: 20663024]

Mischel W, Shoda Y. A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. Psychological Review. 1995; 102(2):246–268. [PubMed: 7740090]

Moffitt P, Fikowski H, Mauricio M, Mackenzie A. Intimate partner violence in the Canadian territorial north: Perspectives from a literature review and a media watch. International Journal of Circumpolar Health. 2013; 72

O'Leary KD, Smith Slep AM, O'Leary SG. Multivariate models of men and women's partner aggression. Journal of Consulting and Clinical Psychology. 2007; 75(5):752–764. [PubMed: 17907857]

Palmer RH, Knopik VS, Rhee SH, Hopfer CJ, Corley RC, Young SE, Hewitt JK. Prospective effects of adolescent indicators of behavioral disinhibition on DSM-IV alcohol, tobacco, and illicit drug dependence in young adulthood. Addictive Behaviors. 2013; 38(9):2415–2421. [PubMed: 23685327]

Patrick CJ, Zempolich KA. Emotion and aggresion in the psychopathic personality. Aggression and Violent Behavior. 1998; 3:303–228.

Pastwa-Wojciechowska B, Kaźmierczak M, Błażek M. Self-esteem and styles of coping with stress versus strategies of planning in people with psychopathic personality disorders. Medical Science Monitor. 2012; 18(2):CR119–CR124. [PubMed: 22293875]

Public Policy Office of the National Coalition Against Domestic Violence. Domestic violence facts. National coalition against domestic violence. n.d.Retrieved September 10, 2012, from www.ncadv.org/files/DomesticViolenceFacts(National).pdf

Rauer AJ, El Sheikh M. Reciprocal pathways between intimate partner violence and sleep in men and women. Journal of Family Psychology. 2012; 26(3):470–477. [PubMed: 22468689]

Romito P, Beltramini L, Escribà-Agüir V. Intimate partner violence and mental health among italian adolescents: gender similarities and differences. Violence Agains Women. 2013 Epub ahead of print.

Ross J. Personality and situational correlates of self-reported reasons for intimate partner violence among women versus men referred for batterers. Behavioral Sciences & the Law. 2011; 29(5): 711–727. [PubMed: 21928400]

Salekin RT, Rogers R, Sewell KW. Construct validity of psychopathy in a female offender sample: A multitrait-multimethod evaluation. Journal of Abnormal Psychology. 1997; 106(4):576–585. [PubMed: 9358688]

Salekin RT, Rogers R, Ustad KL, Sewell KW. Psychopathy and recidivism among female inmates. Law and Human Behavior. 1998; 22(1):109–128. [PubMed: 9487793]

Salekin RT, Trobst KK, Krioukova M. Construct validity of psychopathy in a community sample: A nomological net approach. Journal of Personality Disorders. 2001; 15(5):425–441. [PubMed: 11723877]

Schumm JA, O'Farrell TJ, Murphy CM, Murphy M, Muchowski P. Test of a conceptual model of partner aggression among women entering substance use disorder treatment. Journal of Studies on Alcohol and Drugs. 2011; 72(6):933–942. [PubMed: 22051207]

Shorey RC, Brasfield H, Febres J, Stuart GL. The association between impulsivity, trait anger, and the perpetration of intimate partner and general violence among women arrested for domestic violence. Journal of Interpersonal Violence. 2011; 26(13):2681–2697. [PubMed: 21118862]

Simpson LE, Christensen A. Spousal agreement regarding relationship aggression on the conflict tactics scale-2. Psychological Assessment. 2005; 17(4):423–432. [PubMed: 16393009]

Sprague J, Javdani S, Sadeh N, Newman JP, Verona E. Borderline personality disorder as a female phenotypic expression of psychopathy? Personality Disorders. 2012; 3(2):127–39. [PubMed: 22452756]

Straus MA. Measuring intrafamily conflict and violence: the Conflict Tactics Scale. Journal of Marriage and Family. 1979; 41:75–88.

Straus, MA.; Gelles, RJ. Physical violence in American families: Risk factors and adaptations to violence in 8,145 families. New Brunswick, WJ: Transaction Publishers; 1990.

Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The revised conflict tactics scale (CTS2): Development and preliminary psychometric data. Journal of Family Issues. 1996; 17:283–316.

