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Posttraumatic Outcome of Intimate Partner Violence: An Examination of Risk Factors

Joye L. Henrie
University of Arkansas, Fayetteville

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by

Joye Henrie
University of Utah
Bachelor of Science in Psychology and Sociology, 2008
University of Arkansas
Masters of Arts in Psychology, 2011

December 2014
University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

_____
Patricia Petretic, Ph.D.
Dissertation Director

_____
Jeffery M. Lohr, Ph.D.
Committee Member

_____
Brenda Zies, Ph.D.
Committee Member

Abstract

Not all individuals who experience intimate partner violence (IPV) victimization experience clinically significant negative outcomes following IPV exposure. For those that do experience negative outcomes, researchers need to identify the mechanisms through which they develop and the manner in which negative symptoms may develop differentially across individuals. This paper provides a review of risk factors associated with negative outcomes following IPV victimization. Accumulated lifetime maltreatment experiences and maladaptive cognitions are both proffered as potential risk factors for Post-traumatic Stress Disorder (PTSD) outcomes following IPV exposure. A community sample (N = 244) of adult females was recruited to assist in elucidating the relation between IPV victimization and PTSD symptomatology. IPV victimization and PTSD symptomatology were found to be significantly associated. Childhood maltreatment experiences and maladaptive cognitions were hypothesized to mediate the relation between IPV victimization and PTSD symptomatology, a hypothesis which the results of the study supported. Multiple post-hoc analyses were conducted to further delineate these associations, and directions for future research, including research design accommodation of the new DSM-5 criteria for PTSD, are discussed.

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I. Introduction

Posttraumatic stress disorder (PTSD) and depression are common outcomes of IPV victimization (e.g., Bean & Möller, 2002; Leiner, Compton, Houry, & Kaslow, 2008; Wilson et al., 2011). Evidence exists that PTSD might create diatheses for the development of subsequent disorders (Friedman & Yehuda, 1995), which suggests depression may arise secondary to PTSD following IPV victimization. Thus, the mental health outcome focus of this study will be PTSD symptomatology. There is a substantial variability in the outcome of IPV exposure (e.g., Dutton, 1996; Golding, 1999), such that some individuals develop PTSD symptoms, whereas others do not. This variability underscores an important area in which the research base needs further development to identify how and when these differences occur. A respectable number of studies exist that examine how multiple predictor variables work in tandem to interact with post-IPV PTSD symptomatology, yet some of these studies investigate rather disparate predictor variables or fail to include important variables identified as reliable predictors in prior research. Thus, this paper reviews prior investigations of two promising predictor variables (i.e., accumulated lifetime maltreatment experiences and maladaptive cognitions) and examines the hypothesis that these variables might operate in tandem to exponentially predict PTSD symptomatology.

A. Intimate Partner Violence

IPV is defined by the Centers for Disease Control as "physical violence, sexual violence, threats of physical or sexual violence, stalking and psychological aggression (including coercive tactics) by a current or former intimate partner" (Black et al., 2011, p. 37) and is often used interchangeably with "interpersonal violence," "domestic violence," or "partner abuse." This paper will use the same definition of IPV, with the acknowledgement that referenced studies may use somewhat different definitions for criteria for their respective participant inclusion.

IPV is a pervasive problem with substantial costs to society, and multiple indices indicate that women are disproportionately victimized by IPV and sustain more frequent and severe injury. A recent epidemiological study in the United States (U.S.) indicated that approximately 25% of women and 14% of men are the victims of some form of IPV in their lifetime (Breiding, Black, & Ryan, 2008). Similarly, CDC findings indicate that 3 in 10 women (compared with 1 in 10 men) have been victimized by intimate partners (Black et al., 2011). Women experience more than 5 million incidents of IPV victimization yearly [National Center for Injury Prevention and Control (NCIPC), 2003]. The annual national cost of medical services, mental health services, and loss of productivity related to IPV is estimated to be $5.8 billion (Breiding et al., 2008; NCIPC, 2003).

For U.S. females only, IPV has been estimated to account for 1,300 deaths annually (Breiding et al., 2008), though more recently, this number was estimated at over 1,600 (NCIPC, 2012). Approximately 70-77% of all IPV-related homicide victims are women (Breiding et al., 2008; NCIPC, 2012). Women sustain an estimated 2 million injuries from IPV yearly (Breiding et al., 2008). Annually, IPV accounts for almost 4 million medical visits and over 18 million mental health visits by women (NCIPC, 2003), and women who have been victimized by IPV report poor health at a rate three times that of their peers (Black et al., 2011). Rivara et al. (2007) found that healthcare utilization for victims of IPV was significantly higher than for nonvictims. Even 5 years after the IPV had ended, former victims of IPV continued to utilize healthcare services at rates significantly disproportionate to their non-IPV exposed counterparts (Rivara et al., 2007). Additionally, women in the U.S. lose an estimated 8 million days of paid work each year as a result of IPV, as well as almost 6 million days of unpaid work, such as household responsibilities (NCIPC, 2003).

Given the vastness of available literature and data on the epidemiology of IPV today, it is bewildering to consider how rarely the topic was discussed (much less, the topic of publication) just a few decades ago. To better understand the current state of IPV literature, it is worthwhile to explore its historical context before proceeding into contemporary findings.

1. History of IPV research. Whereas the literature on Intimate Partner Violence (IPV) is diverse, it is chaotic in terms of postulating viable conceptual models. This literature lacks clarity and cohesion (Berscheid & Regan, 2005) for a number of reasons, one of which is a paradigmatic notion that causal models are most appropriately placed in the prediction of perpetration. Thus, most existing IPV-related conceptual models attempt to predict perpetration. Few causal models examine victimization outcomes, because, in part, this type of research has been criticized as "victim blaming" (Dutton, 1992; Walker, 1979). Straus (2011) has noted that impassioned opinion has fueled controversy in the field for over 30 years – essentially the lifetime of IPV as a stand-alone research area. Berscheid and Regan (2005) assert that public policy and the ability of research findings to provoke controversy interferes with the natural progression of the science of IPV. A potential indirect consequence of this proverbial scientific stalemate is a literature lacking in conceptual models related to victimization more broadly, including models that predict negative psychological outcomes following victimization.

Historically, IPV (i.e., its functional output) was portrayed syndromally, rather than diagnostically. The term "Battered Wife Syndrome" made its appearance in the late 1970s and was primarily conceptualized as a syndrome resulting in learned helplessness or "psychological paralysis" (Dutton, 1996; Walker, 1979, p. 43). Perhaps due to the lack of meaningful public and professional attention to the topic, early analyses of the etiology (both perpetration and victimization), maintenance, and trajectory of IPV exposure were decidedly feminist in nature

(e.g., Walker, 1979). Thus, relevant investigations were often categorized as women's or feminist issues, thereby implying that IPV was not a worthwhile research endeavor beyond the boundaries of feminist radicals. Nevertheless, this era was a necessary first step to promote the topic to the mainstream forum. Additionally beneficial was the emergence of acclaimed conceptual theories (e.g., The Cycle Theory of Violence; Walker, 1979) during this time.

Prior to 1980, the Diagnostic and Statistical Manual of Mental Disorders (DSM) did not include a diagnostic category specific to posttraumatic reactions (Friedman, 2007). Rather, many posttraumatic responses were categorized as adjustment disorders (Friedman, 2007). When the DSM-III was published in 1980, the scope of the PTSD definition was broadened enough to include posttraumatic reactions following IPV exposure (American Psychiatric Association, 1980). Criterion A stated "The person has experienced an event that is outside the range of usual human experience and that would be markedly distressing to almost anyone…" (Dutton, 1992, p. 71), which IPV experts championed as sufficiently broad to capture post-IPV traumatic reactions. The critics still argued, however, that the remaining criteria were insufficient for characterizing the breadth of symptomatology exhibited by individuals following IPV victimization. This is unsurprising, given that the aim of adding PTSD to the DSM-III was to address reactions to disasters (e.g., war, natural disasters, explosions, accidents; Friedman, 2007), not interpersonal violence in the context of intimate relationships. Nevertheless, IPV researchers began to view some presentations of PTSD as a sequela of IPV victimization (e.g., Roth & Coles, 1995; Walker, 1992), and a new era was ushered in – in which post-IPV psychological reactions were increasingly legitimized as responses to recognized traumatic events.

In subsequent years, research in the area of IPV has multiplied exponentially and is no longer relegated to feminist studies. In fact, terms denoting IPV became increasingly gender-neutral (e.g., "intimate partner violence," as opposed to "battered wife"), acknowledging that men and non-wives (e.g., girlfriends, individuals in same-sex relationships) could also be victimized. "Battered Wife Syndrome" is now viewed as something of an archaic term and has largely been relegated to the legal system (i.e., as a defense for homicide following IPV; Dutton, 1996). At the community level, resources for victims have emerged in many settings (e.g., shelters, hospitals, law enforcement, colleges), and the topic has become an increasingly normative part of the population-level discourse. In psychology, the landscape of IPV literature today is patently different than it was in the 1970s, but given the relative infancy of this area, much work remains to build the cultivated knowledge base utilized by other areas of inquiry.

In the last 15 years, there has been an emphasis on models and research which examine variables predictive of perpetration of IPV (e.g., Babcock, Jacobson, Gottman, & Yerington, 2000; Lawson & Malnar, 2011; Mauricio, Tein, & Lopez, 2007; West & George, 1999), co-occurring variables associated with IPV victimization (e.g., Bensimon & Ronel, 2012; Kuijpers, Van der Knaap, & Winkel, 2012; O'Keefe & Treister, 1998), and the phenomenon of mutually perpetrated IPV (e.g., Field & Caetano, 2005; Straus, 2011; Testa, Hoffman, & Leonard, 2011). These research foci are valuable endeavors, as they attempt to delineate the etiology of a problematic phenomenon. There remain many substantial needs in IPV research, however. Namely, there is a relatively limited body of research examining heterogeneous outcomes following IPV exposure, and the existing literature tends to lack clarity, cohesion, and integrated conceptual models.

2. Outcomes following IPV victimization. Repeatedly, studies have found that IPV victimization alone is associated with negative outcomes, such as physical illness (e.g., Bonomi et al., 2006; Coker et al., 2002; Ellsberg, Jansen, Heise, Watts, & García-Moreno, 2008; Higgins & Follette, 2002; Kazantzis, Flett, Long, MacDonald, & Millar, 2000; Nicolaidis, McFarland, Curry, & Gerrity, 2009; Wuest et al., 2010), suicide attempts, intent, or ideation (e.g., Cavanaugh, Messing, Del-Colle, O'Sulliyan, & Campbell, 2011; Leiner et al., 2008; Scott-Gilba, Minne, & Mezey, 1995), and clinically significant ranges of mental health pathology (e.g., Bonomi et al., 2006; Coker et al., 2002; Ellsberg et al., 2008; Golding, 1999; Leiner et al., 2008; Okuda et al., 2011).

In the category of mental health pathology, depression and Posttraumatic stress disorder (PTSD) are cited as common diagnostically-based sequelae of IPV victimization (e.g., Bean & Möller, 2002; Leiner et al., 2008; Wilson et al., 2011). Currently, there is insufficient information to determine which, if either, disorder develops first, but as noted previously, there is evidence that PTSD might create diatheses for the development of subsequent disorders (Friedman & Yehuda, 1995). Specifically, there is substantial overlap in the occurrence of PTSD and depression, and PTSD symptomatology might increase individuals' vulnerability to developing depressive symptoms (Breslau, Davis, Peterson, & Schultz, 2000; Friedman & Yehuda, 1995; Shalev et al., 1998). Additionally, the majority of contemporary research examining mental health outcomes following IPV exposure focus on PTSD (Warshaw, Brashler, & Gil, 2009). Further, the extant literature suggests PTSD following IPV victimization has particularly detrimental effects (e.g., Bergman & Brismar, 1991; Iverson et al., 2011; Kendall-Tackett & Klest, 2009; Krause, Kaltman, Goodman, & Dutton, 2006; Perez & Johnson, 2008; Pico-Alfonso et al., 2006; Sareen et al., 2007), which will be discussed further below. Given

these points, as well as the frequency by which researchers identify PTSD symptomatology in victims of IPV, this study will examine PTSD specifically as an important negative mental health outcome following IPV exposure.

3. Conceptual model of outcomes following IPV exposure. Dutton (1992) proposed a conceptual model (i.e., *Model of Battered Women's Response to Abuse*; see Figure 1) in an attempt to outline women's post-IPV victimization reactions. Of particular strength in Dutton's model is the attempt to highlight pre-trauma factors (e.g., historical, learned, and medical factors), trauma factors (e.g., positive aspects of the relationship), and posttrauma factors (e.g., institutional response; factor terms à la Foa & Meadows, 1998). In other words, Dutton postulated that various mediating variables interact with IPV trauma exposure to predict the course of women's post-IPV trauma reactions. As this paper will attempt to demonstrate, this postulation of Dutton's was quite progressive for 1992, given the lack of mediation of outcome research at the time. While Dutton's model was revolutionary and informative at the time of its publication, it has limited utility today in terms of its specificity (e.g., psychological outcomes, directionality of relations between variables, mechanisms through which outcomes occur). This critique, however, is not meant to distract from the value of Dutton's model, as most areas of psychological science advance, in part, on the backbone of early theoretical models proffered by pioneers of the respective field.

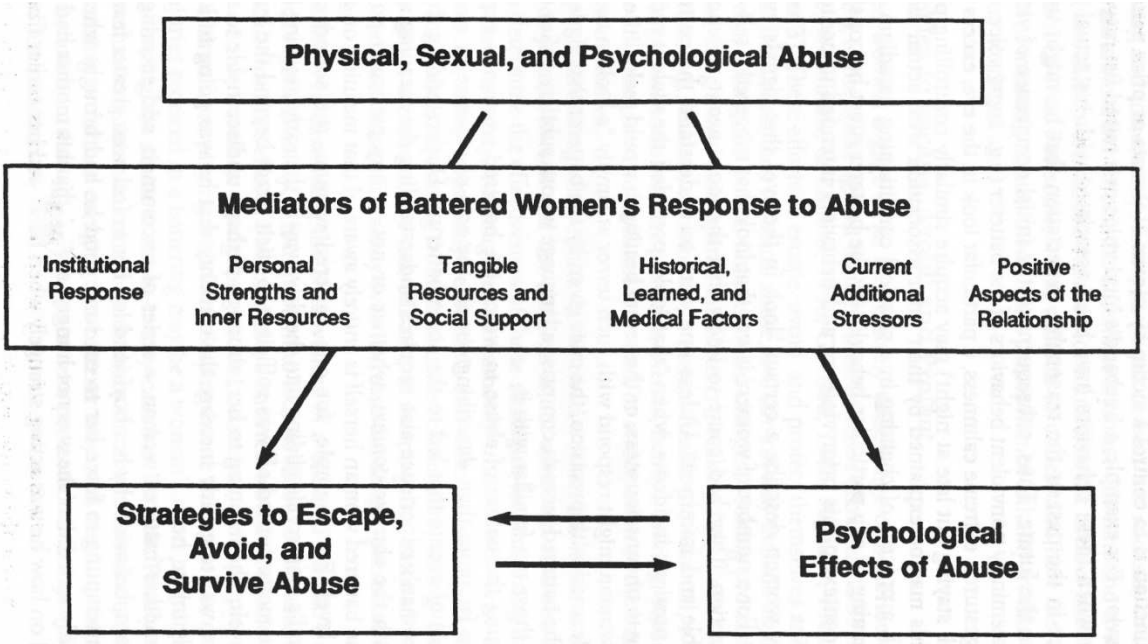

Figure 1. "Model of Battered Women's Response to Abuse" (Dutton, 1992, p. 5).

Dutton's model did not specify syndromes or diagnoses that might exist in the "Psychological Effects of Abuse" category, but in the same publication, she exclusively discussed PTSD in the "Diagnostic Issues" section. She proposed that of symptom clusters outlined in the DSM, the PTSD criteria were the best fit for the post-IPV experiences of victimized women. Dutton's analysis of PTSD was not without criticism, however, as she believed that the diagnostic criteria failed to capture the breadth of post-IPV responses. Nevertheless, her alignment with PTSD as the best fitting symptom cluster is consistent with contemporary literature, which demonstrates PTSD is one of the most common (e.g., Bean & Möller, 2002; Leiner et al., 2008; Wilson et al., 2011) and influential (e.g., Friedman & Yehuda, 1995) psychological reactions to IPV victimization.

As present-day investigators develop hypotheses regarding IPV victimization outcomes, it is judicious to be informed by both Dutton's model and additional conceptual models that have greater specificity and are consistent with existing knowledge about the mechanisms through

which trauma symptomatology emerges. To this end, PTSD and a model that depicts its emergence will be explored further.

B. Posttraumatic Stress Disorder

The DSM-IV-TR criteria for PTSD stated, in part, "The person has been exposed to a traumatic event in which both of the following were present: (1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others [and] (2) the person's response involved intense fear, helplessness, or horror" (American Psychiatric Association, 2000, p. 467; Breslau, 2002). While older editions of the DSM aimed to limit PTSD to specific trauma types (war, natural disasters, explosions, accidents; Friedman, 2007), the DSM-IV version broadened the scope of qualifying traumas (Breslau, 2002). The expanded scope remains a topic of fervent debate (e.g., Friedman, Resick, Bryant, & Brewin, 2011; Friedman et al., 2011). IPV researchers, however, might be a likely group to endorse a diagnostic framework which acknowledges the potential for traumatic outcomes following IPV exposure. Easily, one might see how "a threat to the physical integrity of self," fear, and helplessness might predictably apply to the victims of IPV. Furthering the review of PTSD diagnostic criteria, the DSM-IV-TR characterized the disorder by three symptom groups: re-experiencing of the trauma (e.g., nightmares, flashbacks), avoidance of trauma stimuli, and hyperarousal (e.g., hypervigilance, exaggerated startle response; American Psychiatric Association, 2000; Breslau, 2002). A number of studies have been conducted to assess these symptom outcomes in individuals exposed to IPV, and a brief review of the findings will be presented in following sections.

In 1990, anxiety disorders (i.e., the diagnostic category under which the DSM-IV-TR had classified PTSD) were causal in more than $46 billion in costs to society (American

Psychological Association, 2004). There are few estimates on PTSD-specific costs to society, except in specific subgroups (e.g., veterans). It has been estimated, however, that PTSD accounts for an estimated $3 billion in loss of productivity alone (Kessler, 2000).

According to DSM-IV-TR criteria, the U.S. lifetime prevalence of PTSD is 8.7%, with the highest incidence occurring in individuals with histories of rape, military combat and captivity, and internment and genocide (American Psychiatric Association, 2013). Other sources, however, suggest that the lifetime prevalence of PTSD is even lower (i.e., 1-2%; Kessler, 2000). In contrast, Kessler (2000) reported that over 60% of men and 51% of women have reported exposure to at least one traumatic event, and Ozer et al. (2008) reported that 50% of the general population has experienced a traumatic event. Both reports, when compared with lifetime PTSD prevalence rates, highlight a numerical disparity and suggest that trauma exposure alone is insufficient for predicting PTSD development. These findings beg the question: Why and under what circumstances do clinically significant trauma symptoms emerge in individuals following exposure to a traumatic event? More specifically, what are the mechanisms through which these symptoms develop?

Further dissecting this line of inquiry, women are twice as likely as men to develop PTSD, even when controlling for traumatic events experienced more frequently among females (e.g., rape; Breslau, 2002). Individuals' risk for developing PTSD increases when the experienced trauma type is assaultive violence (Kessler, 2000). Thus, women's disproportionate rate of PTSD development might suggest "a specific vulnerability to the PTSD-inducing effects of assaultive violence" (Breslau, 2002, p. 926). It has been estimated that the lifetime prevalence rate of PTSD among women is 11.3-12.3% (Kessler, 2000), contrasted with the aforementioned 1-8% lifetime prevalence in the general population. This numerical discrepancy highlights a

gender disparity in PTSD development. Given these findings, as well as the tendency for women to be disproportionately affected by IPV, this study investigates females' PTSD outcomes following IPV exposure.

Ozer and colleagues (2008) postulate that there are personal and environmental variables that predict broad PTSD development over and above traumatic event exposure. In their meta-analysis, they identified pretraumatic factors (e.g., prior trauma, prior psychological adjustment, family history of psychopathology), traumatic factors (i.e., perceived life threat during the trauma), and peritraumatic factors (e.g., peritraumatic dissociation, peritraumatic emotional responses, and posttraumatic factors) as factors with significant effect sizes (Ozer et al., 2008). Brewin and colleagues (2000) identified childhood abuse, other previous trauma, other adverse childhood events, psychiatric history, family psychiatric history, trauma severity, lack of social support, life stress, and other demographic variables as significant risk factors for broad PTSD development.

