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PTSD, GENDER, AND IPV PERPETRATION:  
HOW (NOT) EXPRESSING EMOTIONS MATTERS

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## ABSTRACT

This study investigated the role of one's own and one's partner's posttraumatic stress disorder (PTSD) symptom severity and emotional inexpressivity in intimate partner violence (IPV) perpetration among both men and women. Participants included 114 individuals from 57 rural community couples in which at least one partner met screening criteria for probable PTSD. Each couple engaged in a 10-minute videotaped discussion regarding the highest rated negative issue in the relationship as rated by both partners. Participants reviewed their video and identified time points where they experienced an emotion, which was subsequently coded for behavioral inexpressivity of positive and negative emotions. Actor-partner interdependence models indicate that among men, greater positive inexpressivity, as well as less negative inexpressivity, interacts with PTSD symptom severity to predict increased IPV perpetration. For women, greater actor negative inexpressivity and actor PTSD symptom severity predicts increased IPV perpetration. Additionally, women's greater emotional inexpressivity interacts with their partners' PTSD symptom severity to predict women's IPV perpetration. Results are discussed in the context of current theory of PTSD and IPV perpetration, and the broader effects of emotional inexpressivity on adverse relationship outcomes. Overall, our findings provide support for the use of emotion-focused therapy techniques among individual and couples therapy for individuals with PTSD.

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## **Chapter 1**

### **Introduction**

Posttraumatic stress disorder (PTSD) is associated with a host of negative effects on romantic relationships. Beyond the individual difficulty associated with recovery, PTSD symptoms are related to relationship struggles such as increased relationship distress, elevated levels of aggression perpetration, less provision of intimacy behaviors, higher rates of divorce, and increased family adjustment difficulties (Galovski & Lyons, 2004; Hanley, Leifker, Blandon, & Marshall, 2013; Lambert, Engh, Hasbun, & Holzer, 2012; Monson, Taft, & Fredman, 2009; Riggs, Byrne, Weathers, & Litz, 1998; Taft, Watkins, Stafford, Street, & Monson, 2011). Among these outcomes, PTSD symptoms are associated with increased levels of intimate partner violence (IPV) perpetration (Byrne & Riggs, 1998; McFall, Fontana, Raskind, & Rosenheck, 1999; Taft et al., 2011). For both men and women, IPV within relationships can not only lead to physical problems (such as increased physical injury, need for medical care, time off from work, sick days) but also significant psychological effects including elevated symptoms of posttraumatic stress, depression, suicidal ideation, and substance dependence (Holtzworth-Munroe, Smutzler, & Bates, 1997; Golding, 1999; Randle & Graham, 2011). Healthy, supportive, and happy intimate relationships can serve to decrease the negative effects of PTSD (Agaibi & Wilson, 2005); therefore, work aimed at understanding pathways that lead to negative relationship outcomes can inform treatment and intervention efforts.

Emotional communication among couples is important to understanding both healthy and unhealthy relationship processes. Emotions do not solely function individually and intrapersonally; rather, they operate dynamically within a social context (Parkinson, 1996). Van Kleef's (2009) emotions as social information (EASI) model supports this position and offers a guiding framework for understanding how emotions operate interpersonally. People often feel emotions in relation to their social environments (e.g., a wife who says she felt anger *at* her husband) and how individuals interpret another's emotional expressions can guide responsive behavior (e.g., a crying individual can evoke compassion from their partner; Frijda & Mesquita, 1994; Keltner & Haidt, 1999). The EASI model posits that this responsive behavior to emotional communication is primarily guided by inferential and affective reactions, social information processing of the observer, and social-relational factors.

Notably, therefore, is how emotional expression can influence intimate relationships. Prior research has demonstrated a link between emotional expressivity and marital satisfaction (Carstensen, Gottman, & Levenson, 1995; Feeney, Noller, & Roberts, 1998; Gill, Christensen, & Fincham, 1999; Gottman & Levenson, 1986; Rauer and Volling, 2005). While both positive and negative expression of emotions has been related to this link (Carstensen et al., 1995), little work has examined how the *absence* of emotional expressivity, in other words emotional *inexpressivity*, influences relationship outcomes. Flat affect among those with schizophrenia and the lack of positive affect among depressed individuals can contribute to relationship difficulties as a result of the decreased provision of important responsive behavior to their partners (Keltner & Kring, 1998). Applied beyond the clinical level, not expressing emotions disrupts communication (Butler et al., 2003), leads to increased relationship distress (Reddy, Meis, Erbes, Polusny, & Compton, 2011), and increases the chances of aggression perpetration (Reddy et al.,

2011; Maldonado, DiLillo, & Hoffman, 2014; Tull, Jakupcak, Paulson, & Gratz, 2007).

Elucidating how emotional inexpressivity more specifically affects relationship processes is an important and under examined pathway that can inform a better understanding of adverse relationship outcomes.