Sutton SK, Vitale JE, Newman JP. Emotion among women with psychopathy during picture perception. Journal of Abnormal Psychology. 2002; 111(4):610–619. [PubMed: 12428774]

Swan S, Gambone L, Caldwell J, Sullivan T, Snow D. A review of research on women's use of violence with male intimate partners. Violence and Victims. 2008; 23(3):301–314. [PubMed: 18624096]

Testa M, Hoffman JH, Leonard KE. Female intimate partner violence perpetration: stability and predictors of mutual and nonmutual aggression across the first year of college. Aggressive Behavior. 2011; 37:362–373. [PubMed: 21462201]

Verona E, Patrick CJ, Joiner TE. Psychopathy, antisocial personality, and suicide risk. Journal of Abnormal Psychology. 2001; 110(3):462–470. [PubMed: 11502089]

Verona E, Sachs-Ericsson N. The intergenerational transmission of externalizing behaviors in adult participants: The mediating role of childhood abuse. Journal of Consulting and Clinical Psychology. 2005; 73(6):1135–1145. [PubMed: 16392986]

Verona, E.; Vitale, J. Psychopathy in women: Assessment, manifestations, and etiology. In: Patrick, CJ., editor. Handbook of Psychopathy. New York: Guilford; 2006. p. 415-436.

Vitale JE, Newman JP, Bates JE, Goodnight J, Dodge KA, Pettit GS. Deficient behavioral inhibition and anomalous selective attention in a community sample of adolescents with psychopathic traits and low-anxiety traits. Journal of Abnormal Child Psychology. 2005; 33(4):461–470. [PubMed: 16118992]

Vitale JE, Smith SS, Brinkley CA, Newman JP. The reliability and validity of the Psychopathy Checklist–Revised in a sample of female offenders. Criminal Justice and Behavior. 2002; 29:202–231.

Walsh Z, Kosson DS. Psychopathy and violence: The importance of factor level interactions. Psychological Assessment. 2008; 20(2):114–120. [PubMed: 18557688]

Walsh Z, Swogger MT, O'Connor BP, Chatav Schonbrun Y, Shea MT, Stuart GL. Subtypes of partner violence perpetrators among male and female psychiatric patients. The Journal of Abnormal Psychology. 2010; 119(3):563–574.

Weinstein Y, Gleason ME, Oltmanns TF. Borderline but not antisocial personality disorder symptoms are related to self-reported partner aggression in late middle-age. Journal of Abnormal Psychology. 2012; 121:692–698. [PubMed: 22732005]

Whisman MA, Schonbrun YC. Social consequences of borderline personality disorder symptoms in a population-based survey: Martial distress, marital violence, and marital disruption. Journal of Personality Disorders. 2009; 23:410–415. [PubMed: 19663660]

Widiger, TA.; Mangine, S.; Corbitt, EM.; Ellis, CG.; Thomas, GV. Personality Disorder Interview-IV. A semi-structured interview for the assessment of personality disorders Professional manual. Psychological Assessment Resources; Odessa, FL: 1995.

Woodworth M, Porter S. In cold blood: Characteristics of criminal homicides as a function of psychopathy. Journal of Abnormal Psychology. 2002; 111(3):436–445. [PubMed: 12150419]

Wu V, Huff H, Bhandrai M. Pattern of physical injury associated with intimate partner violence in women presenting to the emergency department; A systematic review and meta-analysis. Trauma, Violence, and Abuse. 2010; 11:71–82.