The probability of developing PTSD symptoms has been postulated to covary with severity, duration, and proximity of the individual to the traumatic event (American Psychiatric Association, 2013). In fact, some researchers divide traumatology into two types: acute (single-incident) and chronic (Terr, 1995) and argue that the severity and course of symptomatology varies along these dimensions. Chronic types of traumatology, for example, are more strongly associated with dissociative symptoms, changes in personality, and alterations in coping strategies (Terr, 1995), all of which are indicative of more severe posttraumatic symptom presentations. Brewin and colleagues (2000) conducted a meta-analytic review of risk factors for PTSD development across a broad range of traumas (i.e., those not exclusively related to IPV traumatology) and determined that trauma severity had one of the strongest effect sizes of the

analyzed factors (Brewin, Andrews, & Valentine, 2000). The authors conceded, however, that there was significant variability between studies regarding how severity was assessed, which may impact the validity of the findings. Conversely, an earlier meta-analysis of 50 studies (i.e., examining psychological distress following childhood maltreatment, rape, criminal assault, or IPV) found that perceptive factors (i.e., general appraisal, self-blame, and perceived life threat) were more likely to predict posttraumatic distress severity outcomes than the severity or chronicity of the trauma (Weaver & Clum, 1995). Thus, despite ongoing efforts to determine the mechanisms through which PTSD symptomatology develops, the most reliable predictors of PTSD symptom development remain somewhat unclear, further highlighting a need to delineate the mechanisms through which PTSD symptomatology emerges.

1. Conceptual model of the emergence of PTSD. As noted previously, Dutton's (1992) *Model of Battered Women's Response to Abuse* provides a promising theoretical foundation on which investigators can hypothesize the mechanisms through which psychological distress emerges following IPV exposure. Given the limitations of Dutton's model and limited research from IPV investigators regarding posttraumatic symptomatology development, it is beneficial to explore other research specialty areas in an effort to be informed by their advances and empirically-based conceptual models. Warshaw and colleagues (2009) have advocated for the integration of traumatology models to enhance understanding of psychological outcomes following IPV victimization. To that end, Foa, Steketee, and Rothbaum's (1989) *fear network account of emotional processing* is offered here as a relevant and useful model to conceptualize PTSD development.

Foa and Kozak (1986) set out to explain why exposure therapy was effective in treating anxiety disorders and presented a model of the emotional processing of fear. Their model was

heavily guided by Mowrer's (1947) two-factor theory, which describes negative stimuli avoidance processes as a learning phenomenon, processes which are inextricable from cognitive and neurological processes. Mowrer proposed that stimuli, such as trauma-related stimuli, become associated via both classical and operant conditioning processes. For example, a woman who was sexually assaulted (US) is understandably fearful (UR) following the assault. If she was assaulted by a man wearing a red sweatshirt (CS), the red sweatshirt may result in fear (CR) similar to the assault itself. Once she begins having fear responses to red sweatshirts, she may be motivated to avoid them, and her avoidance of the CS is negatively reinforced, thereby further entrenching avoidance behaviors. Likewise, Foa and Kozak (1986) described schematic networks (much like those Mowrer had proposed) in which antecedents informed subsequent fear-based cognitions and reactions. They divided the elements of these networks into three clusters (see Figure 2): stimulus [i.e., "stimulus information about the feared object(s)"], response [i.e., "information about cognitive, behavioral, and physiological reactions to the feared object(s)], and meaning structures (i.e., "information that links these stimulus and response elements together; Dalgleish, 2004, p. 236). More succinctly, "A fear memory is accessed when a fearful individual is presented with fear information that matches some of the information structure in memory…This information may be about the feared situation, the person's responses in the situation, or their meaning" (Foa & Kozak, 1986).

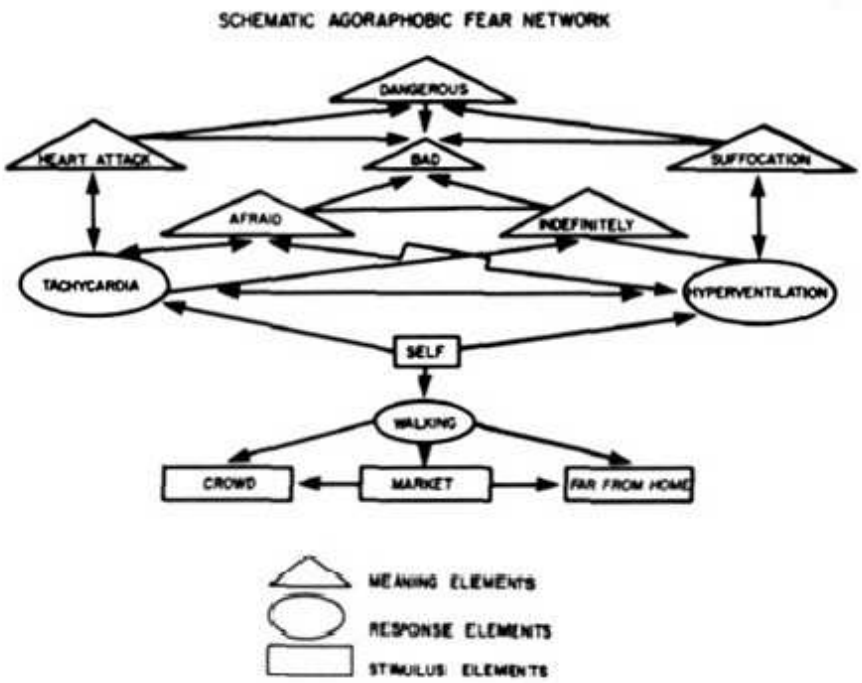

Figure 2. Emotional Processing of Fear (Foa & Kozak, 1986, p. 29).

As a result of this work, Foa and colleagues (1989) proposed a model of fear network processing to explain how PTSD develops (see Figure 3). Departing from the Foa and Kozak (1986) work, Foa et al. (1989) suggested that a fear network associated with trauma is larger and more complex than that of other anxiety disorders. This work was heavily informed by Peter Lang's work on pathological anxiety, in which he "proposed that stimuli that are fear-relevant are arranged and stored in highly organized, semantic, fear networks in memory. Information about cues that elicit fear; information about cognitive, motor, and psychophysiological responses; and information about the meaning of cues and responses are all part of these networks. Fear stimuli activate these networks and all its related components" (Cash & Weiner, 2006, p. 72).

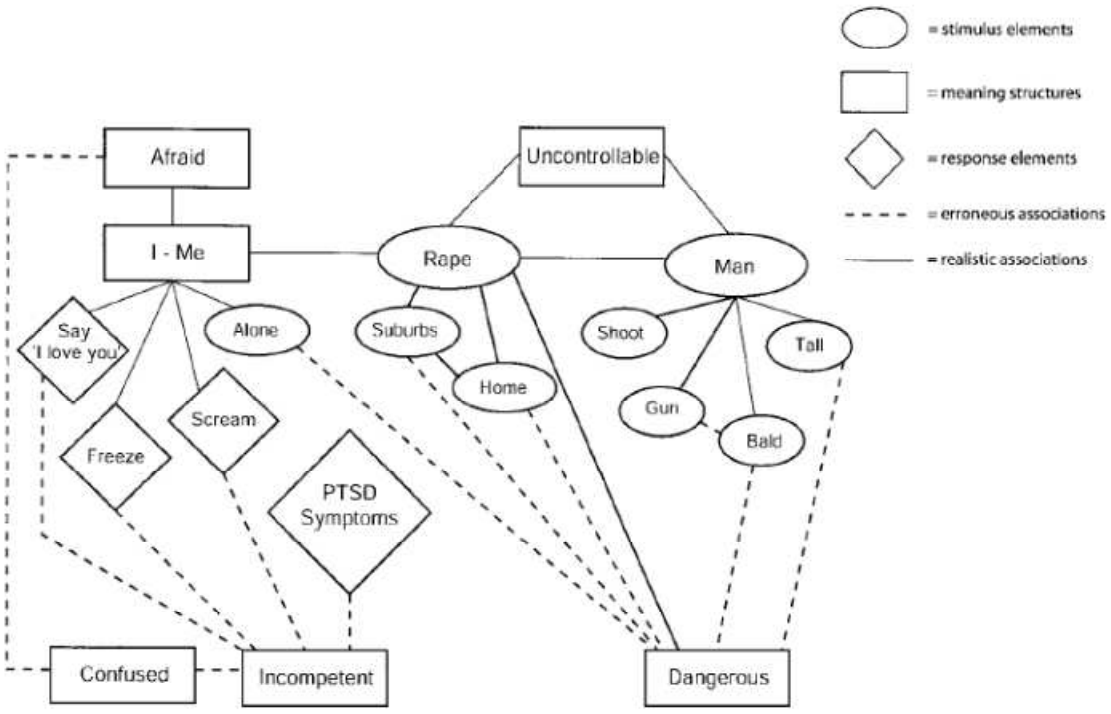

Figure 3. Foa et al.'s (1989) "Schematic Representation of a Fear Network Following Rape" (Dalgleish, 2004, p. 237).

Though not explicitly developed with IPV in mind, the Foa et al. (1989) model provides a means for conceptualizing PTSD development following IPV victimization. The model also allows for a flexible, yet research-based, means of depicting idiographic pathways through which variability of outcomes can be explained. As stated succinctly by Dalgleish (2004), "Network theory deals with a number of individual difference factors in posttrauma response. Pretrauma psychiatric history, previous experience of trauma and trauma severity can all serve to potentiate the fear network that is established…Foa and McNally (1996) also suggested that the predominance of other emotions, such as guilt and anger, that are based on appraisals of the traumatic event can interfere with recovery because they may not extinguish in the same way that fear does" (p. 237). IPV investigators can perhaps extrapolate from this model as an informed means of more specifically conceptualizing the development of PTSD symptomatology and its etiological pathways following IPV victimization.

2. PTSD symptomatology among victims of IPV. Kessler (2000) reported that individuals' risk for developing PTSD increases when the experienced trauma type is assaultive violence. In fact, PTSD following assaultive violence, as opposed to other types of traumatic events, tends to be more chronic, lasting up to three times as long (Warshaw et al., 2009). As mentioned previously, Breslau (2002) noted that research findings suggest that women appear to exhibit "a specific vulnerability to the PTSD-inducing effects of assaultive violence" (p. 926), thus emphasizing the importance of examining PTSD development in women, within the specific context of IPV victimization.

3. Prevalence of PTSD following IPV victimization. Specific to post-IPV trauma symptoms, a meta-analysis revealed that approximately 64% of female victims of IPV experienced PTSD symptoms (Golding, 1999). Astin and colleagues (1995) compared battered women with non-battered, but maritally-distressed women and found that there was a significant difference in PTSD symptoms between the two groups. Of the victims of IPV, 58% were experiencing PTSD symptoms, whereas only approximately 19% of the non-battered, maritally-distressed women were (Astin, Ogland-Hand, Foy, & Coleman, 1995). Bean and Möller (2002) found a similar rate (59%) of PTSD symptomatology in victims of IPV. More recently, mean prevalence rates across studies have been figured to be 61% (Warshaw et al., 2009). These studies demonstrate a relatively consistent rate (i.e., 58-64%) of PTSD development in women following IPV victimization. In contrast, the lifetime prevalence rates of PTSD among women in the general population are 1.3% to 12.3% (e.g., Golding, 1999; Kessler, 2000), despite 51% of women in the general population endorsing exposure to a traumatic event (Kessler, 2000). These findings highlight a disparity in PTSD development between female victims of IPV and the general female population.

4. Outcomes of PTSD symptomatology following IPV. Given the relatively high risk of developing PTSD following IPV victimization [i.e., compared with exposure to other types of traumatic events (e.g., Kessler, 2000; Ozer et al., 2008)], it is important to understand the consequences of PTSD as a sequela of IPV exposure. PTSD outcomes following IPV have been linked with a range of adverse outcomes, including suicidality (e.g., Bergman & Brismar, 1991; Pico-Alfonso et al., 2006), negative physical health outcomes (e.g., Kendall-Tackett & Klest, 2009; Sareen et al., 2007), and future interpersonal victimization (e.g., Iverson et al., 2011; Krause et al., 2006; Perez & Johnson, 2008).

A study by Seedat, Stein, & Forde (2005) indicated that of participants who had ever been a victim of partner abuse, 23% had made at least one suicide attempt, whereas only 3% of the comparison group had made an attempt. In a meta-analysis, Golding (1999) calculated a weighted mean prevalence of approximately 18% for suicidality in female victims of IPV. Importantly, a study conducted by the Centers for Disease Control revealed that PTSD mediated the link between IPV and suicidality (Thompson et al., 1999).

Contemporary research has begun to demonstrate that traumatic experiences have important long term physical health implications (e.g., Kendall-Tackett & Klest, 2009; Sareen et al., 2007). Broadly, PTSD has been linked with cardiovascular disease, respiratory disease, chronic pain, gastrointestinal illnesses, and cancer (e.g., Sareen et al., 2007). Chronic stressors, including those associated with trauma exposure, appear to have an insidious, corrosive effect on the immune system (Groër, Meagher, & Kendall-Tackett, 2010; Woods et al., 2005). IPV victimization, specifically, has been linked with a heightened risk for the development of cardiovascular disease (Kendall-Tackett, 2007), type-2 diabetes (Kendall-Tackett, 2007), and chronic pain (Kendall-Tackett, Marshall, & Ness, 2003). Woods and colleagues (2005) found

that PTSD symptomatology mediated the relation between IPV and pro-inflammatory cytokine levels, which signal elevated inflammatory processes (Woods et al., 2005) and alter cognitive processes (Wilson, Finch, & Cohen, 2002). Similarly, Campbell and colleagues (2008) found that PTSD fully mediated the relation between all types of examined violence, including IPV, and physical health outcomes. A promising finding related to longitudinal outcome, however, is that women who indicated that their IPV victimization had stopped reported having better physical health than women whose IPV victimization continued (Campbell & Soeken, 1999), though the former group's physical health was still worse than that of women who had never experienced IPV. These studies demonstrate that both PTSD and IPV, alone, are associated with poor physical health outcomes and suggest that PTSD symptomatology interacts with IPV exposure to predict negative health trajectories.

Extant research indicates that for past and current victims of IPV, the risk of revictimization is quite high (e.g., Iverson et al., 2011; Krause et al., 2006; Perez & Johnson, 2008). One research group has found that in addition to past IPV, victims' reactions (i.e., depression, PTSD re-experiencing, and substance abuse) to past IPV predict revictimization, though not necessarily intimate partner perpetrated victimization (Cougle, Resnick, & Kilpatrick, 2009). Another group discovered that numbing symptoms (i.e., one feature of PTSD symptomatology) most significantly predicted intimate partner revictimization (Krause et al., 2006), which is consistent with subsequent findings that numbing symptoms reduce individuals' resiliency following IPV exposure (Johnson, Palmieri, Jackson, & Hobfoll, 2007). While these investigations highlight specific PTSD symptoms (i.e., re-experiencing and numbing) as predictors of revictimization, other research has indicated that PTSD in general significantly predicts IPV and IPV severity at follow-up (Perez & Johnson, 2008). Similarly, PTSD

symptomatology was found to predict sexual revictimization among females who had experienced past sexual assaults (Risser, Hetzel-Riggin, Thomsen, & McCanne, 2006). Fortunately, recent research indicates that specified interventions (e.g., cognitive–behavioral therapy) are emerging as effective means to reduce the risk of revictimization (Iverson et al., 2011), further highlighting the importance of identifying, understanding, and effectively intervening in PTSD outcomes following IPV exposure.

C. Predictors of PTSD Outcomes Following IPV

A review of the literature demonstrates that women are disproportionately exposed to IPV (e.g. Black et al., 2011; Breiding et al., 2008), disproportionately develop PTSD following assaultive violence (e.g., Breslau, 2002), have a relatively high risk of developing PTSD symptomatology following IPV victimization specifically (e.g., Golding, 1999; Warshaw et al., 2009), and are at risk for highly undesirable outcomes (e.g., suicidality, health problems, and revictimization) following the development of post-IPV PTSD (e.g., Perez & Johnson, 2008; Thompson et al., 1999; Woods et al., 2005). Despite the high rate (i.e., 58-64%, as indicated previously) of PTSD development following IPV exposure, not all female victims of IPV experience PTSD symptoms. Given the rather severe consequences of PTSD vis-à-vis IPV, it is incumbent upon researchers in the field to identify the mechanisms through which it develops. These mechanisms would then be viable targets of interventions and could also explain why post-IPV PTSD symptoms emerge in some, but not all (Palm & Follette, 2011), individuals exposed to IPV.

A number of studies have attempted to identify the contingencies related to these variable outcomes. For example, Golding (1999) identified a dose-response relationship between IPV and the development of PTSD, such that the severity (i.e., measured with some variability across

studies—including injury sustained, as well as researchers' subjective ratings of events deemed more "severe") and duration of the violence covaried with PTSD development. Bennice and colleagues (2003) generally replicated these findings. In their sample of 62 "battered women," the combination of physical and sexual IPV victimization severity (i.e., as measured by researchers' subjective ratings of events deemed more "severe") significantly predicted PTSD symptom severity. Wilson and colleagues (2011), on the other hand, identified danger perception, poor overall health, abuse leading to pain, victim expectations of future injury victimization, feeling unsafe, and shame as significant predictors of post-IPV PTSD. While each of these indices, as well as others examined and identified have undoubted merit, IPV researchers are likely to benefit from drawing upon and integrating advances in other relevant areas of research, particularly when the other area of research has benefitted from greater maturation in the scientific arena. At the time of this writing, Foa and colleagues' (1989) model for explaining PTSD as associative fear networks has been cited 512 times in PsycINFO, and its successor (i.e., *Emotional Processing of Fear*; Foa & Kozak, 1986) has been cited 1,553 times. These models are regarded as gold standards in the conceptualization of fear and anxiety (Dalgleish, 2004) and have heavily informed subsequent research and intervention. Given the conceptual underpinnings (à la Mowrer, 1947) of the PTSD model, it should translate well to PTSD that emerges following IPV victimization.

First, Foa et al. (1989) indicated that there are stimulus elements in the fear network. For trauma-exposed individuals, these stimuli become data points that are representative of how the world operates. The more exemplars, the more likely the stimulus is to be activated with the appropriate prime. While this is a feature of PTSD responses more broadly, it could explain why some studies have indicated that child maltreatment experiences are the greatest predictor of

PTSD following adult IPV exposure (e.g., Graham-Bermann, Sularz, & Howell, 2011). Early trauma experiences, such as child maltreatment, activate their own fear network with associated stimulus elements. These networks are embedded in the memory and can potentially be reactivated, further solidified, and/or compounded by later traumatic event exposure. Further, the stimulus elements associated with both trauma exposures may become tethered to the same fear network, as both are forms of interpersonal violence. Thus, the combination of childhood maltreatment and adulthood IPV victimization might beget a particularly complex and entrenched fear network.

Second, Foa et al. (1989) identified response elements (i.e., cognitive, behavioral, and/or physiological responses) within the larger fear network. If a woman has experienced tachycardia, for example, when her abuser physically assaulted her, future benign episodes of tachycardia (e.g., associated with exercise, a loud noise in the grocery store, etc.) can cue cognitions of danger or terror in situations where such cognitive responses are incongruent with or not functional in the immediate environment. Similarly, hypervigilance and hyperarousal could have served as safety mechanisms for a woman while still in an abusive environment. In theory, the utility of these responses is significantly diminished, however, once she is removed from the abusive environment. Nevertheless, these seemingly involuntary responses can persist in nonthreatening environments. Foa and Kozak (1986) proffered that fear becomes pathological when excessive and easily cued response elements exist. One might speculate that responses incongruent with the current environment and circumstances would qualify as "excessive."

Finally, Foa et al. (1989) stated that meaning structures are the pieces of information that bind the stimulus and response elements together. Broadly, researchers have found that there is a strong association between negative cognitions and PTSD symptoms (e.g., Belsher, Ruzek,

Bongar, & Cordova, 2012) and between cognitive schemas, rumination, and posttraumatic growth (e.g., Greenberg, 1995; Shiri, Wexler, & Kreitler, 2010; Wright, Collinsworth, & Fitzgerald, 2010), indicating that cognitive variables are important in the conceptualization of PTSD. These findings are consistent with the role of response elements identified by Foa et al. (1989). Following childhood maltreatment, negative views of the self, for example, have been correlated with PTSD symptomatology (Muller, Sicoli, & Lemieux, 2000), which suggests that individuals with child maltreatment histories may have particular cognitive vulnerabilities that predate adult IPV exposure. In a meta-analysis of broad PTSD (i.e., PTSD that is not explicitly tethered to interpersonal forms of violence), self-blame (along with other perceptive factors) was more predictive of PTSD development than the severity or chronicity of the trauma (Weaver & Clum, 1995). The composite of maladaptive cognitions from child maltreatment and adult IPV have the potential to better predict PTSD emergence than either trauma type alone. Conversely, maladaptive cognitions vis-à-vis child maltreatment may either merely be exaggerated by IPV exposure or may create a vulnerability for further maladaptive cognition development following IPV. Thus, it is possible that maladaptive cognitions operate as meaning structures by which individuals come to link together their traumatic experiences and their respective stimuli responses (see Figure 4).