When examining relationships among those with PTSD, emotional inexpressivity is a critical consideration given the affective component of the disorder. Indeed, a central component of PTSD diagnostic criteria is emotional numbing, which includes 1) a markedly diminished interest or participation in significant activities, and 2) a persistent inability to experience positive emotions (e.g., inability to experience happiness, satisfaction, or loving feelings; American Psychiatric Association, 2013, p. 272). More specifically, emotional numbing symptoms can be defined as an absence of emotional responsiveness and can be the result of other avoidance symptoms or associated cognitive fatigue, deliberate denial, or intentional inhibition (Litz, 1992). Among individuals with PTSD, emotional numbing symptoms, compared to other symptoms, are the strongest predictor of relationship distress (Campbell & Renshaw, 2013; Cook, Riggs, Thompson, Coyne, & Sheikh, 2004; Erbes, Meis, Polusny, & Compton, 2011; Lambert et al., 2012; Monson et al., 2009). Numerous studies investigating emotional processes among those with PTSD have demonstrated that greater PTSD symptom severity is associated with expressive suppression, an emotion regulation strategy that includes emotional inexpressivity, both cross-sectionally (Eftekhari, Zoellner, & Vigil, 2009; Ehring & Quack 2010; Moore, Zoellner, & Mollenhelt, 2008) and longitudinally (Boden et al., 2013). Of note, some recent studies have demonstrated that not expressing emotions is linked to the increased likelihood of general aggression perpetration (Reddy et al., 2011; Maldonado et al., 2014; Tull et al., 2007). Taken together, these studies suggest that emotional inexpressivity may

have an influential role in negative relationship outcomes such as communication difficulties, relationship dissatisfaction, and IPV perpetration.

Although no prior studies have tested the role of emotional inexpressivity in the perpetration of IPV among those with PTSD, one prior study demonstrated that emotional inexpressivity may explain increased rates of general aggression perpetration among those with PTSD. Tull and colleagues (2007) found that emotional inexpressivity mediates the relationship between PTSD symptoms and general aggression perpetration. Limiting the study's findings, however, is the sole use of self-report measures in a nonclinical, predominantly young adult, exclusively male sample whose exposure was limited to interpersonal trauma (i.e., physical or sexual assault). Further research, therefore, is necessary to replicate the study and examine if these findings hold true to IPV perpetration when examining observed, rather than self-report, emotional inexpressivity in a more varied, clinically relevant sample.

An individual's emotional inexpressivity can increase the physiological arousal of not only one's self but also his or her partner (Butler et al., 2003). Despite this finding, no known studies have investigated how emotional inexpressivity may operate at the dyadic level to predict aggression perpetration. IPV, specifically among heterosexual couples, is an inherently dyadic, gender-based phenomenon. Contrary to common belief, both men and women perpetrate IPV and their rates of physical violence perpetration are roughly equal (Archer, 2002). Much work, however, focuses either exclusively on male-perpetrated or female-perpetrated IPV perpetration without taking into account the interactive nature of relationship violence. Regardless of who is perpetrating violence, both partners contribute to the conditions and processes that result in violent conflicts. Research questions need to be addressed in both men and women with adequate statistical methodology to account for the dependency among couples' data.

Additionally, gender differences in emotional inexpressivity, IPV perpetration, and PTSD symptoms as individual constructs could affect how they interact with one another interpersonally. These considerations warrant the use of a gender-based, dyadic approach in examining emotional inexpressivity, IPV perpetration, and PTSD symptoms among couples.

The current study aims to address limitations of prior work by using such an approach to examine emotional inexpressivity, PTSD, and IPV perpetration. Using a sample of community couples, we investigated how one's own and one's partner's emotional inexpressivity during conflict discussions moderates the relationship between PTSD symptom severity and IPV perpetration in both men and women. We hypothesized that 1) PTSD symptoms will predict IPV perpetration, 2) the interaction between greater emotional inexpressivity and elevated PTSD symptoms will predict increases in one's own physical IPV perpetration, and 3) the interaction between one's partner's greater emotional inexpressivity and one's partner's elevated PTSD symptoms will predict increases in one's own physical IPV perpetration. Considering prior research on gender differences in emotional expressivity (Carstensen et al., 1995), PTSD (Olf, Langeland, Draijer, & Gersons, 2007), and IPV perpetration (Archer, 2002), we also examined how these processes may differ by gender.

## Chapter 2

### Method

#### Participants

A sample of married or cohabitating heterosexual couples ( $N = 64$  couples, 128 individuals) was recruited from rural or semirural communities via flyers targeting couples in which at least one partner has experienced a stressful life event. Due to incomplete data, our final analytic sample consisted of 57 couples ( $N = 114$  individuals). Interested couples completed a telephone screening using the PTSD Checklist, Civilian Version (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993). Exclusion criteria included: neither partner met criteria for probable PTSD (i.e., a score  $>44$  on the PCL;  $n = 122$  couples), loss of interest in participating in the study ( $n = 8$  couples), income over \$100,000 per year and/or a partner with more than 6 years of post-high school education ( $n = 3$  couples), or ended relationship ( $n = 1$  couple). Income and education level constraints were employed to avoid the inclusion of university faculty and to obtain a roughly representative community sample of individuals most likely to be helped by rural mental health clinics. The Institutional Review Board approved the procedures of the study and written informed consent was received from all participants.