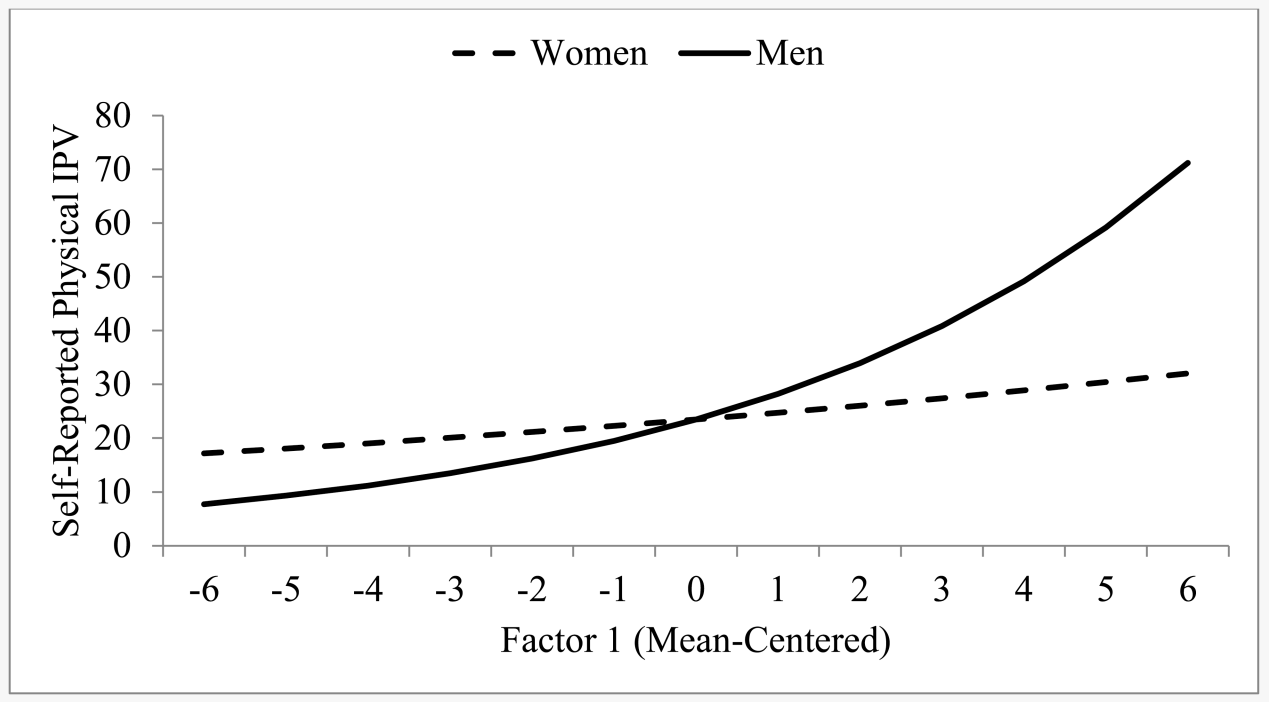

Figure 1. Participant's Physical Intimate Partner Violence (IPV) as a Function of Gender and Factor 1