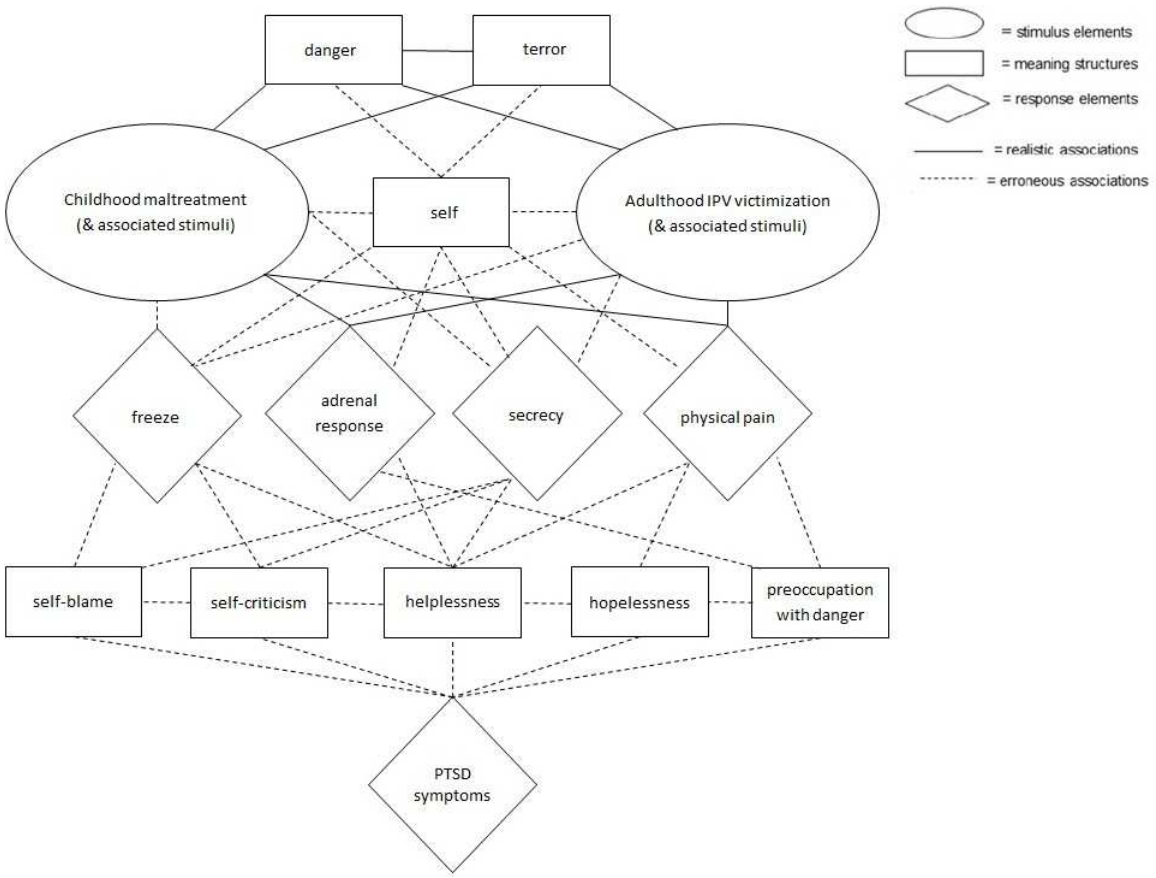

Figure 4. Propositional Fear Network Following Childhood Maltreatment and Adult IPV Victimization. This figure illustrates an example of how childhood maltreatment experiences and maladaptive cognitions can fit within the fear network framework to conceptualize PTSD development following adult IPV victimization.

At the time of this study, no known studies had examined childhood maltreatment experiences and maladaptive cognitions in tandem to investigate their simultaneous additive value in predicting PTSD outcomes following IPV exposure. Thus, further investigation of a model that includes both variables is timely and needed, as PTSD appears to be the sequela of a factor network far more complex than merely IPV exposure. Within the science of IPV, an extensive literature base exists that supports the potential importance of accumulated lifetime maltreatment experiences (e.g., Astin et al., 1995; Kemp, Green, Hovanitz, & Rawlings, 1995; Nicolaidis et al., 2009) and maladaptive cognitions (e.g., Palm & Follette, 2011; Twamley et al., 2009; Wright et al., 2010) in post-IPV trauma symptom development. Given the veracity of the

literature, as well as its "fit" with the Foa et al. (1989) fear network model, this study will examine both of these factors in greater depth, including analyzing their respective contributions to PTSD development following IPV in a sample of research participants. Additionally, this study aims to bridge these predictors to postulate an interactive model of posttraumatic symptom emergence following exposure to IPV.

1. Accumulated lifetime maltreatment experiences. Given that childhood maltreatment and IPV are both forms of interpersonal violence, it would be difficult to accurately consider the impact of either in isolation. Rather, there is likely an interaction effect, which is demonstrated well by Foa and colleagues' (1986, 1989) models of emotional processing within fear networks. Presumably, multiple exposures to interpersonal violence in variant relationships would contribute to a more complex and entrenched fear network, and in line with the original authors' assumptions, more excessive response elements predict more pathological outcomes. These presumptions fit well with Conservation of Resources (COR) theory, which posits, in part, that individuals' personal resources [i.e., instrumental, social, psychological (e.g., self-esteem)] are rapidly depleted following chronic exposure to stressors (e.g., Hobfoll, Dunahoo, & Monnier, 1995; Schumm, Doane, & Hobfoll, 2012). Schumm and colleagues (2012) have recently used COR to explain how the exponential impacts of multiple forms of victimization increase posttraumatic symptomatology. That is, as personal resources are depleted, the individual is less able to maintain previous levels of functioning and adaptive cognitive strategies. Thus, existing prominent psychological theories suggest that there might be a cumulative impact of multiple maltreatment experiences across the lifespan.

Researchers have examined multiple lifetime maltreatment experiences as tandem predictors of negative outcomes. Multiple trauma experiences (e.g., child sexual abuse, child

physical abuse, child emotional abuse, witnessing domestic violence) have indeed been shown to have additive effects on later trauma resulting in undesirable outcomes (e.g., Boney-McCoy & Finkelhor, 1995; Cloitre et al., 2009; Kemp et al., 1995; Martin, Cromer, DePrince, & Freyd, 2011; Samuels-Dennis, Ford-Gilboe, Wilk, Avison, & Ray, 2010; Turner, Finkelhor, & Ormrod, 2006; Wind & Silvern, 1992). Essentially, the effects of a single trauma exposure do not occur in a vacuum in the case of an individual exposed to multiple traumatic events across his or her lifetime. Rather the expression and impact of the effects are exponential.

Cloitre and colleagues (1997) found that "retraumatized" individuals had more severe forms of PTSD symptomatology, including dissociation, alexithymia, and suicidality. Cloitre et al.'s (1997) finding is consistent with Foy's (1992) conceptualization of PTSD, which postulates that independent PTSD-causing events may interact additively to explain the presenting symptomatology. Felitti and colleagues (1998) studied a sample of over 8,000 adults and found that adverse events in childhood were positively related to adult disease occurrence and health risk behaviors. In fact, they identified a dose-response relationship, in which the occurrence of disease and health risk behaviors increased with number of endorsed childhood adverse events. Cloitre and colleagues (2009) found that in a sample of adults, childhood traumatic experiences predicted psychopathology symptom complexity, whereas adulthood trauma did not. In a meta-analytic review by Brewin and colleagues (2000), childhood abuse was found to be a predictive and reliable risk factor for PTSD development in trauma-exposed adults. Such studies suggest a vulnerability to PTSD symptomatology among individuals who have experienced childhood traumas and later have additional trauma exposure. For the purposes of this study, it is necessary to understand whether this vulnerability emerges when the adulthood traumatic event is IPV.

a. PTSD outcomes following childhood maltreatment and subsequent IPV victimization. To consider the viability of including childhood maltreatment experiences in a model of PTSD development following adult IPV trauma, it is important to explore the reliability of co-occurrence of these phenomenon. That is, are these phenomenon experienced by the same individual frequently enough to justify investigation? Breslau (2002) proffered, "Traumatic events are not random" (p. 926). That is, exposure to trauma varies by demographic variables, environmental and familial contexts, and so forth. Research seems to support this notion, as victims of IPV have been found to have significantly higher rates of childhood maltreatment experiences than comparison groups (e.g., Bonomi et al, 2006; Dorahy, Lewis, & Wolfe, 2007; Guerrero, 2006). In one study of women exposed to IPV for example, 53% participants had experienced some form of childhood abuse (Krause et al., 2006).

Childhood maltreatment experiences have specifically been identified as predictors of adult IPV victimization (e.g., DeJonghe, Bogat, Levendosky, & von Eye, 2008; Seedat, Stein, & Forde, 2005; Warshaw et al., 2009; Whitfield, Anda, Dube, & Felitti, 2003). In fact, childhood maltreatment experiences were found to increase the risk of adult IPV victimization by more than threefold over that of individuals who did not experience child maltreatment (Whitfield et al., 2003). While these studies do not suggest that all victims of childhood maltreatment are later victimized by IPV or that all IPV victims have childhood maltreatment histories, studies do demonstrate a tendency for there to be a statistically significant association between the two.

Next, it is important to determine if the intra-individual co-occurrence of childhood maltreatment and adulthood IPV exposure is associated in a meaningful way with the development of PTSD symptomatology. To that end, Astin et al. (1995) found that PTSD was associated with significantly higher rates of childhood abuse endorsement in both women who

had experienced IPV and those who had not experienced IPV but were experiencing marital distress (Astin et al., 1995). More recently, Guerrero (2006) found that IPV in tandem with childhood trauma did not significantly increase the incidence of PTSD (i.e., compared with those who had only experienced adult IPV), but did significantly predict symptom severity. Similarly, Mezey and colleagues (2005) found that early abuse experiences in concert with adult victimization predicted symptom severity. In women that presented in a hospital setting, the combination of childhood abuse and IPV (i.e., over and above either alone) significantly predicted dissociative symptoms (a prominent feature of PTSD) and other anxiety symptomatology, as well as symptom severity (Roberts, Williams, Lawrence, & Raphael, 1998).

Graham-Bermann et al. (2011) examined a broad range of adverse childhood events to determine their potential impact on post-IPV PTSD status. They found that childhood sexual abuse was the single best predictor of PTSD following IPV exposure. Lewis and colleagues (2006) found that childhood emotional abuse mediated the relation between childhood maltreatment experience and post-IPV PTSD. Becker and colleagues (2010) found that both adult IPV and childhood maltreatment were independently associated with PTSD symptomatology, but upon further analyses, the investigators discovered that adult IPV mediated the relation between childhood physical abuse and adult PTSD symptomatology. These studies appear to indicate that childhood abuse experiences might be unique contributors to post-IPV PTSD development, which underscores a need for researchers to consider childhood traumas in models of PTSD following adulthood intimate partner trauma.

2. Maladaptive cognitions. There are few existing studies that specifically examine maladaptive cognitions and cognitive strategies as they relate to posttraumatic stress outcomes following IPV exposure. As noted previously, however, Foa and McNally (1996) suggested

individuals' "appraisals of [a] traumatic event can interfere with recovery because [appraisals] may not extinguish in the same way that fear does" (Dalgleish, 2004, p. 237). Furthermore, broader research exists that notes a strong association between negative cognitions and PTSD symptoms (e.g., Belsher et al., 2012) and between cognitive schemas, rumination, and posttraumatic growth (e.g., Greenberg, 1995; Shiri et al., 2010; Wright et al., 2010). In fact, Weaver and Clum (1995) found that self-blame (along with other perceptive factors) was more predictive of PTSD development than the severity or chronicity of the trauma. Thus, maladaptive cognitions have the potential to be an important factor in PTSD development following IPV exposure.

Currently, the literature examining cognitions in the specific context of IPV is scarce and fragmented. Advances in other research areas, however, can aid IPV researchers in extrapolating findings that are informative for IPV investigations, as there are a number of ways to operationalize and interpret cognitive functioning.

a. Cognitive performance as it relates to traumatic material. At times, the relatedness of findings seems obtuse, but careful consideration of the findings within the larger science reveals important clues for IPV researchers. One study, for example, found that diminished cognitive functioning covaried with PTSD symptomatology in a sample of women in a domestic violence shelter (Dabkowska, 2007). Thus, alterations in cognitive processing that covary with trauma-related material will be briefly reviewed here to highlight theoretical and empirical links between cognitions and trauma.

For example, in a study of medical trainees, participants were exposed to high stress scenarios and were instructed to rate them as either a "threat" or a "challenge," and saliva samples were collected at baseline and following the high stress scenario to assess the

participants' cortisol levels. The investigators found that "threat" perception was positively correlated with cortisol elevations following the high stress scenario, whereas "challenge" perception was not correlated with cortisol levels (Harvey, Nathens, Bandiera, & LeBlanc, 2010). The degree of influence an individual's perception of an event has on subsequent cortisol levels has substantial implications for the criticality of cognitions on various outcomes. This point is further strengthened when it is considered in conjunction with the knowledge that some studies have indicated a significant, positive association between PTSD and cortisol levels (e.g., Gola et al., 2012; Stoppelbein, Greening, & Fite, 2012). Merging this association with the Harvey et al. (2010) findings, it might be postulated that perception modulates the relation between cortisol elevations and PTSD, which implies that maladaptive cognitions have an important role in the development and/or maintenance of PTSD, and this implication is consistent with maladaptive cognitions existing as a response element in Foa et al.'s (1989) model of PTSD fear networks.

It also appears that trauma exposure and/or trauma cues can corrode cognitive functioning, though the permanency of this corrosion has not yet been extensively explored. Freeman and Beck (2000), for example, found cognitive interference in adolescent girls exposed to trauma-related words. Their sample was comprised of girls diagnosed with PTSD following a sexual trauma, as well as a control group. The researchers found, contrary to their expectations, that both the trauma group and the control group demonstrated cognitive interference (i.e., significantly reduced performance) on a Stroop task when exposed to trauma-related words compared with non-trauma words (Freeman & Beck, 2000). Similarly, Hellawell and Brewin (2002) found significant declines in cognitive processing in participants with PTSD following their writing of trauma narratives.

Twamley and colleagues (2009) found that trauma-related dissociation has been associated with poor reasoning performance, and the investigators postulate that these declines in cognitive performance result from trauma-exposed individuals' need to appropriate cognitive resources to internal experiences related to unresolved trauma [i.e., à la Hobfoll's (1995) Conservation of Resources theory]. Interestingly, their findings coincide with research published almost four decades earlier, in which participants demonstrated declines in performance on perceptual tasks following exposure to a film depicting a high stress scenario (Horowitz & Becker, 1972). Some research indicates that cognitive styles or cognitive orientations are associated with trauma disclosure and physiological measures of reactivity to disclosure (Brouwers, Sorrentino, Roney, & Hanna, 2004), further suggesting an expansive, covert cognitive network that is related to one's response to trauma and stress.

The findings that traumatic events and/or material interferes with cognitive performance might aid the field in better understanding one principal feature of PTSD, hyperarousal, which is characterized, in part, by difficulty concentrating. More broadly, these studies suggest that trauma-related material (i.e., experienced or researcher-fabricated trauma) alters individuals' cognitive processes in numerous ways.

b. Maladaptive cognitions following childhood maltreatment. A number of studies regarding trajectories following childhood maltreatment have examined cognitive factors. Since childhood maltreatment (like IPV) is a form of interpersonal violence and is postulated in this paper to contribute to psychological outcomes following IPV, a sample of findings related to childhood maltreatment and cognitive processes is being presented here.

In an adult, retrospective sample, individuals with a negative self-concept were found to be more likely, via cognitive distortions, to have psychopathological symptoms following

childhood maltreatment experiences (Browne & Winkelman, 2007). Likewise, another research group found that negative views of the self were highly correlated with posttraumatic stress symptoms in adults who endorsed child abuse exposure (Muller et al., 2000). A meta-analysis revealed that among adults who reported child abuse histories, self-blame and other perceptive factors predicted posttraumatic distress severity (Weaver & Clum, 1995).

Adolescent research has also revealed important cognitive mechanisms. In a sample of adolescents who had experienced or witnessed violence, maladaptive cognitions and avoidance tactics, a noted feature of PTSD (per the DSM-IV-TR), were prominent (Reid-Quiñones et al., 2011). Another study of adolescents exposed to violence found that these youth were significantly more likely to have cognitions of violence-acceptance than their non-exposed counterparts (Allwood & Bell, 2008), and cognitive efficiency was found to be a significant contributor in a model predicting trauma symptomatology in adolescents with maltreatment histories (Joubert, Webster, & Hackett, 2012).

c. Maladaptive cognitions following IPV victimization. Specific to individuals exposed to IPV, a number of cognitive processing alterations are found in IPV-exposed participants when compared with a control group. IPV-exposed participants have been found to have slower processing speeds, and their processing speeds covary with symptom severity (Twamley et al., 2009). As mentioned in brief previously, a sample of women in a domestic violence shelter were administered the Trail Making Test, a Stroop task, and a verbal fluency task, and the investigators found that diminished cognitive functioning covaried with PTSD symptomatology (Dabkowska, 2007), demonstrating consistency with previously presented findings in broader samples regarding declines in cognitive functioning following exposure to traumatic events or material.

Whereas these cognitive processing impairments are informative and consistent with previously presented findings, maladaptive cognitions and cognitive strategies have also been identified in IPV victim populations. In a sample of women who had recently been victimized their partners, researchers found that cognitive biases were significantly associated with PTSD symptom severity, cognitive bias was negatively associated with self-efficacy, and self-efficacy was negatively associated with PTSD (Lambert, Benight, Wong, & Johnson, 2012). Palm and Follette (2011) found that cognitive inflexibility in concert with experiential avoidance was associated with higher levels of psychological distress in a sample of women exposed to IPV, and at least two additional studies have replicated the findings that experiential avoidance was associated with post-trauma distress levels (Polusny, Rosenthal, Aban, & Follette, 2004; Rosenthal, Polusny, & Follette, 2006).

Pico-Alfonso et al. (2006) found that psychological abuse in intimate relationships was the best predictor of PTSD. While this is not a direct measurement of maladaptive cognitions or impaired cognitive functioning, psychological abuse is largely a cognitive enterprise that is often characterized by verbal insults and attacks on an individual's identity-defining character. The finding that psychological abuse is predictive of PTSD is a logical extension of earlier presented findings that indicate that negative self-concept (Browne & Winkelman, 2007), self-blame (Weaver & Clum, 1995), and poor self-efficacy (Lambert et al., 2012) all have significant associations with PTSD symptomatology. Likewise, Wilson and colleagues (2011) found that danger perception, feeling unsafe, and shame were significant predictors of post-IPV PTSD.

In sum, these studies demonstrate relations between maladaptive cognitions and posttraumatic distress and suggest that cognitive contingencies are a conduit through which psychological distress can emerge. These findings underscore the uniformity in research

outcomes regarding the role of cognitive processes in predicting PTSD following both IPV and other types of traumatic events that are interpersonal in nature.

II. Current Study

Individuals who experience various forms of trauma are at an increased risk for developing PTSD. Women are disproportionately victims of IPV (e.g., Black et al., 2011) and tend to disproportionally develop PTSD (e.g., Breslau, 2002). Not all women exposed to traumatic events develop clinically significant PTSD symptoms, which highlights the disparity between trauma exposure and PTSD development (Ozer et al., 2008). This disparity has similarly been identified in women who are victims of IPV (Golding, 1999), such that approximately 40% of these women do not develop post-IPV PTSD symptoms (Bean & Möller, 2002). Understanding the mechanisms of these heterogeneous outcomes will improve the body of literature utilized to form etiological theory regarding post-IPV PTSD development, and these improvements could directly inform and cultivate more effective intervention strategies and techniques.

Prior researchers have investigated a number of potential mechanisms through which PTSD emerges following broadly-defined traumatic events, and IPV researchers have paralleled this aim by investigating the conditions under which PTSD does or does not develop following IPV victimization. Extant research indicates that childhood maltreatment experiences (i.e., multiple trauma experience accumulation) and maladaptive cognitions appear to be viable predictors of posttraumatic symptomatology following traumatic adulthood experiences. This combination of factors also fits well within Foa et al.'s (1989) acclaimed conceptual model of the role of fear network structures as the influential mechanisms underlying post-trauma PTSD development. Rather than reinvent the proverbial wheel, the science of IPV should seek

illumination from more established fields of research as a means to facilitate a more informed and rapid progression of the science. Needed is a model that elucidates the relation between IPV victimization and PTSD symptomatology development, as well as the mechanisms through which this relation emerges.

As noted previously, Becker and colleagues (2010) were the only known research team to investigate the culmulative impact of childhood maltreatment experiences and adulthood IPV victimization on PTSD outcomes. Since the inception of the current study, Gobin and colleagues (2013) published a study which examined the same set of variables. The results of these two studies were similar and divergent. Both studies found that both adult IPV and childhood maltreatment were independently associated with PTSD symptomatology. Becker and colleague found that adult IPV mediated the relation between childhood physical abuse and adult PTSD symptomatology, while Gobin and colleagues found that it did not. These divergent results were explained, in part, by sampling characteristics. While Becker et al.'s sample was comprised of an "abused group" (i.e., women who had been abused by a partner in the past year) and a similarly-sized, nonabused comparison group, Gobin et al.'s sample was only comprised of help-seeking women who had experienced IPV victimization for at least three months and had experienced at least one instance of physical IPV victimization within six months of study enrollment. For the current study, as detailed further below, I chose to employ non-proportionate quota sampling method, which is more similar to Becker et al.'s (2010) strategy. This decision was made for multiple reasons, to include the relative ease of recruiting a sample with a broader range of backgrounds and the statistical need for a range of responses on key variables, given my decision to test mediation, as described below.