Participants had an average age of 35.9 ( $SD = 12.2$ , range 18 to 64) years and were mostly White (85.1%; 1.8% White Hispanic or Latino; 2.6% Nonwhite Hispanic or Latino; 7.0% African American, and 3.5% multiracial). The majority (69.2%) were employed, with an average individual monthly income of \$1809 ( $SD = \$1564$ ). Couples had an average relationship length of 11.2 years ( $SD = 11.3$  years, range 4 months to 43.3 years).

## Procedure

As part of a larger study on couple functioning and PTSD, couples separately rated 5 negative problems or aspects of their relationship in order of importance. Couples then participated in a 10-minute videotaped discussion regarding the highest rated issue identified by both partners. Topics for these discussions included communication or problem solving (31.6%), finances (17.5%), childrearing and household responsibilities (12.3%), physical health (8.8%), trust (7.0%), spending time together (5.3%), and family and friend issues (3.5%). Following the discussion, each partner reviewed the video of their interaction and recorded up to 7 specific time points where they experienced an emotion or a significant thought during the original discussion. If they chose an emotion, participants indicated what emotion they were feeling (happy, sad, fear, anger, disgust, or surprise) and offered commentary on why they felt the indicated emotion. Participants, on average, identified 4.57 time points ( $SD = 1.76$ ). Participants also completed self-report measures assessing IPV perpetration. Trained graduate students conducted diagnostic interviews with each participant to assess PTSD symptom severity.

## Measures

**PTSD symptoms.** The Clinician Administered PTSD Scale (CAPS; Blake et al., 1995) is a diagnostic interview that assesses the frequency and intensity of each DSM-IV PTSD

symptom category on a 5-point scale. Scores are summed together to provide a total symptom severity score ( $\alpha = .94$ ). Well-validated and established as the gold measure for PTSD diagnosis (Weathers, Keane, & Davidson, 2001), the CAPS showed excellent inter-rater reliability (intraclass correlation coefficient [ICC] = .93) for 10% of the interviews.

**IPV perpetration.** Physical IPV perpetration was measured using the Physical Assault subscale of the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The subscale measures the frequency of violent behaviors (ranging from *0 times* to *more than 20 times*) that participants and their partners engaged in within the past year. The CTS2 Physical Assault subscale includes physical aggression items that range from moderate (e.g., “I pushed or shoved my partner”) to severe (e.g., “I used a knife or gun on my partner”) and has demonstrated good internal consistency and test-retest reliability (Straus et al., 1996; Vega & O’Leary, 2007). A total frequency score was calculated from the eight items of the scale. Because of social desirability concerns and the possibility of underreporting IPV, we used the highest report of total physical IPV perpetration (either male or female report) within each couple. The internal consistency reliability coefficient was .73 for the current sample. A logarithmic transformation was applied to help the data better approximate a normal distribution.

**Emotional inexpressivity.** Naïve observational coding systems, in which coders are instructed to use their natural intuition and individual understanding of constructs, have received convincing empirical support (Ambady & Rosenthal, 1992; Baker, Haltigan, Brewster, & Messinger, 2010; Baucom, Baucom, & Christensen, 2012; Lorber, 2006; Waldinger, Hauser, Schulz, Allen, & Crowell, 2004), including when coding dyadic interactions as compared to widely accepted specific coding systems (Baucom et al., 2012; Waldinger et al., 2004).

Importantly for the purposes of the current study, naïve coders have been found to detect minor

emotional expressivity that would otherwise not meet the threshold for a specific affective code (Waldinger et al., 2004). Additionally, naïve observational coding systems more accurately represent how partners intuitively perceive emotions, thus providing better external validity.

Our naïve coders measured positive and negative inexpressivity at the specific time points when participants indicated that they experienced an emotion. Three coders rated the amount of emotion expressed by each participant. In an effort to maintain naivety, coders did not have previous experience with observational coding systems or research concerning emotion, PTSD, or IPV. To decrease bias and to align with previous naïve coding systems, coders remained blind to study hypotheses and were instructed to rate emotional *expressivity* on a 5-point scale (1 = *low expressivity* to 5 = *high expressivity*) to avoid biasing coders towards lower ratings by expecting to view less emotion. A brief instructional training was conducted to orient coders to the procedures. Coders were instructed that emotional expressivity “refers to how people outwardly display emotions, both verbally and nonverbally,” with positive and negative expressivity referring to emotions that appear to be of a positive and negative valence, respectively. Beyond this definition, coders were told to use their intuition and to avoid placing value judgments on the content of the conversations or the valence of the emotional expressions. Coders watched each video in its entirety once to obtain a global rating of expressivity across the entire interaction. Then, coders fast-forwarded to specific time points and rated emotional expressivity for a period of 20 seconds spanning from 10 seconds before to 10 seconds after each identified time point. To avoid biased ratings of an individual’s expressivity relative to their partner, coders completed ratings for one participant at a time with that participant’s partner blocked from view. Partners’ audio was included to give context to the discussion. Coders obtained acceptable reliability for both positive expressivity (ICC = .74) and negative

expressivity ( $ICC = .72$ ). Expressivity scores were reverse-coded so high scores reflect greater inexpressivity and scores were averaged across all identified time points to obtain a total composite score reflecting inexpressivity during times when participants felt emotions.