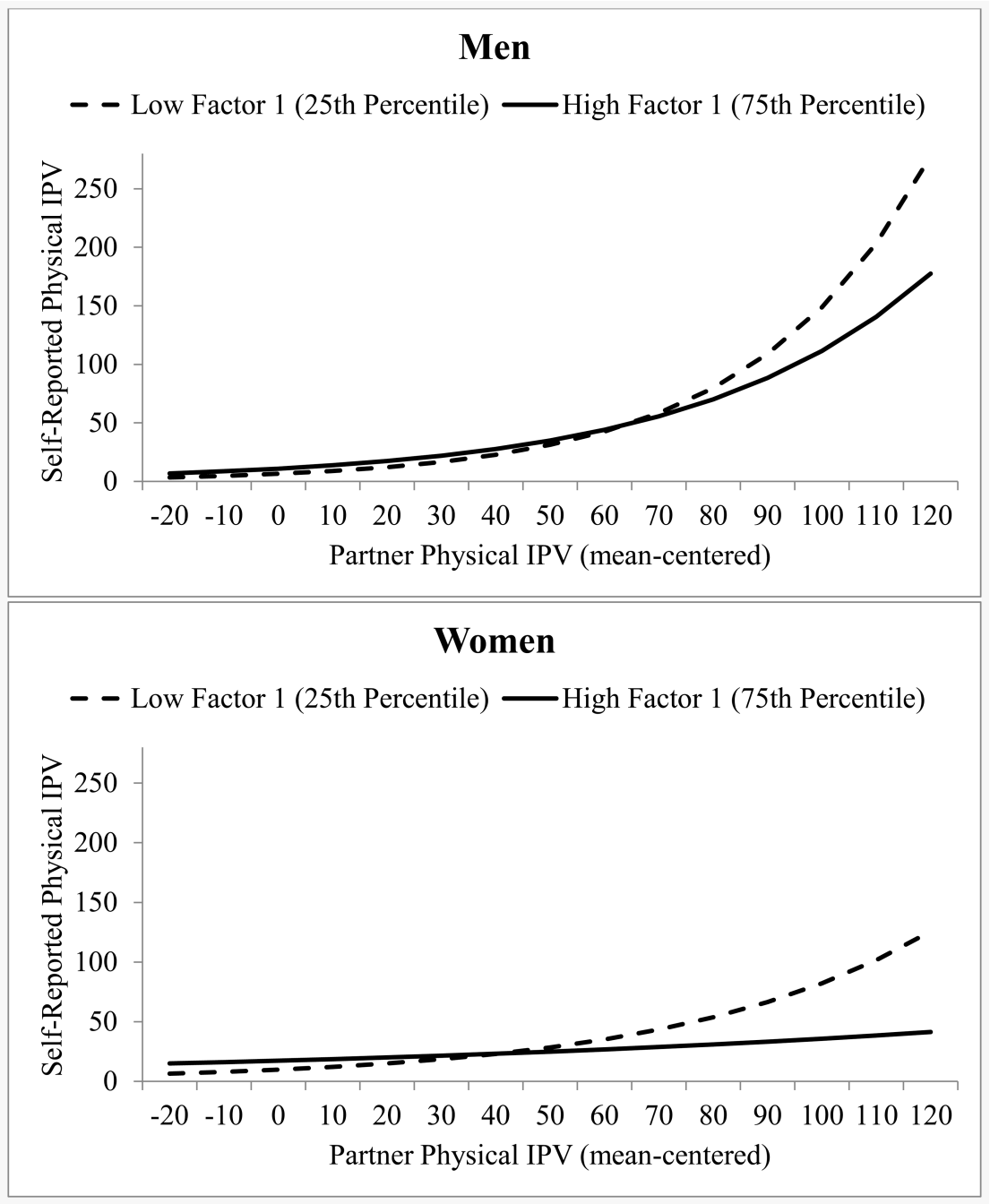

Figure 2. Participant's Physical Intimate Partner Violence (IPV) as a Function of Gender, Factor 1 and Partner Physical Intimate Partner Violence for Men (Top Panel) and Women (Bottom Panel)