Another important difference between the two studies is their divergent analytic strategies. Becker et al. utilized Heirarchical Multiple Regression (HMR) analyses to test mediational relations, while Gobin et al. used Structural Equation Modeling (SEM) to test a proposed structurql model. For the current study, I selected mediation testing vis-à-vis HMR. While there are a number of reasons (e.g., lack of specification of a structural model prior to data collection, psychometrically inadequate measures) this approach is more appropriate for the current study, the linchpin in my decision making process was Kline's (2011) guidance that "If solid reasons cannot be provided for the specification of directionality…" (p. 357), other analytic methods (e.g., multiple regression) should be utilized. As discussed further in the Limitations and Future Directions section, the temporal precedence of maladaptive cognitions is unknown. That is, there is currently insufficient evidence to conclude that maladaptive cognitions predated childhood maltreatment, emerged in response to childhood maltreatment, or emerged in response to adulthood IPV victimization. Lacking strong determinants of when or how maladaptive cognitions arise, I employed HMR methodology similar to that of Becker et al. (2010). Finally, I am attempting to speak to correlations in this study, not causation, further making HMR an appropriate analytic choice.

In sum, I hypothesized that IPV victimization and PTSD symptomatology would be significantly related. Furthermore, I hypothesized that childhood maltreatment experiences and maladaptive cognitions would mediate the relation between IPV victimization and PTSD symptomatology, such that the complete model would more accurately predict PTSD symptomatology than IPV victimization alone. An illustration of this analytical model is presented in Figure 5 and is reliant upon Baron and Kenny's (1986) proposed approach to testing mediation, a strategy which is consistent with other mediational analyses with PTSD outcome

variables (e.g., Becker, Stuewig, & McCloskey, 2010; Olatunji, Elwood, Williams, & Lohr, 2008) and is analytically appropriate given my lack of conjecture regarding temporal precedence.

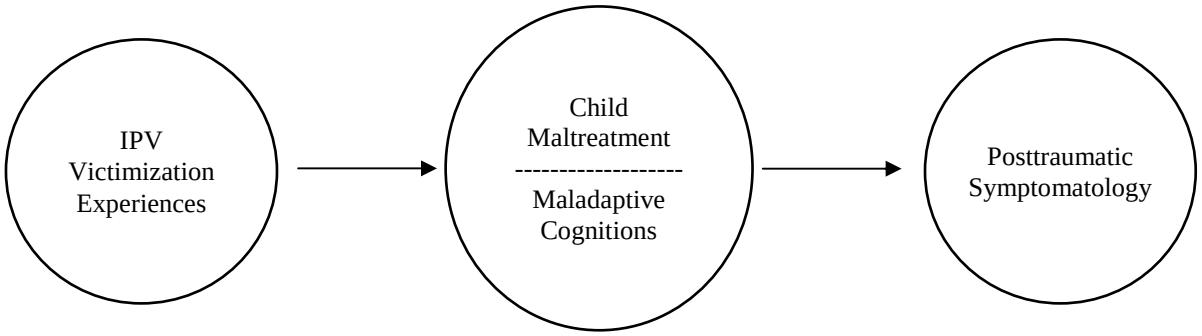

Figure 5. Illustration of model.

A. Methods

1. Participants. Participants for this study were 244 adult females recruited from the community via solicitation from domestic violence shelters, university newsletters, and various online forums [targeting women in the general population, women with mental illness (e.g., PTSD, depression), and women with childhood maltreatment and/or IPV experiences]. Inclusion criteria required that participants be female and at least 18 years of age.

2. Measures.

a. Demographics. General demographic information (e.g., age, ethnicity, educational attainment, income level, sexuality, relationship status) was collected via an 11-item questionnaire (see appendix B).

b. Intimate partner violence. The Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) was used to assess IPV exposure (see appendix C). The CTS2 is a 78 item, self-report measure and is one of the most commonly used instruments

for assessing IPV (Jackson, 1999). The instrument contains mirroring pairs of questions (i.e., one about the respondent's behaviors and one about the respondent's partner's behaviors) that assess for concrete behaviors in the IPV domains of physical, psychological, and sexual intimate partner maltreatment. Respondents are asked to rate how often the behavior occurred within the last year using an eight-point (i.e., 0 = *this has never happened*, 1 = *once in the past year*, 6 = *more than 20 times in the past year*, 7 = *not in the past year, but happened before*) Likert-style scale.

The CTS2 is comprised of five scales, which each contain two subscales. The Physical Assault Scale (subscales: minor, severe) measures physical acts of violence (e.g., "pushed or shoved my partner"). The Sexual Coercion Scale (subscales: minor, severe) assesses "behavior that is intended to compel the partner to engage in unwanted sexual activity" (e.g., "used threats to make my partner have oral or anal sex"; Straus et al., 1996, p. 290). The Psychological Aggression Scale (subscales: minor, severe) assesses verbal and nonverbal emotional maltreatment (e.g., "insulted or swore at my partner"). The Negotiation Scale (subscales: emotional, cognitive) measures attempts made to use discussion as a means to settle disputes (e.g., "showed my partner I cared even though we disagreed"). The Injury Scale (subscales: minor, severe) assesses physical injury sustained as a result of IPV (e.g., "went to the doctor because of a fight with my partner"). Frequency scores were computed by first recoding responses as described in Straus (n.d.; i.e., 0 and 7 were coded as 0, 1 was coded as 1, 2 was coded as 2, 3 was coded as 4, 4 was coded as 8, 5 was coded as 15, and 6 was coded as 25), thus changing the possible item-level range from 6 to 25 (see appendix J for syntax). These frequency scores were then summed across subscales for a total frequency score.

Straus and colleagues (1996) have found subscale reliability via internal consistency values ranging from α = .79 (Psychological Aggression Scale) to α = .95 (Injury Scale). In the current study, the Cronbach alpha coefficient was excellent, α = .94. Item-total correlations fell within a range of *r* = .34 to *r* = .92, with a mean item-total correlation of *r* = .77. Furthermore, Straus et al. (1996) reported that the CTS2 has good construct validity as evidenced by its discriminative, convergent, and divergent validity.

c. Posttraumatic stress symptomatology. The Trauma Symptom Inventory-2 (TSI-2; Briere, 2011) was used to assess posttraumatic symptomatology (see appendix D). The TSI-2 was developed to assess posttraumatic outcomes resulting from a range of possible traumatic events and is intended to address a need for a "broad-spectrum assessment of trauma symptoms" (Briere, 2011, p. 3), rather than a single syndrome, criteria-based assessment. The TSI-2 is a 136-item, self-report measure. Respondents are asked to rate how often specified thoughts, feelings, or behaviors occurred within the past six months using a four-point (i.e., 0 = *never*, 3 = *often*) Likert-style scale.

The TSI-2 contains 12 clinical scales, six of which have associated subscales: Anxious Arousal (i.e., symptoms of anxiety; e.g., "nervousness"; subscales: Anxiety and Hyperarousal), Depression (i.e., depressed mood; e.g., "sadness"), Anger (i.e., angry cognitions, moods, behaviors, and fantasies; e.g., "feeling mad or angry inside"), Intrusive Experiences (i.e., posttraumatic reactions; e.g., "nightmares or bad dreams"), Defensive Avoidance (i.e., reflects attempts to avoid or suppress traumatic thoughts or stimuli; e.g., "trying to forget about a bad time in your life"), Dissociation (i.e., dissociative symptomatology; e.g., "feeling like you were in a dream"), Somatic Preoccupations (i.e., preoccupation with bodily symptoms, e.g., "aches or pains"; subscales: Pain and General), Sexual Disturbance (i.e., dysfunctional sexual behavior or

cognitions, e.g., “having sex with someone you hardly knew”; subscales: Sexual Concerns and Dysfunctional Sexual Behavior), Suicidality (i.e., suicidal thoughts and behaviors; e.g., “wishing you were dead”; subscales: Ideation and Behavior), Insecure Attachment (i.e., interpersonal difficulties or fears related to maladaptive attachment, which presumably arises from early life experiences; e.g., “feeling abandoned or rejected”; subscales: Relational Avoidance and Rejection Sensitivity), Impaired Self-Reference (i.e., inadequate sense of self or identity; e.g., “being easily influenced by others”; subscales: Reduced Self-Awareness and Other-Directedness), and Tension Reduction Behavior [i.e., “external activities engaged in…as a way to modulate, interrupt, avoid, or soothe negative internal states and…may reflect underdeveloped affect regulation and tolerance skills” (Briere, 2011, pp. 18-19); e.g., “becoming so upset that you had to do something dramatic to calm yourself down”).

The TSI-2 demonstrates reliability via internal consistency values ranging from $\alpha = .74$ (Somatic Preoccupations – Pain subscale) to $\alpha = .94$ (Depression Scale). Item-total correlations fell within a range of $r = .64$ to $r = .84$. In the current study, the Cronbach alpha coefficient was excellent, $\alpha = .99$. Briere (2011) reported good construct validity for the TSI-2, as evidenced by its discriminative, convergent, and divergent validity. An exploratory factor analysis yielded a four factor solution: Self-Disturbance, Posttraumatic Stress, Externalization, and Somatization. TSI-2 scores were obtained by summing raw scores within each subscale and subsequently converting these sums to t-scores.

The TSI-2 revision of the scale was created to incorporate advances in the traumatology literature that demonstrate, in part, a breadth of posttraumatic outcomes not exclusively limited to PTSD criteria (Briere, 2011). To the benefit of the current study, the TSI-2 update included a domestic violence sample in its standardization procedures, and as expected, this group produced

significantly higher scores than did its comparative group on the Intrusive Experiences, Suicidality, and Tension Reduction Behavior scales and the Externalizing factor (Briere, 2011).

In addition, the PTSD CheckList – Civilian Version (PCL-C; Weathers, Litz, Huska, & Keane, 1994) was used to assess whether respondents meet diagnostic criteria for PTSD (see appendix E). This assessment methodology is being included, as some referenced research assessed for symptomatology, while others assessed for PTSD criteria. Thus, both methods will be employed in the current study. Following data collection, correlation coefficients were analyzed to determine the best composite score (i.e., TSI-2 or PCL-C) to use in assessing distress for the current sample.

The PCL-C is a 17-item self-report measure designed to assess for PTSD as defined by the DSM-IV (American Psychiatric Association, 1994). Respondents are asked to rate how much they are bothered by specified problems within the past month using a five-point (i.e., 1 = *not at all*, 5 = *extremely*) Likert-style scale. Given that the TSI-2 and PCL-C were analyzed to determine the best composite score, the PCL-C was modified to request that respondents indicate whether they had been bothered by the specified problems within the last six months, thus making the timeframes consistent between measures.

The PCL-C contains three subscales that parallel criteria B, C, and D for PTSD diagnosis: Re-experiencing (five items; e.g., “Feeling very upset when something reminded you of a stressful experience from the past”), Avoidance (seven items; e.g., “Loss of interest in things that you used to enjoy”), and Hyperarousal (five items; e.g., “Feeling irritable or having angry outbursts”). PCL-C scores were obtained by summing the responses to produce a total summed score.

The PCL-C demonstrates good internal consistency values ranging from α = .85 (Re-experiencing and Avoidance scales) to α = .94 (total scale), and item-total correlations fell within a range of *r* = .40 to *r* = .74 for the total scale (Ruggiero, Del Ben, Scotti, & Rabalais, 2003). In the current study, the Cronbach alpha coefficient was excellent, α = .96. In a review, Wilkins and colleagues (2011) reported good construct validity for the PCL-C, as evidenced by its convergent and discriminant validity.

d. Childhood maltreatment. A modification of the Childhood Maltreatment Interview Schedule Short Form (CMIS-SF; Briere, n.d.) was used to assess childhood maltreatment experiences (see appendix F). The CMIS-SF was adapted from the original CMIS (Briere, 1992) to assess for a range of child abuse experiences perpetrated by various caregivers (i.e., biological parent, step parent, foster parent). The CMIS-SF contains both Likert-type and dichotomous yes-no questions. Respondents are asked to indicate whether specified actions took place prior to the respondent turning 17 years of age.

The CMIS-SF does not contain formal scales or clinical cutoffs to define abuse victimization. It does, however, assess for four dimensions of childhood maltreatment: witnessing domestic violence (e.g., "did you ever see one of your parents hit or beat up your other parent"?), psychological abuse (e.g., "ridicule or humiliate you"), physical abuse [e.g., "did a parent, step-parent, foster-parent, or other adult in charge of you as a child ever do something to you on purpose (for example, hit or punch or cut you, or push you down) that made you bleed or gave you bruises or scratches, or that broke bones or teeth"?], and sexual abuse (e.g., "did anyone ever kiss you in a sexual way, or touch your body in a sexual way, or make you touch their sexual parts"?). For consistency and comparability, the scoring approach for the CMIS-SF was consistent with that used on the CTS2. Consistent with scoring strategies used by Becker et

al. (2010), frequency scores were computed by first recoding responses as described in Straus (n.d.; i.e., 0 and 7 were coded as 0, 1 was coded as 1, 2 was coded as 2, 3 was coded as 4, 4 was coded as 8, 5 was coded as 15, and 6 was coded as 25), thus changing the possible item-level range from 6 to 25 (see appendix J for syntax). These frequency scores were then summed across subscales for a total frequency score.

There are no known psychometric studies published for the CMIS-SF (Briere, n.d.). Rather, the questions are intended to provide a flexible manner of assessing child maltreatment experiences and can be adapted to suit the needs and interests of various researchers (Briere, n.d.). Thus, questions were both modified and added, as indicated in appendix F. In the current study, the version of the CMIS-SF used had good internal consistency, with an excellent Cronbach alpha coefficient, $\alpha = .93$.

e. Maladaptive cognitions. The Cognitive Distortion Scales (CDS; Briere, 2000) were used to assess cognitive distortions as a representative form of maladaptive cognitions (see appendix G). Briere (1997) developed the instrument to fill a void in the assessment of maladaptive cognitive strategies and argued that cognitive distortions are associated with post-victimization reactions and PTSD. The CDS is a 40 item, self-report measure, and each item denotes a dysfunctional thought or affective experience. Respondents are asked to rate how often the thought or feeling occurred within the past month using a five-point (i.e., 1 = *never*, 5 = *very often*) Likert-style scale.

The CDS contains five scales consisting of eight items each: Self-Criticism (i.e., the tendency to be self-critical; e.g., “putting yourself down”), Self-Blame (i.e., blaming of the self for unwanted or unpleasant events; e.g., “blaming yourself for something that happened to you”), Helplessness (i.e., the perception of one’s inability to exert control over important aspects of life;

e.g., “feeling helpless to improve your situation”), Hopelessness (i.e., the belief that the future is grim; e.g., “thinking that things will never be very good for you”), and Preoccupation With Danger (i.e., the tendency to perceive the world as dangerous; e.g., “thinking that someone might hurt you”). CDS scores were obtained by summing raw scores within each subscale and subsequently converting these sums to t-scores.

The internal consistency reliability values of the CDS ranged from $\alpha = .89$ to $\alpha = .97$. In the current study, the Cronbach alpha coefficient was excellent, $\alpha = .99$. An exploratory factor analysis yielded a four factor solution, such that the Hopelessness and Helplessness scales merged as a single factor. Overall, the intercorrelations between the five scales ranged from $r = .68$ to $r = .92$, demonstrating significant relatedness among scales. Reviews of the CDS (Briere, 2000) indicate good construct validity.

3. Procedures. Participants were drawn from the community via domestic violence shelters, university newsletters, and online forums targeting women in the general population, women with mental illness (e.g., PTSD, depression), and women with childhood maltreatment and/or IPV experiences. The specific recruitment venues are outlined in appendix H and reflect a non-proportionate quota sampling method. That is, a high percentage of participants who endorsed childhood maltreatment/IPV histories were sought, as percentages merely commensurate with base rates in the general population would have been statistically prohibitive.

All participants, irrespective of venue, were solicited electronically, using identical verbiage. Residents at domestic violence shelters were solicited via emails sent to shelter directors. University staff were solicited via a combination of direct email and postings to online electronic newsletters. Members of online forums were solicited via postings in discussion forums and on organization announcement pages. Participants were not asked to identify

specifically the source of solicitation. Thus, university faculty, for example, cannot be statistically compared to domestic violence shelter residents to examine potential between-group differences related to recruitment method.

All potential participants were directed to an internet link to complete an online survey, where they endorsed informed consent before being allowed to continue. Participants were permitted to end their participation at any time. Following completion of the survey, participants were provided with debriefing information (see appendix I). Participants were invited to enter a drawing for one of five gift cards to an online retailer.

III. Results

A. Demographics

Participants were 244 adult (Mean age = 37.62 years, *SD* = 13.17) females. Within this sample, ethnic/racial group membership was distributed as follows: Caucasian/White (*n* = 191, 78.3%), Asian/Asian American (*n* = 21, 8.6%), Hispanic/Latina (*n* = 12, 4.9%), Black/African American (*n* = 10, 4.1%), and Other (*n* = 10, 4.1%). The most frequently endorsed ethnic/racial group in the "other" category was multiracial. The majority of the participants (*n* = 221, 90.6%) self-identified as heterosexual, though other sexual orientations were also represented: bisexual (*n* = 10, 4.1%), homosexual (*n* = 9, 3.7%), and other (*n* = 4, 1.6%). Of the latter group, two individuals self-identified via a write-in option as "asexual."

The modal educational level for the sample was a four year degree (26%), with fewer than 4% of the sample having obtained less than a high school diploma. Mean household income for participants fell between $25,000 and $50,000, with 14.3% of the sample reporting less than $10,000 total annual income and 26.2% of the sample reporting greater than $75,000 total annual income (i.e., the latter reflecting the modal income response). The majority (53.7%)

of the sample was employed fulltime. The second most endorsed employment classification was "employed part time" (16.4%).

Participants in the U.S. comprised 87.7% of the sample, with the majority residing in the southeast region. The intention of this study was to solicit participation from U.S. residents/citizens. While the recruitment materials highlighted this intent, the informed consent failed to specify geographical exclusion criteria. Further, the geographical demographic question of the study asked participants what state they reside in and listed the 50 states, as well as "other," as response options. The "other" response option was included to potentially capture individuals with American citizenship who were residing outside of the 50 states (e.g., Puerto Rico). I discovered, however, that participants who used the "other" response option used it to denote residence in other countries, irrespective of citizenship. Of participants located outside the U.S., area of residence was largely concentrated in two countries: 15 resided in Singapore, and 7 resided in the U.K.

To determine if data from participants from countries outside the U.S. should be excluded, U.S. participants and non-U.S. participants were grouped by location and compared via a series of one-way ANOVAs. There was a not a significant effect of location on childhood maltreatment experiences [$F(128, 115) = .918$, $p = .682$], adulthood IPV experiences [$F(71, 172) = .946$, $p = .598$], maladaptive cognitions [$F(154, 89) = .664$, $p = .987$], PTSD symptomatology [i.e., TSI-2 sum score; $F(129, 114) = .795$, $p = .897$], or PTSD incidence [i.e., PCL-C sum score; $F(57, 159) = 1.234$, $p = .156$]. Since these two groups did not vary significantly on any of the variables of interest, responses from participants residing outside the U.S. were retained, and all participants were treated as a homogenous participant group for the purposes of this study.

Within this sample, relationship status was distributed as follows: married (*n* = 114, 46.7%), single/never married (*n* = 61, 25.0%), divorced (*n* = 28, 11.5%), member of an unmarried couple (*n* = 25, 10.2%), widowed (*n* = 8, 3.3%), separated (*n* = 5, 2.0%), and other (*n* = 3, 1.2%). The mean current relationship length was 7.46 years (range = 0-47 years, *SD* = 10.13 years). The mean number of children living in the home was .74 (range = 0-5, *SD* = 1.07). Complete demographic statistics are outlined in appendix K.

B. Descriptive Statistics

1. Traumatic events. When dichotomizing item-level endorsement versus non-endorsement of abuse experiences, approximately 97% (*n* = 238) of the sample indicated they had experienced at least one instance of abuse victimization (i.e., childhood maltreatment, witnessing IPV during childhood, or adulthood IPV) in their lifetime. About 91% (*n* = 221) of the participants endorsed at least one instance of one type of childhood maltreatment experience. Approximately 70% (*n* = 171) endorsed an adulthood IPV victimization experience. Because there was significant variance in the prevalence of type of abuse, these prevalence rates are reported in Table 1. This is a high endorsement of IPV experiences, when compared with the general population. This finding is hypothesized to be due to one of two factors (or some combination of both): the non-proportionate quota sampling method mentioned previously and/or the measuring of incident frequency rather than severity, as discussed in additional detail next.

Table 1

Prevalence of Abuse Type by Yes/No Endorsement

Abuse Type	*n*	%
Childhood Victimization		
Psychological Abuse	205	84.0
Physical Abuse	171	70.1
Sexual Abuse	130	53.3
Adulthood Victimization		
Psychological IPV	163	66.8
Physical IPV	52	21.3
Sexual IPV	65	26.6

Note: "Yes" endorsement denotes endorsing any item, within a given category of abuse, at any level of frequency. Whereas presented here for discussion sake, these endorsements, as presented, are not thought to be sufficient to define a particular participant's experience as "abuse."