## **Data Analysis**

Taxometric analyses suggest that PTSD is a dimensional disorder representing an extreme reaction to traumatic life events (e.g., Broman-Fulks et al., 2006); therefore, we used a continuous PTSD severity score in our analyses. Continuous scores also improve statistical power, are more reliable, and yield a greater amount of clinically relevant information than categorical measures.

We utilized a dual-intercept, distinguishable dyads actor-partner interdependence model (APIM; Kenny, Kashy, & Cook, 2006) to examine the effects of one's own (actor) and one's partner's (partner) PTSD symptom severity and emotional inexpressivity on IPV perpetration. This analytic technique accounts for the variability within and across couples and gives us the ability to statistically account for the inherent interdependence of couples' data. Separate models were conducted using positive inexpressivity and negative inexpressivity as predictors. Because it is impossible to know if participants were experiencing emotions during the entire relationship discussion, we utilized time ratings over global ratings in data analyses to more accurately capture instances where participants experienced emotions, and therefore, could have expressed emotions. All continuous predictors in the model were grand mean centered and all models were conducted using Hierarchical Linear Modeling 7.0 software (HLM; Raudenbush, Byrk, Cheong, Condon, & du Toit, 2011). Due to limitations with HLM software when running dyadic models,

error variance for the outcome variable was calculated outside of HLM and imported into the program. This error variance was calculated by weighting the variance of the outcome variable by its measurement error (i.e.,  $1 - \text{reliability of the outcome variable}$ ; Sayer & Klute, 2004). Calculations were made separately for men and women.

Our central research question was to see if emotional inexpressivity moderates the relationship between PTSD symptoms and IPV perpetration. Because existing theory and research does not provide sufficient background to guide hypotheses concerning the effects of each actor and partner interaction between emotional inexpressivity and PTSD symptoms, we utilized a backward elimination method (Hox, 2010). This approach tested a fully saturated model that included all potential predictors (i.e., main effects for emotional inexpressivity and PTSD as well as possible interactions, including actor PTSD x actor emotional inexpressivity, partner PTSD x actor emotional inexpressivity, actor PTSD x partner emotional inexpressivity, and partner PTSD x partner emotional inexpressivity). Non-significant interactions were sequentially trimmed beginning with the least significant until we reached a final, parsimonious model that includes only significant interactions. Simple slopes were then tested using Preacher, Curran, and Bauer's (2006) methods. All significant interactions were graphed and simple slopes were calculated at  $\pm 1$  SD from the mean (Aiken & West, 1991) to represent low and high values of emotional inexpressivity. Effect sizes (Pearson's  $r$ ) were calculated as suggested by Kenny et al. (2006) to account for the interdependence of couples' data. Effect size estimates of  $r = 0.1$ ,  $r = 0.3$ ,  $r = 0.5$  represent small, medium, and large effect sizes, respectively (Cohen, 1988).

## Chapter 3

### Results

#### Descriptives

Table 1 presents descriptive statistics and bivariate correlations among study variables. Twelve (21.1%) men and twenty-nine (50.9%) women met full DSM-IV criteria for a PTSD diagnosis. Within the entire sample, 37 couples had only one partner who met full or subthreshold DSM-IV PTSD diagnostic criteria, 6 couples had neither partner who met criteria, and 14 couples had both partners who met criteria. Men's PTSD symptom severity was positively correlated with men's IPV perpetration ( $r = .25, p = .06$ ) and women's PTSD symptom severity was positively correlated with women's IPV perpetration ( $r = .33, p < .05$ ). Men's IPV perpetration was strongly, positively correlated with women's IPV perpetration ( $r = .90, p < .001$ ). Men's IPV was also positively correlated with women's PTSD symptom severity ( $r = .33, p < .01$ ), but women's IPV was not significantly correlated with men's PTSD symptom severity ( $r = .18, ns$ ). Men and women's positive inexpressivity were significantly associated ( $r = .44, p < .001$ ). However, the association between men and women's negative inexpressivity was only marginally significant ( $r = .24, p < .10$ ). Within and between partners, PTSD symptom severity and emotional inexpressivity were not significantly correlated.

### Positive Inexpressivity

The final multi-level models for both positive and negative inexpressivity are presented in Table 2. Among men, actor positive inexpressivity significantly predicted IPV perpetration ( $b = 1.03, p < .05$ ), but actor PTSD symptom severity did not ( $b = .00, ns$ ). Actor positive emotional inexpressivity significantly interacted with actor PTSD symptom severity to predict IPV perpetration ( $b = .04, p < .05$ ). The simple slope for low positive emotional inexpressivity was not significant ( $b = .01, ns$ ), but the simple slope for high positive emotional inexpressivity was significant ( $b = .02, p < .05$ ). This indicates that men with greater PTSD symptom severity who are high in positive emotional inexpressivity perpetrate more IPV (Figure 1, Panel A). Among men, partner positive inexpressivity did not significantly predict IPV perpetration, but there was a trend for partner PTSD symptom severity ( $b = .01, p < .10$ ). No significant partner interactions among men emerged.