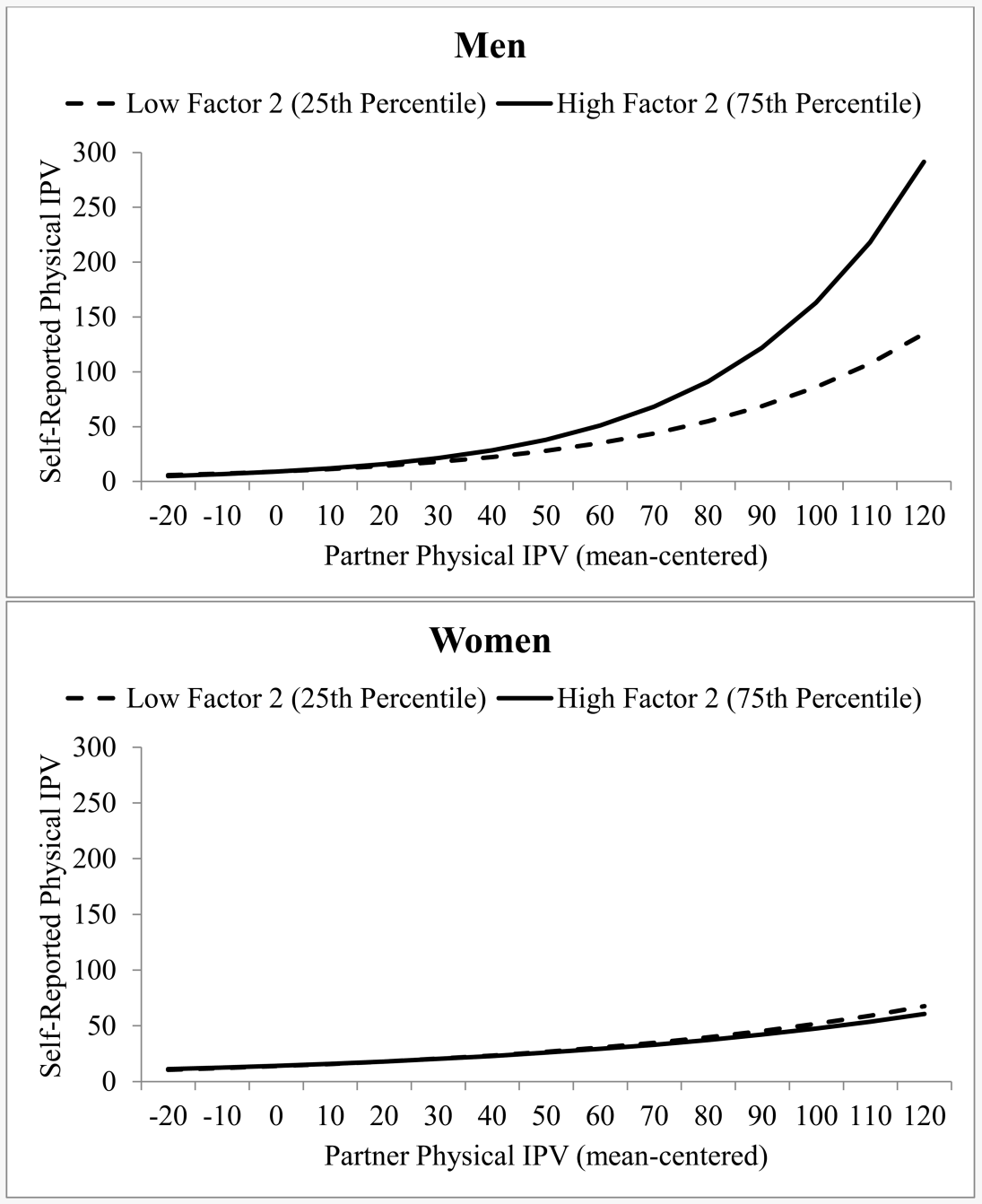

Figure 3. Participant's Physical Intimate Partner Violence (IPV) as a Function of Gender, Factor 2 and Partner Physical Intimate Partner Violence for Men (Top Panel) and Women (Bottom Panel)

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Table 1

Descriptive Statistics For Study Variables

	1	2	3	4	5	6
1 BPD Sx	—	.17†	.12	.36**	.19*	.34**
2 SUD Sx	.24**	—	.18	.48**	.25**	.00
3 F1	.06	.15†	—	.53**	.19*	.07
4 F2	.39**	.28**	.60**	—	.17†	.16†
5. Partner-IPV	.03	.20*	.13	.14†	—	.44**
6. Self-IPV	.09	.14†	.15†	.16†	.76**	—
M	1.99	11.49	4.56	6.12	9.41	11.75
SD	1.83	5.56	2.94	2.94	24.27	31.89
Range	0-7	0-22	0-12	0-12	0-184	0-275
Skew	1.01	-.05	.33	-.04	5.21	4.77
Kurtosis	.38	-.74	-.64	-.81	34.06	26.81
d	-.60**	.08	.51**	.50**	-.42**	-.35**

Note. BPD Sx = Borderline Personality Disorder Symptoms; SUD Sx = Substance use disorder symptoms; F1 = Factor 1; F2 = Factor 2; Partner-IPV=Physical Intimate Partner Violence - Partner; Self-IPV=Physical Intimate Partner Violence - Self. Correlations for women are above the diagonal and men are below the diagonal. Means, *SD, Range, Skew, and Kurtosis* are for the entire sample. *d* is for comparing men to women (i.e., $d > 0$ = higher for men, $d < 0$ = higher for women).