Both the CMIS-SF and CTS2 are liberal in their queries of abuse experiences [e.g., "Prior to age 17, how often did your parent, stepparent, or other caregiver insult you, call you names, put you down, or tell you that you were unwanted?" (CMIS-SF); "My partner insulted or swore at me." (CTS2)]. Thus, singular item endorsements were not sufficient to deem participants as having experienced abuse per se. When asked, for example, if participants believed they were physically abused prior to the age of 17 years, only 34.4% (n = 84) responded affirmatively [i.e., in contrast to the 70.1% (n = 171) who endorsed any childhood physical abuse item on the CMIS-SF]. Similarly, 36.5% (n = 89) reported they were sexually abused prior to the age of 17 years [i.e., in contrast to the 53.3% (n = 130) who endorsed any childhood sexual abuse item on the CMIS-SF].

Straus (n.d.) has not provided recommendations for cutoff scores through which to label participant-endorsed experiences as "abuse" or "not abuse." For the purposes of running analytic models, the continuous scores obtained herein are desirable. These continuous scores pose a problem, however, when attempting to clearly define the number of participants in this sample

who have been "abused." Any attempts by this author to newly define cutoffs for the purpose of this study would not be statistically validated and would resultantly risk being arbitrary.

One approach to teasing apart the implicit spectrum of abuse experiences is to collect data on the frequency at which said experiences occurred. The CTS2, which measures IPV, as described previously, asks respondents to indicate the frequency of occurrence for each item. These frequencies are then coded to convert an implicit spectrum of abuse experiences into an explicit one (i.e., à la Straus et al., 1996), wherein higher scores equal more frequent incidences of abuse. For the sake of comparability between the CTS2 and CMIS-SF within this study, the CMIS-SF was modified to have participants respond to childhood maltreatment questions using the same frequency scale. The CMIS-SF data was then recoded using CTS2 guidelines, as described previously and highlighted in appendix J. As a result, participants generated broad ranges of response patterns regarding abuse experiences, as highlighted in Table 2. Predictably, psychological abuse is the most oft-endorsed abuse experience type in both childhood and adulthood. These score ranges will be used later in the testing of the proposed model.

Table 2
Endorsement of Abuse Experiences by Type

Abuse Type	*# of Items*	*M*	*Min*	*Max*	*SD*	*n* ≥1*SD* (%)
Childhood Victimization						
Witnessing IPV	6	2.84	0	24	4.92	37 (15.2)
Psychological Abuse	11	12.54	0	53	13.08	44 (18.0)
Physical Abuse	7	5.57	0	35	7.34	45 (18.4)
Sexual Abuse	13	8.09	0	57	13.67	35 (14.3)
Adulthood Victimization						
Psychological Abuse	8	7.41	0	45	9.29	36 (14.8)
Physical Abuse	12	3.13	0	53	9.06	22 (9.0)
Sexual Abuse	7	2.34	0	31	2.34	23 (9.4)

Note: Endorsements are indicative of frequency scores calculated prior to recoding per Straus (n.d.) conventions. Responses of "7" recoded to "0." Possible item level ranges = 0-6; *n* ≥1*SD* = individuals whose scores are ≥ 1 *SD*.

2. Maladaptive cognitions. As noted previously, the CDS contains five subscales: self-criticism, self-blame, helplessness, hopelessness, and preoccupation with danger. This sample generated *t*-scores with some consistency across the subscales, as mean scores ranged from 65.19-69.88, with higher scores earmarking more maladaptive thinking. Participants' responses to the CDS are highlighted in Table 3.

Importantly, a *t*-score of 55-64 is considered to be above the mean, whereas a *t*-score of 65 or above is in the clinical range. In this sample, participants collectively generated mean *t*-scores in the clinical range on all five CDS subscales. The reason for this outcome is not immediately clear. One possibility is that there may be a higher than average rate of childhood abuse experiences in this sample (i.e., when compared to the general population). Consistent with Foa et al.'s (1989) associative fear networks proposition, maladaptive cognitions may be born, in part, as a product of fear-provoking childhood experiences, such as childhood abuse. If this sample represents a group who have collectively experienced more childhood maltreatment than the general population (challenges to comparability are discussed in the limitations section), then it stands to reason that they would also collectively employ more maladaptive cognitions. Another possibility is a higher than average incidence of PTSD symptomatology, which includes cognitive components, among this sample. As discussed in greater detail below, The National Center for PTSD (2012) recommends a PCL-C cut-point of 30-35 for the general population. This sample generated a mean PCL-C score of 39.98. Thus, a combined look at both CDS and PCL-C scores may suggest the present sample is experiencing a higher level of distress than the general population.

Table 3

Range of Scores of Maladaptive Cognitions as Measured by the CDS t-scores

CDS Subscale	*M*	*Min*	*Max*	*SD*
Self-Criticism	67.79	43.00	100.00	16.54
Self-Blame	68.48	44.00	100.00	19.46
Helplessness	69.88	45.00	100.00	19.53
Hopelessness	65.19	44.00	100.00	19.31
Preoccupation with Danger	68.23	41.00	100.00	19.79

3. Posttraumatic stress symptomatology. The TSI-2 was employed to assess PTSD symptomatology, whereas the PCL-C was used to assess the presence or absence of DSM-IV-TR criteria-defined PTSD. Given that prior research in the field has employed both methods, which arguably convolutes comparability across studies, I wanted to gauge potential differences between the measures and constructs for the present sample. Of note, participants in this sample generated a mean score of 39.98 on the PCL-C, surpassing the National Center for PTSD's (2012) recommendation of a PCL-C cut-point of 30-35 for the general population, as mentioned previously. Specifically, 53.3% of the sample (n = 130) generated a PCL-C score of 35 or above. In contrast, this sample did not produce mean t-scores in the clinical range (i.e., ≥ 65) on the TSI-2. The reason for this is not immediately clear. Correlational analyses revealed the PCL-C was significantly correlated ($p < .001$) with each of the four factors of the TSI-2 (see correlations section for additional details). Descriptive output for the TSI-2 and PCL-C are provided in Table 4.

Table 4

Range of Scores of PTSD as Measured by the TSI-2 and PCL-C

Measure	*M*	*Min*	*Max*	*SD*
TSI-2				
Self-Disturbance$_a$	53.40	35.00	84.00	11.56
Posttraumatic Stress$_a$	56.04	36.00	91.00	12.62
Externalization$_a$	56.45	39.00	100.00	14.68
Somatization$_a$	51.38	32.00	85.00	13.01
PCL-C	39.98	17.00	85.00	17.52

Note: $_a$ denotes use of *t*-scores. A PCL-C score of 30-35 is recommended by the National Center for PTSD (2012) as a cut-point to represent the presence or absence of PTSD (i.e., scores ≥ 30 can indicated the presence of PTSD).

C. Correlational Analyses

Initial correlational analyses were conducted to examine the relations between hypothesized predictor and outcome variables. Strong relations ($p < .001$) emerged between all three IPV victimization types (i.e., psychological, physical, sexual). As anticipated, all three IPV victimization types were significantly related to each index of PTSD (i.e., each of the four TSI-2 factors and the PCL-C), supporting my first hypothesis. Strong relations ($p < .001$) emerged between all four childhood maltreatment types (i.e., witnessing parental domestic violence, psychological abuse, physical abuse, and sexual abuse). Though not preemptively hypothesized, all four types of childhood maltreatment experiences were significantly related to each index of PTSD (i.e., each of the four TSI-2 factors and the PCL-C). While there was variability in the strengths of relations between maladaptive cognitions and adulthood and childhood victimization experiences (see Table 5), all five CDS subscales were significantly related to all four TSI-2 factors, as well as the PCL-C. While I did not hypothesize specific relations between childhood maltreatment and IPV victimization, witnessing domestic violence in childhood was significantly related to adulthood IPV physical and sexual abuse experiences, and childhood psychological abuse was significantly related to adulthood IPV psychological abuse. There were no other

significant correlations between childhood and adulthood maltreatment types. Each of the relations between predictor and outcome variables were in the expected direction and consistent with prior research.

Table 5

Pearson Correlations among Predictor and Outcome Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.IPV Psyc Abuse	1.00																
2.IPV Phys Abuse	.576**	1.00															
3.IPV Sex Abuse	.365**	.737**	1.00														
4.Child Wit DV	.032	.137*	.155*	1.00													
5. Child Psyc Abuse	.128*	.033	.051	.518**	1.00												
6. Child Phys Abuse	.065	.072	.094	.502**	.734**	1.00											
7. Child Sex Abuse	.111	.103	.125	.258**	.379**	.335**	1.00										
8.CDS Self-Crit	.135*	.061	.121	.109	.323**	.207**	.209**	1.00									
9.CDS Self-Blame	.255**	.184**	.200**	.098	.344**	.198**	.248**	.852**	1.00								
10.CDS Help	.217**	.139*	.165**	.112	.405**	.302**	.259**	.767**	.813**	1.00							
11.CDS Hope	.163*	.121	.156*	.118	.379**	.304**	.241**	.775**	.777**	.946**	1.00						
12.CDS PWD	.237**	.176**	.185**	.170**	.439**	.339**	.208**	.752**	.841**	.824**	.788**	1.00					
13.TSI-2 Self-Dist	.188**	.152*	.176**	.156*	.368**	.284**	.184**	.792**	.792**	.815**	.815**	.770**	1.00				
14.TSI-2 PTS	.259**	.225**	.239**	.252**	.448**	.363**	.239**	.707**	.756**	.732**	.708**	.808**	.881**	1.00			

Table 5 (Cont.)
Pearson Correlations among Predictor and Outcome Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
15.TSI-2 EXT	.269**	.293**	.305**	.233**	.375**	.366**	.227**	.644**	.719**	.717**	.719**	.723**	.841**	.828**	1.00		
16.TSI-2 SOM	.147*	.252**	.272**	.262**	.395**	.340**	.294**	.612**	.625**	.632**	.593**	.657**	.687**	.760**	.710**	1.00	
17.PCL-C	.234**	.159*	.163*	.234**	.459**	.360**	.262**	.738**	.779**	.779**	.741**	.817**	.832**	.901**	.792**	.751**	1.00

Note: IPV Psyc Abuse = IPV psychological abuse; IPV Phys Abuse = IPV physical abuse; IPV Sex Abuse = IPV sexual abuse; Child Wit DV = childhood witnessing of parental domestic violence; Child Psyc Abuse = childhood psychological abuse; Child Phys Abuse = childhood physical abuse; Child Sex Abuse = childhood sexual abuse; CDS Self-Crit = maladaptive cognitions: self-criticism; CDS Self-Blame = maladaptive cognitions: self-blame; CDS Help = maladaptive cognitions: helplessness; CDS Hope = maladaptive cognitions: hopelessness; CDS PWD = maladaptive cognitions: preoccupation with danger; TSI-2 Self-Dist = PTSD symptomatology: Self-Disturbance; TSI-2 PTS = PTSD symptomatology: Posttraumatic Stress; TSI-2 EXT = Externalization; TSI-2 SOM = PTSD symptomatology: Somatization; PCL-C = criterion-based PTSD; *$p < .05$. **$p < 0.01$.

Due to the choice to combine the variables into single factors (i.e., as described in additional detail in the regression analyses section), correlations between key variables are presented in Table 6 in their combined form. Correlations between the CDS and the two indices of PTSD are approaching multicollinearity. Pallant (2005) suggests values of greater than .7 (i.e., $r > .7$) are problematic (a conundrum discussed further in the limitations section), wherein perfect multicollinearity exists at $r = -1$ or $r = 1$. This is thought to be a product of the strong cognitive component of PTSD, which has only recently be diagnostically remedied with the release of DSM-5 (American Psychiatric Association, 2013). This statistical complication will be addressed further in post-hoc analyses.

Table 6
Pearson Correlations among Variables after Combining into Single Factors

Variable	1	2	3	4	5
1.IPV Victimization	1.00				
2.Childhood Maltreatment	.139*	1.00			
3.Maladaptive Cognitions	.225**	.388**	1.00		
4.TSI-2	.298**	.436**	.846**	1.00	
5.PCL-C	.232**	.443**	.836**	.893**	1.00

Note: TSI-2 = PTSD symptomatology; PCL-C = criterion-based PTSD.
*$p < .05$. **$p < 0.01$.

Subsequently, I wanted to know whether any significant relations emerged between the key demographic variables and the predictor and outcome variables. Chi-square analyses revealed a few interesting relations, which Tables 7-10 illuminate. First, the only significant relation that emerged between demographic variables and abuse experiences was an association between sexual orientation and IPV experiences [F(71,

172)=1.17, *p*=.037], where endorsement of homosexual or bisexual orientation were associated with higher endorsements of IPV experiences. Higher household income levels were associated with higher elevations on all five CDS subscales: self-criticism [*F*(32, 211)=1.79, *p*=.009], self-blame [*F*(32, 211)=1.55, *p*=.038], helplessness [*F*(32, 211)=1.68, *p*=.021], hopeless [*F*(32, 211)=1.52, *p*=.045], and preoccupation with danger [*F*(30, 213)=1.95, *p*=.004]. Additionally, ethnic minority status [*F*(32, 211)=1.65, *p*=.021], higher education levels [*F*(32, 211)=2.09, *p*=.001], and homosexual/bisexual orientation [*F*(32, 211)=1.51, *p*=.048] were associated with higher endorsements of self-criticism. Higher education levels were also associated with higher endorsements of hopelessness [*F*(32, 211)=1.67, *p*=.018]. Longer relationship lengths were associated with higher TSI-2 scores [*F*(129, 114)=1.58, *p*=.007], and homosexual/bisexual orientation were associated with higher PCL-C scores [*F*(60, 183)=1.64, *p*=.006].

Table 7
Relations among Demographic Variables

Variable	1	2	3	4	5	6
1. Age in Years	1.00					
2.Ethnicity/Race	214.89	1.00				
3.Relationship Status	515.05**	52.20**	1.00			
4.Length of Relationship	3558.51**	226.10	476.35**	1.00		
5.Education Level	426.12	47.74*	75.93**	505.87	1.00	
6.Income Level	402.57*	59.61**	125.73**	458.54	100.52**	1.00
7.Sexual Orientation	108.13	6.53	32.16*	140.69	25.91	14.36

Note: *$p < .05$. **$p < 0.01$; Chi-Square Analyses.

Table 8

Analyses of Variance for Demographic Variable Categories Predicting Abuse Experiences on CMIS-SF and CTS2

Variable	Childhood Maltreatment *F*	IPV *F*
1. Age in Years	.95	.86
2.Ethnicity/Race	.61	1.17
3.Relationship Status	1.23	.75
4.Length of Relationship	1.02	1.20
5.Education Level	1.02	1.23
6.Income Level	1.10	.96
7.Sexual Orientation	1.17	1.41*

Note: *$p < .05$. **$p < 0.01$

Table 9

Analyses of Variance for Demographic Variable Categories Predicting Maladaptive Cognitions on CDS

Variable	CDS Self-Criticism *F*	CDS Self-Blame *F*	CDS Helpless-ness *F*	CDS Hopeless-ness *F*	CDS Preoccu-pation w/ Danger *F*
1. Age in Years	1.18	1.40	.89	.97	1.20
2.Ethnicity/Race	1.65*	1.29	1.05	1.19	.88
3.Relationship Status	1.17	1.24	.88	1.14	.84
4.Length of Relationship	1.03	1.29	.78	.71	.88
5.Education Level	2.09**	1.04	1.20	1.67*	1.48
6.Income Level	1.79**	1.55*	1.65*	1.52*	1.95**
7.Sexual Orientation	1.51*	1.31	1.31	.81	.71

Note: *$p < .05$. **$p < 0.01$.

Table 10

Analyses of Variance for Demographic Variable Categories Predicting Trauma Outcomes on TSI-2 and PCL-C

Variable	TSI-2 *F*	PCL-C *F*
1. Age in Years	1.12	.94
2.Ethnicity/Race	.93	.77
3.Relationship Status	.81	1.03
4.Length of Relationship	1.58**	.68
5.Education Level	1.31	1.23
6.Income Level	1.24	1.02
7.Sexual Orientation	.79	1.64**

Note: *$p < .05$. **$p < 0.01$.

Given the significant relation between sexual orientation and IPV experiences, I wanted to better understand how these relations were accounted for across IPV abuse type. As shown in Table 11, sexual orientation is significantly associated with endorsement of physical and sexual IPV abuse experiences, but not psychological abuse. Mean scores in Table 12 suggest prominent endorsement of these abuse types among homosexual participants, when compared with other self-identified sexual orientation categories. It should be noted, however, that the homosexual individuals ($n = 9$) in this sample ($N = 244$) are underrepresented. Interpretations of the above associations should be made with caution, as nine individuals cannot be presumed to be representative of their demographic group in the general population. Further, one or more of those nine individuals may represent outliers (a topic which is further discussed in the assumptions of normality section), in terms of IPV experiences. Thus, the significant associations found may be residue of rather arbitrary grouping variables among this sample.

Table 11

ANOVA: IPV scores as a function of Sexual Orientation

Variable	Psychological *F*	Physical *F*	Sexual *F*
Sexual Orientation	1.31	5.98**	5.92**

Note: *$p < .05$. **$p < 0.01$.

Table 12
Descriptive Statistics for Sexual Orientation and IPV type

Variable	*N*	*M*	*SD*	*SE*	Max
Psychological					
Heterosexual	221	15.71	27.85	1.87	173
Homosexual	9	24.44	29.23	9.74	77
Bisexual	10	30.30	49.23	15.57	159
Other	4	3.75	6.85	3.43	14
Physical					
Heterosexual	221	4.70	16.42	1.10	139
Homosexual	9	30.22	43.67	14.56	103
Bisexual	10	8.80	20.70	6.55	66
Other	4	0.00	0.00	0.00	0
Sexual					
Heterosexual	221	4.49	11.14	0.75	83
Homosexual	9	21.00	28.28	9.43	68
Bisexual	10	2.00	5.98	1.89	19
Other	4	1.00	2.00	1.00	4

Note: Minimum for all categories = 0; *$p < .05$. **$p < 0.01$.

D. Primary Regression Analyses

Given that a multicollinearity problem existed between the CDS subscales of helplessness and hopelessness (i.e., $r = .946$, see Table 5) and other CDS subscales were approaching multicollinearity (see Table 6), the subscales were combined to create a sum score for maladaptive cognitions. All other scoring conventions were retained. Since no significant differences emerged between the TSI-2 and PCL-C, the mean TSI-2 was utilized for the remaining analyses. This decision was made to retain uniformity in measure usage of the construct of PTSD or distress symptomology within my research

lab, thus increasing comparability across samples, and is not indicative of implied merits or demerits of either measure. No profound differences in relational strength between the four TSI-2 factors and the other variables of interest emerged. Additionally, three of the four (i.e., Self-Disturbance, Externalization, Somatization) factors were approaching multicollinearity. Thus, the four TSI-2 factors were combined to create a TSI-2 sum score. All other scoring conventions were retained.

Since the second hypothesis predicts mediation, Baron and Kenny's (1986) recommendations for testing mediation vis-à-vis regression analyses was used. In their four-step approach, steps one through three utilize simple regression analyses. Step one tests for path *c*. Step two tests for path *a*, and step three tests for path *b*. (Since my model proposes two mediators, steps two and three were each repeated to test the individual *a* and *b* paths.) Finally, step four employs a multiple regression analysis to test the full model, wherein *X* and *M* predict *Y* (see Figure 6).

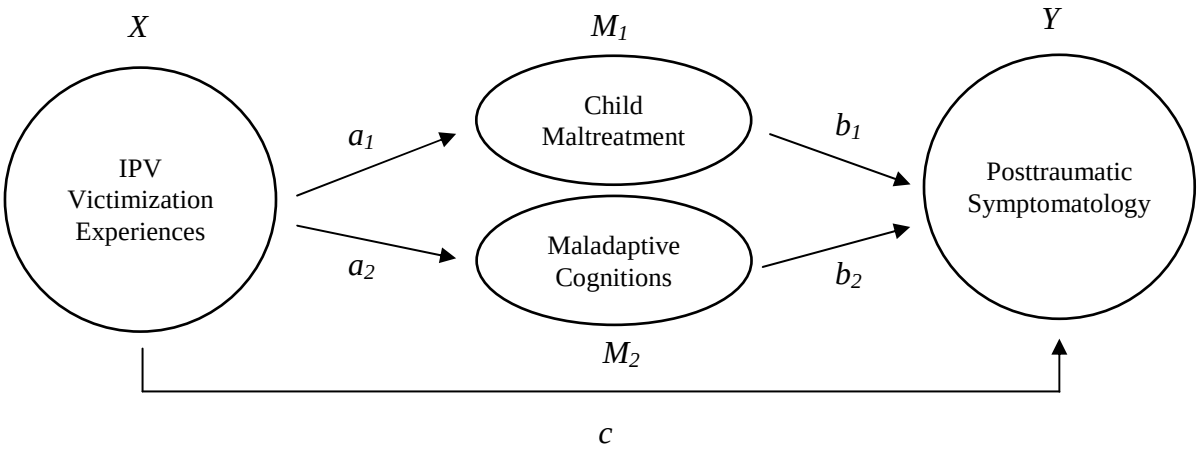

Figure 6. Illustration of analytic pathways.

The initial regression analysis examined the relation (i.e., path *c*) between IPV victimization experiences (*X*) and PTSD symptomatology (*Y*). The results indicated IPV victimization explained 9% of the variance in PTSD symptomatology, [$F(1, 242) = 23.584$, $p < .001$].