Among women, actor positive inexpressivity significantly predicted IPV perpetration ( $b = .64, p < .05$ ), but there was only a trend for actor PTSD symptom severity ( $b = .01, p < .10$ ). No significant actor interactions emerged. In addition, there were no significant partner main effects or partner interactions among women.

### Negative Inexpressivity

Among men, no significant main effects were present for actor negative inexpressivity or PTSD symptom severity. Actor negative emotional inexpressivity significantly interacted with actor PTSD symptom severity ( $b = -.01, p < .05$ ). The simple slope for low negative emotional inexpressivity was significant ( $b = .01, p < .05$ ), but the simple slope for high negative emotional

inexpressivity was not significant ( $b = .00, ns$ ). This suggests that among men with greater PTSD symptom severity who are low in negative emotional inexpressivity (i.e., men who are *more* expressive of negative emotions) perpetrate more IPV (Figure 1, Panel B). There was no significant main effect for partner negative inexpressivity but partner PTSD symptom severity did predict IPV perpetration ( $b = .02, p < .05$ ). There were no significant partner interactions.

Among women, no significant main effect was present for actor negative inexpressivity but actor PTSD symptom severity emerged as a significant predictor of IPV perpetration ( $b = .02, p < .05$ ). Actor negative inexpressivity significantly interacted with actor PTSD symptom severity ( $b = .04, p < .001$ ). The simple slope for low negative emotional inexpressivity was not significant ( $b = -.01, ns$ ), but the simple slope for high negative emotional inexpressivity was significant ( $b = .04, p < .001$ ). This indicates that women with greater PTSD symptom severity who are high in negative emotional inexpressivity perpetrate more IPV (Figure 2, Panel A). There were no main effects for partner negative inexpressivity or partner PTSD symptom severity. However, partner PTSD symptom severity did significantly interact with actor negative inexpressivity ( $b = .03, p < .001$ ). There was a significant simple slope for high actor negative inexpressivity ( $b = .02, p < .01$ ), but not low actor negative inexpressivity ( $b = -.01, ns$ ). This indicates that women who are high in negative emotional inexpressivity with partners who have greater PTSD symptom severity perpetrate more IPV (Figure 2, Panel B).

**Table 1. Descriptive Statistics and Bivariate Correlations Among Study Variables.**

Variable	<i>M</i>	<i>SD</i>	Range	1	2	3	4	5	6	7	8
1. Men's PTSD Symptoms	23.84	23.09	0-102	--							
2. Men's Physical IPV Perpetration	1.61	5.00	0-30	.25 <sup>†</sup>	--						
3. Men's Positive Inexpressivity	4.72	.30	3.67-5	.18	.17	--					
4. Men's Negative Inexpressivity	4.40	.42	3.33-5	-.18	-.03	-.16	--				
5. Women's PTSD Symptoms	46.84	19.22	0-87	-.20	.33*	-.06	.14	--			
6. Women's Physical IPV Perpetration	3.04	8.29	0-58	.18	.90***	.12	.06	.33*	--		
7. Women's Positive Inexpressivity	4.63	.37	3.44-5	.02	.13	.44***	-.04	.08	.15	--	
8. Women's Negative Inexpressivity	4.21	.55	2.14-5	-.05	-.04	-.19	.24 <sup>†</sup>	.13	.05	-.15	--

*Note.* PTSD = posttraumatic stress disorder. IPV = intimate partner violence.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

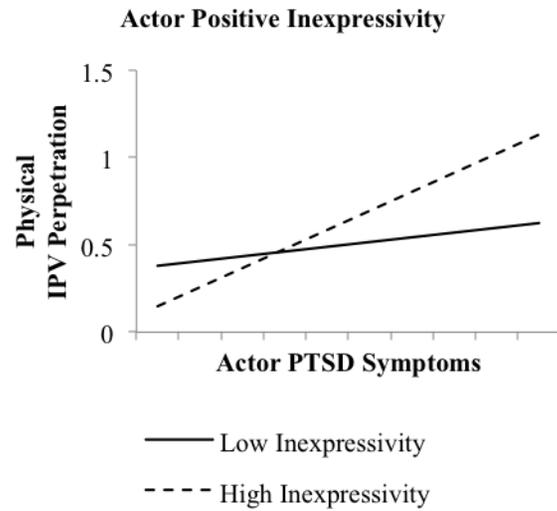
**Table 2. PTSD Symptoms and Emotional Inexpressivity Predicting Physical IPV Perpetration.**