$^{**}p < .001$,

$^{*}p < .05$,

$^{\dagger}p < .10$

Table 2

Regression Results for Psychopathy Factors × Gender Interactions

	b	95% CI	*OR/IRR*	χ^2	*p*
Zero-Inflation Model					
BPD-SX	-.29	-.47, -.11	0.74	10.64	.001
SUD-SX	-.02	-.08, .02	0.97	0.88	.348
Gender	.64	-.02, 1.31	1.90	3.57	.058
F1	.10	-.10, .30	1.10	0.98	.323
F2	-.12	-.34, .09	0.88	1.24	.265
F1 × F2	-.02	-.09, .04	0.97	0.45	.502
Gender × F1	-.12	-.38, .14	0.88	0.79	.375
Gender × F2	.17	-.07, .43	1.19	1.91	.166
Gender × F1 × F2	.00	-.08, .08	1.00	0.00	.992
Poisson Model					
BPD-SX	.17	.14, .19	1.18	239.63	<.001
SUD-SX	-.02	-.03, -.02	0.97	58.54	<.001
Gender	-.63	-.75, -.51	0.52	116.00	<.001
F1	.05	.02, .07	1.05	17.00	<.001
F2	.03	.01, .06	1.03	8.70	.003
F1 × F2	-.04	-.04, -.03	0.96	77.57	<.001
Gender × F1	.13	.08, .17	1.14	31.93	<.001
Gender × F2	-.01	-.04, .0	0.99	0.08	.776
Gender × F1 × F2	.01	-.00, .02	1.00	1.14	.284

Note. *OR* = Odds Ratio; *IRR* = Incidence Rate Ratio; *BPD*-SX = Borderline Personality Disorder Symptoms; SUD-SX = Substance Use Disorder Symptoms; F1 = Factor 1; F2 = Factor 2; IPV=Intimate Partner Violence; The Zero-Inflation Model predicts *P* (IPV = 0); The Poisson Model predicts IPV, where IPV > 0.

Table 3

Regression Results for Psychopathy Factors × Gender × Partner IPV Interactions

	b	95% CI	*OR/IRR*	χ^2	*p*
Zero-Inflation Model					
BPD-SX	-.22	-.43, -.02	0.80	3.93	.047
SUD-SX	.01	-.05, .04	1.00	0.08	.782
Gender	-.40	-2.32, 1.52	0.66	0.17	.683
F1	.33	-.02, .70	1.40	3.25	.071
F2	-.06	-.47, .34	0.93	0.10	.757
Partner IPV	-.13	-.24, -.02	0.87	5.99	.014
F1 × F2	-.03	-.11, .04	0.96	0.74	.388
Gender × F1	-.30	-.93, .31	0.73	0.93	.335
Gender × F2	.37	-.22, .98	1.45	1.48	.223
Gender × Partner IPV	-.11	-.22, .05	0.89	1.67	.196
F1 × Partner IPV	.01	-.01, .05	1.01	0.99	.318
F2 × Partner IPV	.01	-.02, .04	1.01	0.35	.555
Gender × F1 × Partner IPV	-.01	-.07, .04	0.98	0.30	.583
Gender × F2 × Partner IPV	.01	-.04, .07	1.01	0.25	.619
Gender × F1 × F2	-.01	-.10, .08	0.99	0.02	.883
Poisson Model					
BPD-SX	.21	.18, .23	1.23	326.05	< .001
SUD-SX	-.06	-.07, -.05	0.93	206.52	<.001
Gender	-.50	-.64, -.36	0.60	48.16	<.001
F1	.14	.11, .17	1.15	80.88	<.001
F2	-.01	-.03, .02	0.99	0.11	.742
Partner IPV	.01	.01, .01	1.01	627.46	<.001
F1 × F2	-.02	-.03, -.01	0.97	20.61	<.001
Gender × F1	.03	-.02, .09	1.03	1.42	.234
Gender × F2	-.03	-.08, .01	0.96	2.09	.148
Gender × Partner IPV	.01	.010, .019	1.01	44.09	<.001
F1 × Partner IPV	-.003	-.004, -.003	0.996	240.99	<.001

	b	95% CI	*OR/IRR*	χ^2	*p*
F2 × Partner IPV	-.0001	-.000, .000	0.999	0.13	.716
Gender × F1 × Partner IPV	.003	.001, .005	1.003	8.62	.003
Gender × F2 × Partner IPV	.002	.001, .004	1.002	10.23	.001
Gender × F1 × F2	-.000	-.018, .017	1.000	0.00	.957

Note. *OR* = Odds Ratio; *IRR* = Incidence Rate Ratio; BPD-SX = Borderline Personality Disorder Symptoms; SUD-SX = Substance Use Disorder Symptoms; F1 = Factor 1; F2 = Factor 2; IPV= Intimate Partner Violence; The Zero-Inflation Model predicts *P* (IPV = 0); The Poisson Model predicts IPV, where IPV > 0.