The second regression analysis examined the relation (i.e., path a_1) between IPV victimization experiences (*X*) and childhood maltreatment experiences (M_1). IPV victimization experiences explained 11% of the variance in childhood maltreatment experiences, [$F(1, 242) = 4.778$, $p = .030$].

The third regression analysis examined the relation (i.e., path a_2) between IPV victimization experiences (*X*) and maladaptive cognitions (M_2). IPV victimization experiences explained 5% of the variance in maladaptive cognitions, $F(1, 242) = 12.960$, $p < .001$.

The fourth regression analysis examined the relation (i.e., path b_1) between childhood maltreatment experiences (M_1) and PTSD symptomatology (*Y*). Childhood maltreatment experiences explained 19% of the variance in PTSD symptomatology, [$F(1, 242) = 56.755$, $p < .001$].

The fifth regression analysis examined the relation (i.e., path b_2) between maladaptive cognitions (M_2) and PTSD symptomatology (*Y*). Maladaptive cognitions explained 72% of the variance in PTSD symptomatology, [$F(1, 242) = 609.289$, $p < .001$].

Per Baron and Kenny (1986), the significant findings in steps one through three (i.e., my first five regression analyses) warrant progression to step four, the sixth regression analysis in this case. The sixth analysis, a hierarchical multiple regression

analysis (HMR), examined the full model. That is, it tested the ability of childhood maltreatment experiences (i.e., M_1, as measured by sum CMIS abuse scores) and maladaptive cognitions (i.e., M_2, as measured by sum CDS t-scores) to explain PTSD symptomatology outcomes (i.e., Y, as measured by sum TSI-2 t-scores) above and beyond adulthood IPV victimization experiences (i.e., X, as measured by sum CTS2 victimization scores) alone.

No major deviations from normality were detected in the Normal Probability Plot, and the Scatterplot revealed a normal distribution of the data. Examination of Mahalanobis distances revealed seven cases which exceeded the recommended critical value of 13.82 (Pallant, 2005). Casewise Diagnostics revealed only two cases with standardized residual values outside the expected range (i.e., above 3.0 or below -3.0; Pallant, 2005). Two cases represent less than 1% of the full sample (i.e., 0.8%), suggesting overall normality of the sample. Finally, the maximum value for Cook's Distance in this sample is .095, again suggesting no major problems in the data. Taken in sum, the data are considered to be within normal limits, which required no data transformations or exclusion of outlying cases.

Table 13 displays the results of the analysis. Step 1, which included adulthood IPV victimization experiences, explained 9% of the variance in PTSD symptomatology, [$F(1, 242) = 23.584$, $p < .001$]. Step two, which included childhood maltreatment experiences, explained 16% of the variance in PTSD symptomatology, [$F(2, 241) = 39.615$, $p < .001$]. Step three, which included maladaptive cognitions, explained 49% of the variance in PTSD symptomatology, [$F(3, 240) = 227.778$, $p < .001$, $R^2 = 73.7\%$]. In sum, results indicate that childhood maltreatment experiences and maladaptive cognitions

partially mediate the relation between adulthood IPV victimization experiences and PTSD symptomatology. Therefore, my second hypothesis was supported: Childhood maltreatment experiences and maladaptive cognitions partially mediated the relation between IPV victimization and PTSD symptomatology, such that the complete model more robustly explained PTSD symptomatology outcomes than IPV victimization alone.

Table 13
Summary of Primary HMR Analysis for IPV, Childhood Maltreatment, and Maladaptive Cognitions Predicting PTSD Symptomatology

Variable	*B*	*SE*	*β*	*t*	ΔR^2	ΔF	*Sig.*
Step 1					.089	23.584	.000
IPV Victimization	0.280	0.058	0.298	4.856			
Step 2					.159	50.794	.000
Child Maltreatment	0.141	0.020	0.402	7.127			
Step 3					.493	454.885	.000
Maladaptive Cognitions	0.421	0.020	0.775	21.328			

E. Post-hoc Analyses

1. Examination of model by abuse type. A number of post-hoc analyses were performed to provide better understanding of the above results. In the above HMR, scores for both victimization categories (i.e., adulthood and childhood) were summed across types. To better understand the unique contributions of each abuse subtype, I ran a post-hoc analysis in which the abuse scores were not summed. In the following HMR, three adulthood IPV victimization variables were entered at step one: psychological abuse, physical abuse, and sexual abuse, and four childhood maltreatment variables were entered at step two: witnessing of parental domestic violence, psychological abuse, physical abuse, and sexual abuse. The model as a whole was significant [F (8, 235) = 90.480, $p < .001$, $R^2 = 74.7\%$], as well as each step of the model (as highlighted in Table 14). Specific types of abuse experiences, however, appeared to better predict PTSD

symptomatology. In the adulthood category, physical abuse appeared to contribute most to the model (t = 1.701, p = .090). In the childhood category, both witnessing parental domestic violence (t = 2.045, p = .042) and physical abuse (t = 1.914, p = .057) contributed substantially to the model. These findings suggest physical abuse in particular, both in childhood and adulthood, is uniquely related to PTSD symptomatology development for this sample. Furthermore, witnessing another individual experience physical abuse during childhood appeared to significantly predict PTSD symptomatology. These findings are consistent with criterion-A in PTSD diagnosis, wherein one must have "experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others" (American Psychiatric Association, 2000, p. 467).

Table 14
Summary of Post-Hoc HMR Analysis with Abuse by Type

Variable	*B*	*SE*	*β*	*t*	*ΔR*^{2}	*ΔF*	*Sig.*
Step 1					.098	8.668	.000
IPV Psychological	-0.025	0.067	-0.015	-0.376			
IPV Physical	0.239	0.141	0.094	1.701			
IPV Sexual	0.187	0.188	0.048	0.994			
Step 2					.174	14.119	.000
Child Witnessing DV	0.198	0.097	0.081	2.045			
Child Psychological	-0.004	0.042	-0.005	-0.102			
Child Physical	0.134	0.070	0.094	1.914			
Child Sexual	-0.004	0.028	-0.006	-0.161			
Step 3					.483	463.054	.000
Maladaptive Cognitions	0.430	0.020	0.792	21.519			

Note: DV = domestic violence.

Pico-Alfonso et al. (2006) found adulthood IPV psychological abuse to be the best predictor of PTSD development, which was not substantiated in the current sample. These findings led me to examine how the model would change if both forms (i.e.,

adulthood and childhood) of psychological abuse were removed. As expected, the model [F (6, 237) = 121.554, $p < .01$, R^2 = 75.5%], as well as each step of the model, remained significant (as shown in Table 15). The removal of psychological abuse, however, appeared to strengthen the model, which is consistent with DSM criterion A [wherein one must have "experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others" (American Psychiatric Association, 2000, p. 467)].

Table 15
Summary of Post-Hoc HMR Analysis with Abuse by Type, Excluding Psychological Abuse

Variable	*B*	*SE*	*β*	*t*	*ΔR²*	*ΔF*	*Sig.*
Step 1					.082	10.787	.000
IPV Physical	0.214	0.121	0.084	1.761			
IPV Sexual	0.197	0.186	0.051	1.061			
Step 2					.135	13.723	.000
Child Witnessing DV	0.198	0.092	0.081	2.148			
Child Physical	0.129	0.056	0.091	2.300			
Child Sexual	-0.005	0.027	-0.007	-0.196			
Step 3					.537	519.135	.000
Maladaptive Cognitions	0.429	0.019	0.789	22.785			

Note: DV = domestic violence.

2. Examination of model when severity of abuse is considered. Given that severity of abuse experiences has been linked to severity of PTSD presentations (e.g., American Psychiatric Association, 2000; 2013; Bennice et al., 2003; Brewin, Andrews, & Valentine, 2000; Golding, 1999), I wanted to examine whether severity better explained PTSD symptomatology in this sample. As noted in the introduction, researchers' subjective determinations and sustained injury are two ways researchers have measured abuse severity (Golding, 1999). This study did not explicitly include either in its

analyses. Thus, severity of abuse was not examined in prior analyses. The most straightforward approximation of severity of abuse collected from this sample is injury sustained. In both the CTS2 (i.e., IPV experiences) and CMIS-SF (i.e., childhood maltreatment experiences), respondents were asked a number of face-valid questions about whether their physical abuse led to broken bones, the seeking of medical care, etc. As in previously described coding, Straus' (n.d.) conventions for scoring were used to code injury items on both measures (see appendix J). The following analysis will examine whether the endorsement of these injury indicators emerges as an important variable in PTSD symptomatology outcomes.

Endorsement of injury sustained from childhood abuse was significantly related to endorsement of injury sustained from adulthood IPV abuse ($r = .503$, $p < .001$). Endorsement of injury sustained from childhood abuse was significantly related to PTSD symptomatology ($r = .356$, $p < .001$). Finally, endorsement of injury sustained from adulthood IPV abuse was significantly related to PTSD symptomatology ($r = .290$, $p < .001$). In an HMR, the model as a whole remained significant [F (3, 200) = 202.405, $p < .001$, $R^2 = 75.2\%$; see Table 16].

Table 16
Summary of Post-Hoc HMR Analysis with Injury Serving as a Proxy for Severity of Abuse

Variable	*B*	*SE*	*β*	*t*	*ΔR²*	*ΔF*	*Sig.*
Step 1					.084	18.563	.000
IPV Injury	0.405	0.185	0.089	2.188			
Step 2					.059	13.893	.000
Child Injury	6.159	1.876	0.135	3.283			
Step 3					.609	491.481	.000
Maladaptive Cognitions	0.436	0.020	0.802	22.169			

Note: IPV Injury = endorsement of injury sustained secondary to adulthood IPV victimization experiences; Child Injury = endorsement of injury sustained secondary to childhood abuse experiences.

3. Controlling for socioeconomic status and educational attainment.

Psychological research often highlights economic and/or educational disadvantage as risk factors for undesirable psychological outcomes. This led me to ponder whether the model output would substantially change if these variables were controlled for. Given the relatedness of income level and educational attainment [X^2 (56, N = 244) = 100.52, p < .001], I decided to use income level as a proxy for both for the sake of simplicity. Federal poverty guidelines for 2014 indicate a household of three persons meets the poverty threshold at an annual income level of $19,790 (U.S. Department of Health & Human Services, 2014). Since the majority (56.9%) of the sample reported currently being in a relationship and the mean number of children reportedly living in the household was about one (M = .74), the poverty level for a household of three persons will be used as a cut point. Thus, participants were grouped into two income categories: those reporting less than $20,000 annual household income and those reporting $20,000 or more in annual household income.

HMR was then used to reanalyze the original model (i.e., the sixth regression analysis, as outlined above). This time, however, the bifurcated income variable was entered in step one, adulthood IPV victimization in step two, childhood maltreatment experiences in step three, and maladaptive cognitions in step four, with PTSD symptomatology continuing to stand as the outcome variable. The results revealed that, within this sample, income level significantly contributed to the overall model (see Table 17), with each subsequent step remaining significant [F (4, 239) = 172.616, p < .001, R^2 = 74.3%].

Table 17
Summary of Post-Hoc HMR Analysis when Controlling for Income Level

Variable	*B*	*SE*	*β*	*t*	*ΔR²*	*ΔF*	*Sig.*
Step 1					.068	17.658	.000
Income Level	-2.328	1.079	-0.081	-2.157			
Step 2					.089	25.439	.000
IPV Victimization	0.028	0.009	0.144	3.024			
Step 3					.129	43.515	.000
Childhood Maltreatment	0.012	0.004	0.129	3.249			
Step 4					.396	297.896	.000
Maladaptive Cognitions	0.103	0.006	0.711	17.260			

Note: Income Level = annual household income bifurcated by those reporting less than $20,000 annually and those reporting at or more than $20,000 annually.

4. Examining incidence of PTSD. As discussed earlier, some researchers (e.g., Guerrero, 2006; Mezey, Bacchus, Bewley, & White, 2005) have found that the combination of childhood abuse experiences and adulthood IPV victimization uniquely predicts PTSD symptom severity but not PTSD incidence. Since the methodology of this study embedded PTSD symptom severity in its design, there is some merit to attempting to differentiate PTSD symptom severity from PTSD incidence in post-hoc analyses. With the instruments used, the best way of making this differentiation is perhaps to rely upon the PCL-C, which maps directly onto the DSM-IV-TR diagnostic criteria. The National Center for PTSD (2012) recommends a PCL-C cut-point of 30-35 for the general population. To err on the conservative side, I grouped respondents by those producing PCL-C scores of 17-34 and those producing scores of 35-85, with the former categorized as not meeting threshold for a PTSD diagnosis and the latter meeting threshold.

An HMR was then used to reanalyze this study's original model. This time, however, this bifurcated PCL-C grouping variable was utilized as the outcome variable. Results were somewhat mixed (see Table 18). Contrary to the findings of Guerrero

(2006) and Mezey et al. (2005), each step of the model remained significant. That is, adulthood IPV victimization, childhood abuse experiences, and maladaptive cognitions all uniquely and significantly explained variance in PTSD incidence in this sample. Perhaps supporting their research, however, is the finding that the model [F (3, 240) = 80.015, $p < .001$, $R^2 = 49.4\%$] is weakened when merely predicting incidence (i.e., $R^2 = 49.4\%$ for this analysis, versus $R^2 = 73.7\%$ when predicting PTSD symptom severity by proxy).

Table 18
Summary of HMR Analysis for IPV, Childhood Maltreatment, and Maladaptive Cognitions Predicting PTSD Incidence

Variable	*B*	*SE*	*β*	*t*	*ΔR²*	*ΔF*	*Sig.*
Step 1					.049	12.398	.001
IPV Victimization	0.001	0.000	0.061	1.306			
Step 2					.110	31.645	.000
Child Maltreatment	0.000	0.000	0.101	2.035			
Step 3					.341	163.648	.000
Maladaptive Cognitions	0.004	0.000	0.645	12.792			

Since, however, the addition of maladaptive cognitions to this model potentially convoluted the findings of these previous researchers, a final regression was performed to examine the model without looking at the contributions of maladaptive cognitions. Results of this regression indicated the combination of childhood maltreatment experiences and adulthood IPV experiences significantly predicted PTSD incidence over and above adulthood IPV experiences alone [F (2, 241) = 22.807, $p < .001$, $R^2 = 15.9\%$]. It is not suggested, however, that the findings rise to an impressive enough level to nullify the findings of Guerrero (2006) and Mezey et al. (2005). Rather, this finding highlights potential differences between their samples and the current sample, such that

in this sample, the addition of childhood maltreatment experiences appears to better predict both PTSD symptomatology and PTSD incidence better than adulthood IPV victimization alone.

IV. Discussion

Informed by the seminal work of Foa and colleagues (1989), this study investigated the relation between adulthood IPV victimization and PTSD symptomatology outcomes. Additionally, it examined whether childhood maltreatment experiences, maladaptive cognitions, and adulthood IPV victimization could better predict PTSD symptomatology outcomes than adulthood IPV victimization alone.

I hypothesized that adulthood IPV victimization and PTSD symptomatology would be significantly related, such that those endorsing higher incidences and frequencies of IPV would also yield higher PTSD symptomatology scores. This hypothesis was supported by a significant positive correlation between the two summed factors. Additionally, each category of IPV victimization was individually significantly related to PTSD symptomatology: psychological victimization, physical victimization, and sexual victimization. These findings are consistent with previous research that highlights high rates of PTSD development secondary to IPV victimization experiences, when compared with PTSD development following any traumatic event (e.g., Golding, 1999; Kessler, 2000; Warshaw et al., 2009).

Second, I hypothesized that childhood maltreatment experiences and maladaptive cognitions would mediate the relation between IPV victimization and PTSD symptomatology. It was thought that an accumulation effect of multiple interpersonal traumatic events across the lifetime could put individuals at an exponential risk for PTSD

symptomatology development. Additionally, it was thought that the presence of maladaptive thinking could create a vulnerability for PTSD symptomatology development. Using Baron and Kenny's (1986) guidance, this proposed mediational pathway was tested using a series of regression analyses. Due to substantial correlational overlap at the intra-variable level, all key variables were transformed to sum scores and entered into the analyses. The outcome of these analyses revealed full support for my second hypothesis, such that a robust model emerged in which each predictor variable (i.e., adulthood IPV victimization, childhood maltreatment experiences, and maladaptive cognitions) uniquely and significantly accounted for the presence of PTSD symptomatology. In fact, these predictors explained 74% of the variance in PTSD symptomatology. As predicted, childhood maltreatment experiences and maladaptive cognitions partially mediated the relation between adulthood IPV victimization and PTSD symptomatology.

After examining findings in the current dataset and considering findings in past research, a number of post-hoc analyses were conducted. First, I considered whether combining adulthood IPV victimization and childhood maltreatment experiences scores across abuse type to create singular representative scores for both adulthood and childhood victimization might have influenced the outcome of the initial analyses. Thus, I conducted a subsequent HMR with each abuse type (i.e., psychological, physical, and sexual abuse in adulthood intimate relationships and witnessing parental domestic violence, as well as psychological, physical, and sexual abuse in childhood) represented as its own variable. Results of this analysis revealed a model that remained significant, with the model explaining 75% of the variance in PTSD symptomatology. It was noted,

however, that psychological abuse (i.e., in both adulthood and childhood) did not appear to be an important predictor of PTSD symptomatology for this sample. Thus, another regression was conducted in which both types of psychological abuse were removed. This model emerged as significant, explaining 76% of the variance in PTSD symptomatology. These findings, despite Pico-Alfonso et al.'s (2006) findings that psychological abuse appeared to be the best predictor of PTSD development, appear sensible. At the diagnostic level, the DSM requires an individual to be subjected to "…actual or threatened death or serious injury…" (American Psychiatric Association, 2000, p. 467) to meet criteria for PTSD. Thus, many included examples of psychological abuse (e.g., "My partner called me fat or ugly.") are insufficient to generate perceived threat that rises to the threshold necessary for a PTSD diagnosis.

Some researchers have highlighted severity of abuse experiences as an important variable when attempting to project or retrospectively examine PTSD development (e.g., American Psychiatric Association, 2000; Bennice et al., 2003; Brewin, Andrews, & Valentine, 2000; Golding, 1999). Fortunately, data were collected from this sample regarding injury sustained from both childhood and adulthood IPV abuse experiences. I used this data to examine whether injury sustained from abuse better contributed to the model than abuse itself. Indeed, the model was again significant explaining 75% of the variance in PTSD symptomatology. From a diagnostic perspective, which is highlighted again due to the use of PTSD symptomatology as the outcome variable, this finding is essentially the inverse of the previous analysis. Wherein verbal insults are insufficient to meet the criterion A requirement of a PTSD diagnosis, injury is theoretically a good

proximal measure of the criterion A requirement. That is, violence significant enough to cause injury likely increases the victim's perception of threat of death or serious injury.

Previous risk factor research begged the question of what role demographic factors might play in the overall model. Given the strong statistical overlap between annual household income level and highest level of educational attainment, income level was used as a proxy for both. Using federal poverty guidelines, participants were split into two groups by income level and a new regression analysis was ran, which controlled for income in step one. Results indicated that while income was indeed a significant and unique contributor to the model, each of the other predictors remained significant contributors as well, with this model explaining 69% of the variance in PTSD symptomatology.

Finally, findings of prior researchers have suggested that the experience of both childhood abuse and adulthood IPV victimization experiences do not better predict PTSD incidence than adulthood IPV victimization alone (e.g., Guerrero, 2006; Mezey, Bacchus, Bewley, & White, 2005). Rather, their findings suggest that the combination of both types of abuse experiences is a good predictor of PTSD symptom severity, but not incidence (e.g., Guerrero, 2006; Mezey, Bacchus, Bewley, & White, 2005). Given these findings, I believed it would be prudent to test this assertion in the current sample. While I did find that the model using incidence (i.e., rather than symptom severity) was weaker (i.e., explaining only 50% of the variance in PTSD incidence), it remained significant. This finding is consistent with Foa et al.'s (1989) theory that individuals, vis-à-vis conditioning, develop fear networks, as depicted in Figures 3 and 4. Exposure to a singular traumatic event may be sufficient to develop a PTSD response. In theory,

however, childhood maltreatment establishes a fear network during a critical developmental stage. If the child then carries forth this associative fear network and then is later revictimized, it not only activates, but builds upon, the existing fear network. This has the potential to not only reaffirm the existing fear network, but add to it (i.e., in stimulus elements and meaning structures), thus highlighting a process of additive associative learning. As fear networks are "confirmed" and expanded, the individual's response elements might also expand and become more rigid or severe. An outcome of this process could be quantified in severity of PTSD symptoms.

Importantly, maladaptive cognitions consistently (i.e., in both primary and post-hoc analyses) emerged as the variable with the most explanatory power in each model. In the primary model, maladaptive cognitions explained 40% more of the variance in PTSD symptomatology than IPV victimization and 33% more of the variance in PTSD symptomatology than childhood maltreatment. These findings are consistent with the cognitive suppositions of Foa et al.'s (1989) associative fear network modeling, which subsequently informed Ehlers and Clark's (2000) cognitive model of PTSD. Both of these teams have postulated that PTSD is the direct sequela of cognitive appraisals, thus, the indirect sequela of traumatic events. The responses of this sample suggest that, indeed, cognitions may be the pivot-point through which PTSD does or does not develop.