Variable	Men			Women		
	<i>b</i>	<i>t</i>	<i>r</i> <sub>adj</sub>	<i>b</i>	<i>t</i>	<i>r</i> <sub>adj</sub>
<i>Positive Inexpressivity</i>						
Intercept	.23	2.43*		.63	4.61***	
Actor PTSD	.00	.72	.12	.01	1.76 <sup>†</sup>	.28
Partner PTSD	.01	1.93 <sup>†</sup>	.31	.01	.83	.13
Actor Positive Inexpressivity	1.03	2.31*	.28	.64	2.26*	.27
Partner Positive Inexpressivity	.06	.28	.04	-.16	-.41	-.05
Actor PTSD * Actor Positive Inexpressivity	.04	2.41*	.29	--	--	--
<i>Negative Inexpressivity</i>						
Intercept	.30	3.14**		.60	4.31***	
Actor PTSD	.01	1.53	.25	.02	2.38*	.37
Partner PTSD	.02	2.21*	.35	.01	1.30	.21
Actor Negative Inexpressivity	-.17	-.69	-.09	-.05	-.25	-.04
Partner Negative Inexpressivity	-.18	-1.01	-.14	-.38	-1.21	-.17
Actor PTSD * Actor Negative Inexpressivity	-.01	-1.99*	-.27	.04	4.28***	.51
Partner PTSD * Actor Negative Inexpressivity	--	--	--	.03	3.99***	.49

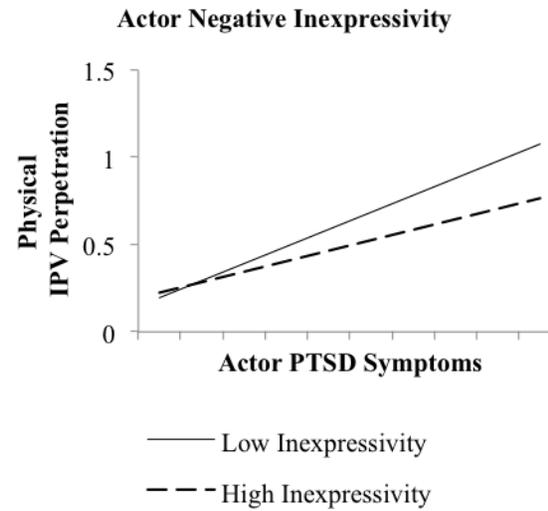
*Note.* PTSD = posttraumatic stress disorder. IPV = intimate partner violence. *b* = unstandardized beta coefficient. *r*<sub>adj</sub> = effect size *r* adjusted for the interdependence between men and women.

<sup>†</sup> *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

Panel A

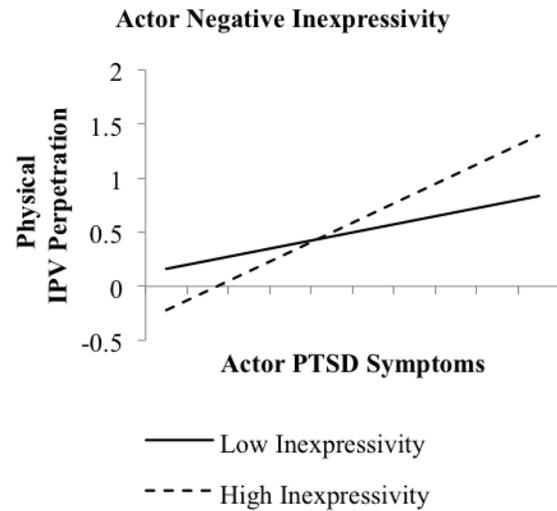


Panel B

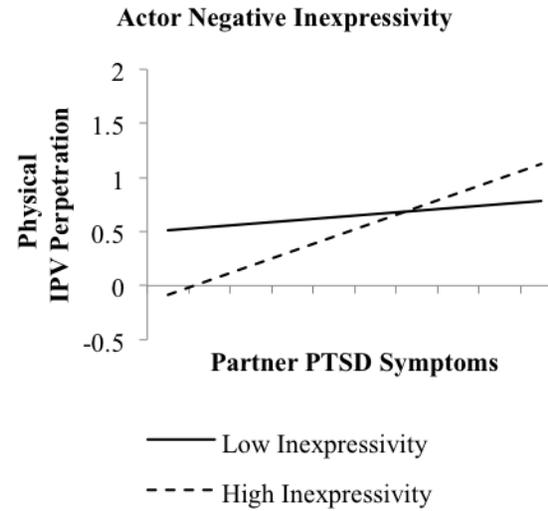


**Figure 1. Among men, actor's positive (Panel A) and actor's negative (Panel B) emotional inexpressivity moderate the effect of actor's PTSD symptoms on IPV perpetration.**

Panel A



Panel B



**Figure 2. Among women, actor's negative emotional inexpressivity moderates the effect of actor's PTSD symptoms (Panel A) and partner's PTSD symptoms (Panel B) on physical IPV perpetration.**

## **Chapter 4**

### **Discussion**

We examined the dyadic level of communication in couples to determine how emotional inexpressivity and PTSD symptoms interact to impact IPV perpetration. This study builds upon prior literature by extending research on emotional inexpressivity, PTSD, and aggression to IPV perpetration. At the methodological level, we advanced upon commonly used, often biased self-report measures of emotional inexpressivity (Robinson & Clore, 2002) by using a naïve observational coding system that explored a novel method of coding time points during which participants retroactively identified experiencing an emotion. In addition, this system allowed us to capture greater specificity in emotional inexpressivity by examining valence (i.e., inexpressivity of both positive and negative emotions). While some individuals may, in general, be emotionally inexpressive overall, others may be inexpressive of positive emotions and expressive of negative emotions or vice versa; therefore, exploring heterogeneity among inexpressivity provides additional and important information to the processes of PTSD and IPV among couples. At the theoretical level, this study contributes to models relating PTSD symptoms to IPV perpetration as well as the role of emotions in overall relationship processes. To date, research has focused on how hyperarousal symptoms largely account for the variance in IPV perpetration among those with PTSD (Taft et al., 2011); however, our results suggest that

there are additional social-affective components of PTSD at the dyadic level that influence this relationship and deserve further empirical attention.

At the within-person (actor) level, we found that, among men with greater PTSD symptom severity, those who are more inexpressive of positive emotions perpetrate more IPV. This finding, in the context of the broader literature on intimacy behaviors, underscores the importance of the expression of positive emotions in healthy relationships (Rauer & Volling, 2005) and in conveying successful intimacy interactions among partners (Reis & Shaver, 1988). Prior research has indicated that individuals with PTSD show decreased intimacy behaviors (Hanley et al., 2013) and increased fear following the receipt of partner's intimacy behaviors (Leifker, Hanley, Blandon, & Marshall, 2015). The influence of positive emotional inexpressivity and PTSD on IPV perpetration could potentially be tied with how men perceive and respond to intimacy behaviors. Additionally, the lack of expression of positive emotions among men (even those without elevated PTSD symptoms) is associated with increased IPV perpetration. In contrast, we found that for men with greater PTSD symptom severity, those who are less inexpressive of negative emotions (i.e., *more* expressive of negative emotions) perpetrate more IPV. This finding contradicts the results of Tull and colleagues (2007), but this could be due to the fact that they did not take into account the valence of emotional inexpressivity, nor did they consider emotional inexpressivity within the context of the victim of violence. Consistent with prior work indicating that hyperarousal symptoms of PTSD drive IPV perpetration (Taft et al., 2011), an underlying mechanism of this finding could be that the greater expression of negative emotions is associated with greater physiological arousal (Kring & Gordon, 1998), which then increases the risk of IPV perpetration. Thus, men with more severe PTSD symptoms

who express more negative emotions may have increased physiological arousal that leads to increased IPV perpetration.

Conversely, among women with greater PTSD symptom severity, those who are more inexpressive of negative emotions perpetrate more IPV. Interestingly, the effect of negative inexpressivity on IPV perpetration among women with more severe PTSD symptoms is opposite that of men, demonstrating gender differences in these associations. Generally, this finding supports our original hypotheses and indicates that for women, not expressing, or “bottling up,” negative emotions could result in an outburst of IPV perpetration. One mechanism by which inexpressivity could lead to IPV perpetration could be due to greater physiological arousal among those who are *not* expressing emotions (Gross & Levenson, 1993, 1997; Butler et al., 2003). We found similar positive main effects for positive inexpressivity among women as we did among men, further indicating that beyond the influence of PTSD symptom severity, not expressing positive emotions is associated with increased IPV perpetration.

At the partner level, women who are more inexpressive of negative emotions and have partners higher in PTSD symptoms perpetrate more IPV. Although not measured in the current study, these results suggest that caregiver burden, hypothesized as a potential mechanism for increased relationship problems among those with PTSD (Monson et al., 2009), could be implicated within IPV perpetration among those with partners who have PTSD. Our finding could potentially be due to the fact that women with partners who have PTSD may not feel comfortable expressing negative emotions because they do not want to upset their partner. This motivation could be due to either their concern over adding additional strain on the relationship by conveying negative emotions or to women’s prior experiences of IPV, which is more likely to occur among their male partners with PTSD. However, in turn, this process could have more

detrimental than protective effects by leading to higher levels of IPV perpetration. This finding again underscores the importance of healthy communication of negative emotions among women with partners who have PTSD to avoid “bottling up” those feelings as well as the utility in considering caregiver burden among couples’ therapy for PTSD. Interestingly, in the negative inexpressivity model, we found a main effect of partner PTSD symptoms when predicting men’s IPV perpetration. It is possible that women’s PTSD symptoms may result from men’s IPV perpetration.

These findings, taken together, indicate that for individuals with more severe PTSD symptoms, deviations in patterns of “typical” emotional responding could delineate situations where IPV is more likely to occur. Research demonstrates that women express more emotions (in general and for both positive and negative valences) than men (Kring & Gordon, 1998; Notarius & Johnson, 1982; Rauer & Volling, 2005). These emotional patterns delineate general responses that men and women experience in everyday environmental situations. However, during conflict with one’s romantic partner, emotions can fluctuate and vary in intensity in relation to the topic of the discussion. When men express more negative emotions than usual and women express less negative emotions than usual, this response signifies a disruption in their general emotional response to the situation. Thus, when men and women become angry or upset during conflict, the way emotions are expressed or not expressed has important implications for men and women’s propensity to perpetrate IPV. Within the context of emotional numbing symptoms that are characteristic of PTSD, these emotional fluctuations could be less visible at the behavioral level and thus could potentially explain a mechanism by which conflicts among couples where at least one partner has PTSD are more likely to escalate into violence.