In sum, the current sample generated robust support for my second hypothesis (i.e., childhood abuse experiences and maladaptive cognitions partially mediating the relation between adulthood IPV experiences and PTSD symptomatology). This support was consistent throughout initial analyses and post-hoc analyses, whether I used sum abuse scores or individual abuse type scores to represent abuse experiences, when I used

variables representative of other definitions of abuse severity, when I controlled for significant demographic variables, and when I examined PTSD incidence rather than PTSD symptomatology. For this sample, childhood abuse experiences and maladaptive cognitions better explained PTSD symptomatology development than adulthood IPV victimization alone, which is consistent with my expectations, as outlined in the introduction.

A. Limitations and Future Directions

1. Self-report and retrospective design. A rather obvious limitation of the study is its retrospective, self-report design. Extant literature (e.g., Howard, 1980; Podsakoff & Organ, 1986) cautions researchers on the use and interpretation of retrospective, self-report measures, as such methodology is at risk for participants responding to demand characteristics, apprehension of evaluation, and an inability to accurately recall past events. When examining incidence of abuse experiences across the lifetime to evaluate outcomes, prospective designs can be insurmountable undertakings in terms of funding, staffing, time commitment, attrition, and base rates of events of interest. This is not to suggest prospective designs of this nature are impossible. Rather, other means of improving the design might be considered first. For example, the use of collateral data (e.g., DHS involvement, police reports) could strengthen the methodological rigor.

2. Incidences of other trauma types. In this study, the only types of traumatic events assessed for were childhood maltreatment and adulthood IPV victimization. Other lifetime experiences of trauma were not accounted for, despite other traumatic events' (e.g., combat, natural disaster, non-partner perpetrated rape, robbery, motor vehicle accident) potential for contributing to PTSD development (American Psychiatric

Association, 2000). Finkelhor and colleagues (2011), for example, reviewed the covariance of traumatic event exposure and found that children who had experienced one type of violence were at a substantially higher risk of experiencing subsequent violence. Importantly, these researchers highlight the endurance of this probability, irrespective of the identity of the perpetrator (i.e., familial relatedness is not necessary) or type (e.g., physical, sexual) of violence experienced. Their work on polyvictimization underscores the potential for revictimization negative mental health outcomes (e.g., "complex trauma") among individuals who have experienced previous trauma. This potential only increases as the number of traumatic experiences increases. Thus, future studies of this type may benefit from assessing the experience of other types of traumatic events, as controlling for these events could strengthen confidence in the current model or elucidate confounding traumatic events.

3. Comparability of childhood maltreatment. The CMIS-SF (Briere, 1992 & n.d.) is designed to be a flexible (i.e., modifiable based on the needs of the user) measure of child abuse experiences. Accordingly, the author invites researchers to use it "in different ways according to their interests" (Briere, n.d.). Thus, I modified it to mimic the formatting, scaling, and coding of the CTS2 for this study. While this degree of measurement plasticity might be alluring, it presents statistical quandaries that outshine the benefits of flexibility. Briere (n.d.) reported on his webpage, "…there are no studies known to the author regarding the overall reliability or validity of CMIS-SF." This problem is only amplified by my further alteration of an already non-validated measure.

Indeed, the CMIS-SF had excellent reliability in this study ($\alpha = .93$), yet its lack of established, generalizable, validated psychometrics nulls its broader interpretive utility.

There are not established cut-points, for example, for estimating what proportion of my sample endorsed experiences that exceed the normative range of experiences for the general population. The lack of normative ranges, cut-points, *t*-scores, or other statically validated numerical frameworks thwarts my ability to make qualitative inferences about the characteristics of my sample. I theorize that my sample represents a group with abuse experiences that proportionally exceed that of the general population (i.e., based upon my non-proportionate quota sampling methods and the higher-than-average mean scores obtained on the CDS and PCL-C), but I have no definitive statistical ground on which to make this claim.

Future studies would be improved by selecting abuse measures with well-established, validated psychometrics. Specifically, a measure with robust normative data is recommended.

4. Assessing lifetime experiences of IPV victimization. Of early concern were the assessment and scoring conventions for the CTS2. Respondents were instructed to rate how often specific behaviors occurred within the last year using an eight-point (i.e., 0 = *this has never happened*, 1 = *once in the past year*, 6 = *more than 20 times in the past year*, 7 = *not in the past year, but happened before*) Likert-style scale (Straus et al., 1996). In scoring, users are instructed to recode responses of "7" to "0" (Straus, n.d.), which was the convention followed for this study. Notably, individuals who experienced a decade of severe IPV victimization that ended 366 days previously, for example, could be relegated to the same category as individuals who never experienced IPV victimization. PTSD can be chronic in nature (American Psychiatric Association, 2000), and the DSM-IV-TR includes a specifier of "chronic" for individuals who experience

symptoms for three months or more (American Psychiatric Association, 2000). Furthermore, individuals with IPV victimization experiences, even those that ended over a year prior to involvement in this study, may be qualitatively different in relation to key variables than those individuals who have never experienced IPV victimization. Additionally, of those that responded "7," no data were collected to determine if they had experienced one instance of a given abuse scenario versus 20 or more instances of a given abuse scenario. Since this instrument is a frequency measure, responses of "7" are rendered incomparable to individuals who endorsed abuse experiences occurring the last year. Thus, a more accurate lifetime assessment of IPV victimization would be warranted in future studies. With those data, individuals whose IPV victimization ended more than a year prior could be compared with individuals who have experienced IPV victimization in the past year or have never experienced IPV victimization to determine if they significantly differ in any meaningful ways.

5. DSM-5 release, maladaptive cognitions, and PTSD. The high correlation ($r = .846$, $p < .001$) found between maladaptive cognitions and PTSD symptomatology (i.e., as measured by TSI-2 sum score) is potentially problematic. To avoid multicollinearity problems, r values of $\geq .7$ are not recommended between variables (Pallant, 2005). I believed the strong relation existing between my predictor and outcome variables presented a methodological dilemma. I examined the possibility of using one or more (i.e., rather than all five) of the CDS subscales or one or more (i.e., rather than all four) of the TSI-2 factors. The only combination of subscales and factors, however, which did not consistently pose a multicollinearity problem was the TSI-2 somatization factor when compared with each of the five CDS subscales (i.e., r values ranged from .593-.657).

Unfortunately, I lacked an evidence-based rationale by which to exclude the other three TSI-2 factors. I briefly speculated that perhaps maladaptive cognitions were heavily related to the TSI-2 due to the TSI-2's broad brush approach to assessing for many non-criterion dimensions of the posttraumatic stress construct (i.e., it might assess more cognitive variables than expected). Thus, the relation between maladaptive cognitions and the PCL-C was examined, as the PCL-C is briefer, more specific to DSM-IV-TR criteria, and is not subdivided into factor structures. Nevertheless, this relation emerged as nearly equally strong ($r = .836$, $p < .001$). Given this lingering concern, I closely examined other indices of multicollinearity problems. For my primary model, the tolerance level was .819, which is greater than the recommended (Pallant, 2005) minimum of .10. The VIF value was 1.220, which is less than the recommended (Pallant, 2005) maximum of 10. Thus, I proceeded as planned.

This information is presented here, however, to facilitate dialogue about the potential need for a different means of measuring maladaptive cognitions as they relate to PTSD. First, one argument is that the DSM-5 has updated PTSD criteria—based on extant research—to include cognitive-specific criteria (i.e., criterion-D; American Psychiatric Association, 2013). Among others, these criteria include memory impairment, negative beliefs about the self, and self-blame (National Center for PTSD, 2014). Thus, this study, which was conducted prior to the release of the DSM-5, may be prematurely archaic in its inclusion of maladaptive cognitions' role in predicting PTSD. The new criteria structure of PTSD suggests maladaptive cognitions are now thought to be characteristics inherent to PTSD, which might make the inclusion of maladaptive cognitions in my analyses a moot point.

Conversely, the conceptualization of the study may not be prematurely archaic, but may merely require different methodology to more accurately identify which cognitive styles best predict PTSD outcomes, as the diagnostic criteria do not necessarily aim to elucidate specific mechanisms of etiology. One potential argument is that a set of yet-undefined maladaptive cognitions exist prior to the onset of PTSD, thereby creating a vulnerability pathway by which the development of PTSD is facilitated. These "preexisting" maladaptive cognitions might be qualitatively distinct from those manifest in criteria-based PTSD. If this is the case, future research would need to identify and develop a way to measure these preexisting maladaptive cognitions.

Finally, it is possible that the CDS is not the best measure for maladaptive cognitions, particularly as it relates to this particular study. The CDS, for example, largely measures maladaptive cognitions related to self-concept (e.g., self-criticism, self-blame, helplessness), which are heavily represented in DSM-5 PTSD criteria. Cognitions related to resiliency, posttraumatic growth, or those that approximate functional impairment might be interesting alternatives, as they may predict, but not overlap with, PTSD symptomatology. Future queries would need to carefully examine this question.

6. Temporal precedence. The determination of temporal precedence is important to my theoretical suppositions, but is far beyond the scope of this study. Childhood abuse, adulthood IPV victimization, and maladaptive cognitions are each central to this study, yet this study is unable to speak to whether maladaptive cognitions preceded childhood maltreatment, was secondary to childhood maltreatment, or was secondary to adulthood IPV victimization. This quandary was subtly earmarked in the illustrative depiction of my analytic model (see Figure 6). The choice to stack childhood

maltreatment on top of maladaptive cognitions was intentionally made to avoid the appearance of any premature conclusions on temporal precedence. Additionally, the absence of determination on temporal precedence guided the use of Baron and Kenny's (1986) approach to testing mediation. MacArthur's (Chmura Kraemer, Kiernan, Essex, & Kupfer, 2008) approach to mediation requires the mediator to always follow that which it mediates and requires a longitudinal research design, two points which preclude the current study from using MacArthur's guidance. Future directions might include study designs that attempt to determine when, where, and how maladaptive cognitions emerge in individuals who experience both childhood and adulthood IPV abuse.

7. Potentially conflicting data. Interestingly, a paper that was in-press at the time of my study highlighted results that were both similar to and divergent from my own. Gobin and colleagues (2013) examined a sample of 425 women who had experienced IPV victimization for at least three months and had experienced at least one instance of physical IPV victimization within six months of study enrollment. Gobin et al. hypothesized that childhood maltreatment (i.e., as measured by the History of Victimization Scale) would be significantly related to IPV (i.e., as measured by the CTS-2) and four PTSD symptom clusters (i.e., as measured by the Posttraumatic Diagnostic Scale), and that IPV would mediate the relation between childhood maltreatment and PTSD symptoms. While they did find that childhood maltreatment and IPV were both significantly associated with PTSD symptoms, IPV did not mediate the relation between childhood maltreatment and PTSD symptoms in their sample.

In post-hoc analyses of my sample (not previously reported), wherein the order of entry were switched to control for childhood maltreatment and examine whether IPV

(and maladaptive cognitions) mediated the relation between childhood maltreatment and PTSD symptomatology, I did find a significant mediation effect [F (3, 240) = 227.778, p < .001, R^2 = 73.7%]. Removal of maladaptive cognitions yielded a weaker, but still significant model [F (3, 241) = 39.615, p < .001, R^2 = 24.7%], highlighting a partial mediation effect of IPV victimization on the relation between childhood maltreatment experiences and PTSD symptomatology.

These outcome differences might be explained in a variety of ways. Gobin and colleagues employed full, purposive sampling methods, whereas I used non-proportionate quota sampling. Resultantly, our samples are qualitatively different. Theirs includes only individuals who have experienced physical IPV victimization within the past six months. Mine includes both individuals who have and have not experienced some form of lifetime IPV victimization. Of those in my sample who have experienced IPV, there was no time specifier set for inclusion. Further, 56.7% of their sample was living in a domestic violence shelter at the time of their participation. These differences suggest prominent differences in the respective acuities of the samples, which may serve as mechanisms by which we achieved different statistical outcomes. Still, Becker and colleagues (2010) used non-proportionate quota sampling methods to establish abused (i.e., IPV victimization within the previous year) and non-abused comparison groups. Irrespective of group, they found that IPV did mediate the relation between childhood maltreatment experiences and PTSD.

Gobin et al.'s findings led them to conclude that childhood maltreatment experiences chronically, significantly, and independently predict PTSD symptom outcomes, making childhood maltreatment an important target of intervention for IPV

help-seeking women. Consistent with the theoretical premise of my study, however, it is also plausible associative fear networks born of childhood maltreatment experiences were consciously dormant until reactivated by subsequent adulthood IPV experiences. This reactivation could lead both childhood maltreatment experiences and adulthood IPV victimization to be primary, present mechanisms by which PTSD symptoms develop.

8. Summation of future directions. Rarely, if ever, does it happen that researchers are able to design "perfect" or "ideal" studies, yet exploring how such studies would be designed can nudge researchers to ever-improve upon previous iterations of studies. To that end, I offer here some ways in which the current study could be perfected to answer both previously unanswered questions and questions which arose from the study.

This study, considered alongside the Becker et al. (2010) and Gobin et al. (2013) studies, poses some important questions: Are other indices are maladaptive cognitive styles (i.e., those demonstrating less overlap with DSM-5 criteria) better correlates of PTSD symptomatology outcomes? In the context of childhood maltreatment and IPV victimization experiences, when do maladaptive cognitions arise? Are women who experienced IPV victimization greater than a year ago different from those who experienced it within the past year? Are help-seeking victims of IPV different than those who do not seek help? Do non-familial/non-partner perpetrated forms of trauma exposure contribute significantly to PTSD symptomatology outcomes?

To that end, an initial future study that examines types of maladaptive cognitions that correlate, but do not demonstrate multicolleniarity, with PTSD is recommened. Constructs such as resiliency, self-efficacy, schemas of the self, and posttraumatic growth

are viable options for exploration. Given the important role of maladaptive cognitions found in the current study, additional attention to the role of maladaptive cognitions in PTSD emergence is warranted. A simple approach to exploring this question is to recruit a sample of individuals who meet criteria for PTSD and administer multiple cognitive measures. Cognitive correlates of PTSD should be examined closely, and factor analyses might further elucidate important correlates.

Next, an examination of the emergence of maladaptive cognitions is recommended. One potential approach to examine this question is to collaborate with epiodemiological researchers (e.g., Center for Disease Control, World Health Organization) to longitudinally track a large sample of children. This would facilitate a natural emergence of subsets of children who do and do not experience childhood maltreatment. Select maladaptive cognitions measures (i.e., guided by the outcome of the above study) can be admistered at multiple time points to determine the temporal emergence of maladaptive cognitions in the subset of children who experience childhood maltreatment. In the event that maldaptive cognitions do not reliably emerge following childhood maltreatment, a similar design can be used to examine the emergence of maladaptive cognitions in women pre- and post-IPV victimization exposure. These designs would allow the researcher to develop an empirical basis on which to posit temporal precedence of maladaptive cognition emergence, which would allow for an appropriate use of rigorous modeling design and SEM analyses.

Given the dilemma regarding CTS2, wherein those who had experienced IPV greater than a year prior were coded the same as those who had never experienced IPV, future studies should strive to rectify this quandary. One option is to remove the “not in

the past year, but happened before" response option, thus leaving all possible responses as absolute frequency responses. Each measure item could then be followed with a *How long ago did this last happen?* question. This would allow all respondents, irrespective of length of time since last vicitimization, to respond to a consistent frequency scale. The addition of the *How long ago did this last happen?* question could then be used to create grouping variables, allowing the researcher to analyze between group similarities and differences, thus settling the question of whether the "7s" are more alike or different from those individuals who have more recently experienced IPV victimization.

As previously highlighted, the current study, Becker and colleagues (2010), and Gobin and colleagues (2013) used disparate sampling methods. The most prominent difference was Gobin et al.'s inclusion of only help-seeking women who had experienced IPV victimization within the past six months. Since Gobin et al. achieved study results that varied somewhat from the current study and Becker et al.'s study, a future study design should examine between-group differences of help-seeking versus non-help-seeking victims of IPV to determine if this subgroup membership reliably explains the differences in outcomes.

Finally, Finkelhor et al.'s (2011) work on polyvictimization should be strongly considered and incorporated into future iterations of the current study. The polyvictimizaiton literature suggests that repeat exposure to trauma (i.e., in any form) is predicitive of more negative behavioral, victimization, and mental health outcomes, which is consistent with the supposition outlined in this study that multiple incidences of interpersonal violence aggravates mental health outcomes. Future attempts to replicate this study should incorporate measures that also query experiences of trauma unrelated to

familial or partner violence to determine if these other trauma types further explain the emergence of PTSD symptomatology.

B. Conclusion

The results of this study extend the understanding of the relation between adulthood IPV victimization and PTSD symptomatology development, such that childhood abuse experiences and maladaptive cognitions were shown to partially mediate the relation. Specifically, the data suggest IPV victimization alone is not the best predictor of PTSD symptomatology development. This study is timely given the current climate of high interest in PTSD research, as well as interest in the development of empirically-supported interventions for PTSD. From a research perspective, the results of this study lend themselves well to better understanding how various factors can work in tandem to create heightened risk for PTSD development following interpersonal forms of traumatic events. From an intervention perspective, this study might highlight the need to assess patients for multiple trauma experiences, as well as maladaptive ways of thinking, because, in theory, better case conceptualization begets better treatment. The continued examination of PTSD development following interpersonal trauma is a critical area of research, and increasing this body of knowledge is essential to improving posttraumatic outcomes in individuals, thereby indirectly providing a positive impact on the broader society.

V. References

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VI. Appendices

A. Appendix A

INFORMED CONSENT

Title: Posttraumatic Symptoms following Traumatic Events

Researchers:
Joye L. Henrie, M.A., Graduate Student
Patricia Petretic, Ph.D., Faculty Advisor
University of Arkansas
College of Arts and Sciences
Department of Psychological Science
216 Memorial Hall
Fayetteville, AR 72701
479-575-4256

Administrator:
Iroshi Windwalker
Research and Sponsored Programs
Research Compliance
University of Arkansas
210 Administration Building
Fayetteville, AR 72701
479-575-2208
irb@uark.edu

Description: This study will investigate how and when posttraumatic stress symptoms occur following exposure to traumatic interpersonal events. You will be asked questions about current and past dating relationships, childhood experiences with violence, and current functioning in various domains. This information will be obtained by having you complete a questionnaire online through SurveyMonkey.

Risks and Benefits: A potential risk with participating in this study would be experiencing distress from answering questions about intimate partner violence or childhood experiences with violence. The benefit of participating in this study would be to contribute to the knowledge base about intimate partner violence. The goal of this study is to gain knowledge about how posttraumatic stress symptoms develop following experiences with violence in intimate relationships. Participants will receive the chance to win 1 of 5 $100 gift cards to Amazon.com.

Voluntary Participation: Your participation in this study is completely voluntary and you are not required or obligated to complete the questionnaire. This study should take about two (2) hours to complete.

Confidentiality: Your signed consent form will be kept separate from the completed questionnaire. Only a code number will be written on the questionnaire and it will not be associated with your name in any way. All information will be recorded anonymously and will be held confidential to the extent allowed by law and University policy.

Right to Discontinue Participation: You have the right to refuse to participate in this study or to discontinue your participation at any point without any consequences.

Informed Consent: I have read the description, including the nature and purposes of this study, the procedures to be used, the potential risks and benefits, as well as the option to discontinue participation at any time. Clicking on the button below indicates that I freely agree to participate in this research study.

Please read below and click on the button if you agree to continue your participation in this study.

 Yes, I have read the description, including the purpose of the study, the procedures to be used, the potential risks, the confidentiality, as well as the option to discontinue my participation in the study at any time. I believe I understand what is involved in this study. By clicking this button, I freely agree to participate in this experimental study.

B. Appendix B

Demographics

1. What is your age? _____

2. What is your ethnicity?
   - o White/Caucasian
   - o Black/African American
   - o Hispanic/Latina
   - o Asian/Asian American
   - o Native Hawaiian or other Pacific Islander
   - o American Indian or Alaska Native
   - o Other (please specify)

3. What is your marital status?
   - o Single/Never Married
   - o A member of an unmarried couple (Dating/Cohabitating/Engaged)
   - o Married
   - o Widowed
   - o Separated
   - o Divorced
   - o Other (please specify:_____)

4. If in a relationship, how long have you been in your current relationship? _____

5. How many children under 18 are living in your home? _____

6. What is the total number of people living in your household? _____

7. What is the highest grade or year of school you completed?
   - o Never attended school or only attended kindergarten
   - o Grades 1 through 8 (Elementary)
   - o Grades 9 through 11 (Some high school)
   - o Grade 12 or GED (High school graduate)
   - o Some college or technical school (incomplete)
   - o Technical degree or certification
   - o 2 year degree
   - o 4 year degree
   - o Master's degree (or equivalent)
   - o Post Graduate/Professional School (Ph.D., M.D., or equivalent)

8. Are you currently…(mark all that apply)?
- o Employed full time
- o Employed part-time
- o Out of work for more than 1 year
- o Out of work for less than 1 year
- o Homemaker
- o Student
- o Retired
- o Unable to work

9. Is your annual household income from all sources—
- o Less than $10,000
- o Less than $15,000 ($10,000 to less than $15,000)
- o Less than $20,000 ($15,000 to less than $20,000)
- o Less than $25,000 ($20,000 to less than $25,000)
- o Less than $35,000 ($25,000 to less than $35,000)
- o Less than $50,000 ($35,000 to less than $50,000)
- o Less than $75,000 ($50,000 to less than $75,000)
- o $75,000 or more

10. What is your sexual orientation?
- o Heterosexual
- o Homosexual
- o Bisexual
- o Other (please specify) _____

11. In which state do you live?
- o Alabama
- o Alaska
- o Arizona
- o Arkansas
- o California
- o Colorado
- o Connecticut
- o Delaware
- o District of Columbia
- o Florida
- o Georgia
- o Hawaii
- o Idaho
- o Illinois
- o Indiana
- o Iowa
- o Kansas
- o Kentucky
- o Louisiana
- o Maine
- o Maryland
- o Massachusetts

- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming
- Other

C. Appendix C

Revised Conflict Tactics Scale (CTS2; Straus et al., 1996)

No matter how well couples get along, there are times when they disagree, get annoyed with the other person, want different things from each other, or just have spats or fights because they are in a bad mood, are tired, or for some other reason. Couples also have many different ways of settling their differences. This is a list of things that might happen when you have differences. Please circle how many times you did each of the following things **in the past year**, and how many times your partner did them in the past year. If you or your partner did not do one of these things in the past year, but it happened before that, circle '7.'