Understanding and further exploring the differential effects of expression and inexpression of both positive and negative emotions, particularly among those with PTSD, is warranted.

The interpretation of these findings necessitates the consideration of several limitations to this research. First, this study was cross-sectional in nature and, therefore, our results do not establish any causal mechanisms. Thus, our findings cannot substantiate that emotional inexpressivity causes IPV perpetration among those with greater PTSD symptom severity. Some potential mechanisms have been considered, yet future experimental research should examine these mechanisms in a direct and specific manner. Relatedly, any results that were significant could be, in fact, due to prior experiences of IPV rather than the specific constructs measured. Second, while naïve observational coding provided a unique methodology to measure emotional inexpressivity, further empirical investigation of the approach is needed to identify the most ideal and reliable methods. Specifically within our study, coders may have paid more attention to the valence of the spoken content in the video interactions rather than the degree of expressivity. While this approach did not rely on self-report of emotional inexpressivity, the time points coded were self-identified by participants and therefore are subject to bias. Individuals could have identified points where they felt an emotion while reviewing their relationship discussion rather than an emotion they actually felt during the discussion. Also, the construct of emotional inexpressivity, as measured in this study, does not indicate whether or not inexpression was due to emotion regulation (i.e., expressive suppression; see Gross, 2015 for a review) or to an individual's tendency to not express emotions in general (i.e., emotional inexpressivity). Third, predictive power for the study was low due to a lack of large variability in inexpressivity, a small sample size that opens up the possibility of Type I errors, and participants identifying few time points. Additionally, our use of a backward elimination method in examining multiple actor by

partner interaction models may have resulted in spurious effects due to chance. Overall, the generalizability of these findings must be put into context by keeping in mind that emotional responding during negative discussions in-lab may not directly translate to emotional responding patterns of couples during real conflicts that turn violent.

Despite these limitations, the findings of this study have important implications for clinical work, specifically individual and couple's therapy for individuals with PTSD. Our results suggest that emotional inexpressivity during conflict discussion is related to IPV perpetration among those with PTSD in a functional form. This study highlights the usefulness of identifying patterns of emotional responding that could attune individuals to situations where they may find themselves more likely to perpetrate IPV towards their partners. While this would vary on the individual level, generally this would entail educating both men and women who have PTSD that instances of emotional expressivity or inexpressivity could increase the likelihood of IPV perpetration. Our previous work suggests that the provision of intimacy behaviors may work to decrease negative emotions of couples with PTSD after conflict discussions (Leifker et al., 2015), and therefore therapeutic strategies aimed at promoting the provision of intimacy behaviors could potentially help to buffer abnormal emotional responding, and therefore may reduce IPV perpetration. Additionally, intervening with these concerns at the dyadic level, particularly among women who have male partners with PTSD, could help to reduce violence within relationships. Overall, it is important that clinicians consider emotion-focused therapy strategies among individuals and couples with PTSD to bring awareness to their patterns of emotional responding, highlighting the need to address and consider all aspects of PTSD symptomatology within treatment to not only treat the disorder itself but to potentially buffer any negative relationship outcomes associated with PTSD.

The current study is the first to specifically examine the role of emotional inexpressivity and PTSD on IPV perpetration by gender. By exploring actor and partner effects of these processes within relationships, we are able to better understand how these processes operate at the dyadic level of communication. We therefore lay the groundwork for future studies to analyze potential mechanisms of these associations and functional relationships more specifically. Future studies should consider the collection of physiological data of arousal symptoms during inexpressivity and the use of a microanalytic coding system to more specifically analyze types of emotions that could lead to more IPV perpetration. New methods of measuring IPV and aggression perpetration, beyond self-report, should be explored (e.g., coding instances of aggression within videotaped interactions) to address issues of underreporting. Replication of the study's findings is also needed to see if findings remain stable in other samples. Beyond understanding the basic processes of emotional inexpressivity, PTSD, and IPV perpetration, future work should focus on how to best incorporate information about emotional responding patterns to treatment and intervention approaches aimed at curtailing the unfortunately strong and persistent negative effects of PTSD symptoms on relationships.

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Sullivan, T. J. (Apr. 2015). *Do sexual assault survivors differ in treatment outcomes among college students?* Poster presented at the Annual Psi Chi Research Conference, University Park, PA.

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2015

Petracca French Travel Grant, \$445	2014
Liberal Arts Enrichment Funding, \$1500	2014
Pennsylvania Ready-to-Succeed Scholarship, \$2000	2014 – 2015
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## **HONORS/AWARDS**

College of the Liberal Arts Student Marshal	December 2015
Paterno Fellows Program	2012 – present
Schreyer Honors College	2013 – present
Psi Chi Psychology Honors Society	2014 – present
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President Sparks Award	2014
President's Freshman Award	2013
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## **WORK EXPERIENCE**

<b>Crisis Hotline Counselor Training Instructor</b> Community Help Centre, State College, PA	August 2014 – present
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