How often did this happen?

0 = this has never happened	4 = 6-10 times in the past year
1 = once in the past year	5 = 11-20 times in the past year
2 = twice in the past year	6 = more than 20 times in the past year
3 = 3-5 times in the past year	7 = **not in the past year, but happened before**

---

1. I showed my partner I cared even though we disagreed.	0	1	2	3	4	5	6	7
2. My partner showed care for me even though we disagreed.	0	1	2	3	4	5	6	7
3. I explained my side of a disagreement to my partner.	0	1	2	3	4	5	6	7
4. My partner explained his or her side of a disagreement to me.	0	1	2	3	4	5	6	7
5. I insulted or swore at my partner.	0	1	2	3	4	5	6	7
6. My partner did this to me.	0	1	2	3	4	5	6	7
7. I threw something at my partner that could hurt.	0	1	2	3	4	5	6	7
8. My partner did this to me.	0	1	2	3	4	5	6	7
9. I twisted my partner's arm or hair.	0	1	2	3	4	5	6	7
10. My partner did this to me.	0	1	2	3	4	5	6	7
11. I had a sprain, bruise, or small cut because of a fight with my partner.	0	1	2	3	4	5	6	7
12. My partner had a sprain, bruise, or small cut because of a fight with me.	0	1	2	3	4	5	6	7
13. I showed respect for my partner's feelings about an issue.	0	1	2	3	4	5	6	7
14. My partner showed respect for my feelings about an issue.	0	1	2	3	4	5	6	7
15. I made my partner have sex without a condom.	0	1	2	3	4	5	6	7
16. My partner did this to me.	0	1	2	3	4	5	6	7
17. I pushed or shoved my partner.	0	1	2	3	4	5	6	7
18. My partner did this to me.	0	1	2	3	4	5	6	7

19. I used force (like hitting, holding down, or using a weapon) to make my partner have oral or anal sex.	0	1	2	3	4	5	6	7
20. My partner did this to me.	0	1	2	3	4	5	6	7
21. I used a knife or gun on my partner.	0	1	2	3	4	5	6	7
22. My partner did this to me.	0	1	2	3	4	5	6	7
23. I passed out from being hit on the head by my partner in a fight.	0	1	2	3	4	5	6	7
24. My partner passed out from being hit on the head in a fight with me.	0	1	2	3	4	5	6	7
25. I called my partner fat or ugly.	0	1	2	3	4	5	6	7
26. My partner called me fat or ugly.	0	1	2	3	4	5	6	7
27. I punched or hit my partner with something that could hurt.	0	1	2	3	4	5	6	7
28. My partner did this to me.	0	1	2	3	4	5	6	7
29. I destroyed something belonging to my partner.	0	1	2	3	4	5	6	7
30. My partner did this to me.	0	1	2	3	4	5	6	7
31. I went to the doctor because of a fight with my partner.	0	1	2	3	4	5	6	7
32. My partner went to the doctor because of a fight with me.	0	1	2	3	4	5	6	7
33. I choked my partner.	0	1	2	3	4	5	6	7
34. My partner did this to me.	0	1	2	3	4	5	6	7
35. I shouted or yelled at my partner.	0	1	2	3	4	5	6	7
36. My partner did this to me.	0	1	2	3	4	5	6	7
37. I slammed my partner against a wall.	0	1	2	3	4	5	6	7
38. My partner did this to me.	0	1	2	3	4	5	6	7
39. I said I was sure we could work out a problem.	0	1	2	3	4	5	6	7
40. My partner was sure we could work it out.	0	1	2	3	4	5	6	7
41. I needed to see a doctor because of a fight with my partner, but I didn't.	0	1	2	3	4	5	6	7
42. My partner needed to see a doctor because of a fight with me, but didn't.	0	1	2	3	4	5	6	7
43. I beat up my partner.	0	1	2	3	4	5	6	7
44. My partner did this to me.	0	1	2	3	4	5	6	7
45. I grabbed my partner.	0	1	2	3	4	5	6	7

46. My partner did this to me.	0	1	2	3	4	5	6	7
47. I used force (like hitting, holding down, or using a weapon) to make my partner have sex.	0	1	2	3	4	5	6	7
48. My partner did this to me.	0	1	2	3	4	5	6	7
49. I stomped out of the room or house or yard after a disagreement.	0	1	2	3	4	5	6	7
50. My partner did this to me.	0	1	2	3	4	5	6	7
51. I insisted on having sex when my partner did not want to (but did not use physical force).	0	1	2	3	4	5	6	7
52. My partner did this to me.	0	1	2	3	4	5	6	7
53. I slapped my partner.	0	1	2	3	4	5	6	7
54. My partner did this to me.	0	1	2	3	4	5	6	7
55. I had a broken bone from a fight with my partner.	0	1	2	3	4	5	6	7
56. My partner had a broken bone from a fight with me.	0	1	2	3	4	5	6	7
57. I used threats to make my partner have oral or anal sex.	0	1	2	3	4	5	6	7
58. My partner did this to me.	0	1	2	3	4	5	6	7
59. I suggested a compromise to a disagreement.	0	1	2	3	4	5	6	7
60. My partner suggested a compromise to a disagreement.	0	1	2	3	4	5	6	7
61. I burned or scalded my partner on purpose.	0	1	2	3	4	5	6	7
62. My partner did this to me.	0	1	2	3	4	5	6	7
63. I insisted on having oral or anal sex with my partner (but did not use physical force).	0	1	2	3	4	5	6	7
64. My partner did this to me.	0	1	2	3	4	5	6	7
65. I accused my partner of being a lousy partner.	0	1	2	3	4	5	6	7
66. My partner did this to me.	0	1	2	3	4	5	6	7
67. I did something to spite my partner.	0	1	2	3	4	5	6	7
68. My partner did this to me.	0	1	2	3	4	5	6	7
69. I threatened to hit or throw something at my partner.	0	1	2	3	4	5	6	7
70. My partner did this to me.	0	1	2	3	4	5	6	7
71. I still felt physical pain the next day because of a fight we had.	0	1	2	3	4	5	6	7
72. My partner still felt pain the next day because of a fight we had.	0	1	2	3	4	5	6	7

73. I kicked my partner.	0	1	2	3	4	5	6	7
74. My partner did this to me.	0	1	2	3	4	5	6	7
75. I used threats to make my partner have sex.	0	1	2	3	4	5	6	7
76. My partner did this to me.	0	1	2	3	4	5	6	7
77. I agreed to try a solution to a disagreement my partner suggested.	0	1	2	3	4	5	6	7
78. My partner agreed to try a solution I suggested.	0	1	2	3	4	5	6	7

D. Appendix D

Trauma Symptom Inventory-2 (TSI-2; Briere, 2011)

In the last 6 months, how often have you experienced:

0 = Never 1 2 3 = Often

1.	Nervousness	0	1	2	3
2.	Sadness	0	1	2	3
3.	Feeling mad or angry inside	0	1	2	3
4.	Nightmares or bad dreams	0	1	2	3
5.	Trying to forget about a bad time in your life	0	1	2	3
6.	Feeling like you were in a dream	0	1	2	3
7.	Not being honest with someone	0	1	2	3
8.	Aches or pains	0	1	2	3
9.	Bad thoughts or feelings during sex	0	1	2	3
10.	Wishing you were dead	0	1	2	3
11.	Not letting people get to know you very well	0	1	2	3
12.	Feeling like you don't know who you really are	0	1	2	3
13.	Doing something self-destructive during or after an argument	0	1	2	3
14.	Feeling so irritable after a trauma that you got into physical fights with strangers	0	1	2	3
15.	Trouble getting to sleep or staying asleep because you were feeling tense	0	1	2	3
16.	Feeling hopeless	0	1	2	3
17.	Trouble controlling your temper	0	1	2	3
18.	Just for a moment, seeing or hearing something upsetting that happened earlier in your life	0	1	2	3
19.	Not letting yourself feel bad about the past	0	1	2	3
20.	People saying that you don't pay enough attention to what's going on around you	0	1	2	3
21.	Regretting something that you said or did	0	1	2	3
22.	Nausea or an upset stomach	0	1	2	3
23.	Having sex with someone you hardly knew	0	1	2	3
24.	Attempting suicide	0	1	2	3
25.	Feeling abandoned or rejected	0	1	2	3
26.	Being easily influenced by others	0	1	2	3
27.	Becoming so upset that you had to do something dramatic to calm yourself down	0	1	2	3
28.	Because of a trauma in your past, not being able to eat or drink anything for days	0	1	2	3
29.	Feeling afraid of certain things, even though there probably wasn't any real danger	0	1	2	3
30.	Being so depressed that you didn't feel like eating	0	1	2	3

31.	Getting angry about something that wasn't very important	0	1	2	3
32.	Flashbacks (sudden memories or images of upsetting things)	0	1	2	3
33.	Stopping yourself from thinking about the past	0	1	2	3
34.	Feeling like you were outside of your body	0	1	2	3
35.	Feeling unhappy about something	0	1	2	3
36.	Lower back pain	0	1	2	3
37.	Feeling anxious about sex	0	1	2	3
38.	Fantasies about dying	0	1	2	3
39.	Feeling uncomfortable when someone got too close	0	1	2	3
40.	Not knowing yourself very well	0	1	2	3
41.	Calming yourself down by eating more than you should	0	1	2	3
42.	Having flashbacks many times a day, every day, for several weeks at a time	0	1	2	3
43.	Feeling jumpy	0	1	2	3
44.	Feeling so depressed that you avoided people	0	1	2	3
45.	Having angry thoughts	0	1	2	3
46.	Violent dreams	0	1	2	3
47.	Trying to block out certain memories	0	1	2	3
48.	Feeling like there were two or more people inside of you	0	1	2	3
49.	Being in a bad mood	0	1	2	3
50.	Indigestion	0	1	2	3
51.	Wanting to have sex with someone who you knew was bad for you	0	1	2	3
52.	Intentionally overdosing on pills or drugs	0	1	2	3
53.	Worrying that someone didn't like you anymore	0	1	2	3
54.	Getting talked out of things too easily	0	1	2	3
55.	Doing something that you shouldn't have done because you were so upset	0	1	2	3
56.	Being so frightened by a bad memory that you were temporarily paralyzed	0	1	2	3
57.	Worrying about things more than you needed to	0	1	2	3
58.	Feeling worthless	0	1	2	3
59.	Yelling or telling people off	0	1	2	3
60.	Suddenly feeling like you were back in the past when something bad happened	0	1	2	3
61.	Trying not to have any feelings about something that once hurt you	0	1	2	3
62.	Feeling like things weren't real	0	1	2	3
63.	Making a mistake	0	1	2	3
64.	Muscle spasms	0	1	2	3
65.	Problems in your sexual relations with another person	0	1	2	3
66.	Feeling so hopeless that you wanted to die	0	1	2	3
67.	Keeping people at a distance	0	1	2	3
68.	Feeling like there is no "real you" inside of yourself	0	1	2	3
69.	Throwing or hitting things because you were out of control of	0	1	2	3

	your feelings				
70.	Memories of a trauma that were so upsetting that you fainted or passed out	0	1	2	3
71.	Watching out for danger	0	1	2	3
72.	Low self-esteem	0	1	2	3
73.	Getting angry when you didn't want to	0	1	2	3
74.	Your heart suddenly going fast when you were reminded of a bad thing	0	1	2	3
75.	Trying not to think about something upsetting from your past	0	1	2	3
76.	Not feeling like your real self	0	1	2	3
77.	Worrying about something	0	1	2	3
78.	Ringing in your ears	0	1	2	3
79.	Not protecting yourself during sex when you probably should have	0	1	2	3
80.	Trying to kill yourself, but then changing your mind	0	1	2	3
81.	Worrying that people didn't really care about you	0	1	2	3
82.	Your opinions changing when you were with other people	0	1	2	3
83.	Punishing yourself so you would feel less guilty	0	1	2	3
84.	Having so much trouble concentrating after a trauma that you forgot where you lived	0	1	2	3
85.	Your mind going over and over things that might go wrong	0	1	2	3
86.	Feeling depressed	0	1	2	3
87.	Thoughts or fantasies about hurting someone	0	1	2	3
88.	Sudden disturbing memories when you were not expecting them	0	1	2	3
89.	Trying not to think or talk about things in your life that were painful	0	1	2	3
90.	"Spacing out"	0	1	2	3
91.	Saying something negative about someone behind his or her back	0	1	2	3
92.	Chest pain	0	1	2	3
93.	Sexual problems	0	1	2	3
94.	Suicidal thoughts	0	1	2	3
95.	Avoiding relationships with people	0	1	2	3
96.	Not being sure of what you want in life	0	1	2	3
97.	Doing something violent because you were so upset	0	1	2	3
98.	Since a traumatic event, not having much memory about the past	0	1	2	3
99.	Having trouble paying attention to things because you were so tense	0	1	2	3
100.	Not enjoying things that other people enjoy because you were so depressed	0	1	2	3
101.	Starting arguments or picking fights	0	1	2	3
102.	Suddenly being reminded of something bad	0	1	2	3
103.	Pushing painful memories out of your mind	0	1	2	3

104.	Having trouble remembering the details about something bad that happened to you	0	1	2	3
105.	Feeling impatient with someone	0	1	2	3
106.	Difficulties swallowing	0	1	2	3
107.	Getting into trouble because of sex	0	1	2	3
108.	Doing something dangerous and hoping you might die	0	1	2	3
109.	Feeling like someone didn't pay enough attention to you	0	1	2	3
110.	Needing other people to tell you what to do	0	1	2	3
111.	Doing something exciting to stop yourself from having bad feelings	0	1	2	3
112.	A memory that was so upsetting that you couldn't do simple things, like walk or dress yourself	0	1	2	3
113.	Feeling afraid you might die or be injured	0	1	2	3
114.	Feeling bad about yourself	0	1	2	3
115.	Wanting to hit someone or something	0	1	2	3
116.	Memories of the past that won't go away	0	1	2	3
117.	Staying away from certain people or places because they reminded you of something	0	1	2	3
118.	Finding yourself someplace and not knowing how you got there	0	1	2	3
119.	Dizziness	0	1	2	3
120.	Feeling ashamed about your sexual feelings or behavior	0	1	2	3
121.	Thinking about killing yourself	0	1	2	3
122.	Not needing people	0	1	2	3
123.	Getting confused about what you thought or believed	0	1	2	3
124.	Intentionally hurting yourself (for example, by scratching, cutting, or burning) as a way to stop upsetting thoughts or feelings	0	1	2	3
125.	After a bad thing happened, feeling irritable or easily angered	0	1	2	3
126.	Hating yourself	0	1	2	3
127.	Wishing you weren't so angry all the time	0	1	2	3
128.	Getting upset when you were reminded of something from your past	0	1	2	3
129.	Not letting yourself have upsetting thoughts	0	1	2	3
130.	Feeling like you were watching yourself from far away	0	1	2	3
131.	Trouble keeping your balance	0	1	2	3
132.	Being sexual when it probably wasn't a good idea	0	1	2	3
133.	Trying to end your life	0	1	2	3
134.	Not asking for something you wanted because you might be rejected or turned down	0	1	2	3
135.	Not trusting your own thoughts or feelings when people disagreed with you	0	1	2	3
136.	Doing something that you shouldn't do as a way to stop feeling empty or upset	0	1	2	3

E. Appendix E

PTSD CheckList – Civilian Version (PCL-C; Weathers et al., 1994)

Instruction to respondent: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully. Select the appropriate box to indicate how much you have been bothered by that problem **in the last 6 months**.

		Not at all (1)	A little bit (2)	Moderately (3)	Quite a bit (4)	Extremely (5)
1.	Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?					
2.	Repeated, disturbing dreams of a stressful experience from the past?					
3.	Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?					
4.	Feeling very upset when something reminded you of a stressful experience from the past?					
5.	Having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of a stressful experience from the past?					
6.	Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it?					
7.	Avoid activities or situations because they remind you of a stressful experience from the past?					
8.	Trouble remembering important parts of a stressful experience from the past?					
9.	Loss of interest in things that you used to enjoy?					
10.	Feeling distant or cut off from other people?					
11.	Feeling emotionally numb or being unable to have loving feelings for those close to you?					
12.	Feeling as if your future will					

	somehow be cut short?					
13.	Trouble falling or staying asleep?					
14.	Feeling irritable or having angry outbursts?					
15.	Having difficulty concentrating?					
16.	Being “super alert” or watchful on guard?					
17.	Feeling jumpy or easily startled?					

F. Appendix F

Childhood Maltreatment Interview Schedule Short Form (CMIS-SF; Briere, n.d.) - Modified

The following survey asks about things that may have happened to you **before you were 17 years old**. Please answer all of the questions that you can, as honestly as possible.

1.	Prior to age 17, how often did you witness (see or hear) your father/step-father/other father-figure…	
a.	…**push, shove, grab, slap, or throw something at** your mother/step-mother/other mother-figure?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
b.	…**choke, beat up, burn, kick, or use a knife or gun on** your mother/step-mother/other mother-figure?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
c.	…**threaten** your mother/step-mother/other mother-figure **with physical harm or death**?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
2.	Prior to age 17, how often did you witness (see or hear) your mother/step-mother/other mother-figure…	
a.	…**push, shove, grab, slap, or throw something at** your father/step-father/other father-figure?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
b.	…**choke, beat up, burn, kick, or use a knife or gun on** your father/step-father/other father-figure?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
c.	…**threaten** your father/step-father/other father-figure **with physical harm or death**?	o 0 times o 1-5 times o 6-10 times

		o 9-15 times o 16-20 times o More than 20 times
3.	If any of the above things happened, were your parents/step-parents/other parent-figures doing these things to each other at the same time?	o Yes o No
4.	Did any of these things result in someone needing medical care?	o Yes o No
5.	Did any of these things result in the police being called?	o Yes o No
6.	Did any of these things result in child welfare (DHS, DCFS) getting involved?	o Yes o No
7.	Prior to age 17, how often did your parent, stepparent, or other caregiver…	
a.	…insult you, call you names, put you down, or tell you that you were unwanted?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
b.	…try to make you feel guilty, feel ashamed, or feel like you were a bad person?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
c.	…give you humiliating punishments or try to humiliate you in front of others?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
d.	…destroy things that you cared about?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
e.	…give you the “silent treatment” for more than 24 hours?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
f.	…threaten to withhold your basic needs (for example: food, clothing, shelter)?	o 0 times o 1-5 times

		o 6-10 times o 9-15 times o 16-20 times o More than 20 times
g.	…threaten to disown or abandon you?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
h.	…put you in a role-reversal (for example: came to you for emotional support, wanted you to solve their problems)?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
i.	…threaten you with bodily harm (but did not actually physically harm you)?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
j.	…threaten your life (but did not actually physically harm you)?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
k.	…threaten to harm him- or herself or actually harm him- or herself?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
8.	Did you ever witness any of these things happening to your sibling, step-sibling, or another child in your caregiver's care?	o Yes o No
9.	Prior to age 17, how often did your parent, stepparent, or other caregiver…	
a.	…spank you so hard that you had bruises, welts, or other marks?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
b.	…push, shove, grab, scratch, slap, bite, shake, or throw	o 0 times

	something at you?	o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
c.	…burn, scald, choke, or suffocate you or tie you up?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
d.	…hit or punch you with their hand or kick you?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
e.	…hit you with an object?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
f.	…use a knife or gun to threaten and/or hurt you?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
g.	…give you punishments (ones that are **not already listed**) that caused physical pain (for example: kneeling on cans, exposure to extreme elements, holding out heavy objects for long periods of time)?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
10.	Did any of these things make you bleed, give you bruises or scratches, or break your bones or teeth?	o Yes o No
11.	Did any of these things result in you needing medical care?	o Yes o No
12.	Did any of these things result in the police being called?	o Yes o No
13.	Did any of these things result in child welfare (DHS, DCFS) getting involved?	o Yes o No
14.	Did you ever witness any of these things happening to your sibling, step-sibling, or another child in your caregiver's care?	o Yes o No

15.	How often did someone (5 or more years older than you were)…	
a.	…ask you to kiss them in a sexual way?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
b.	…kiss you in a sexual way, touch your body in a sexual way, or make you touch their sexual parts?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
c.	…ask to touch your body in a sexual way or ask you to touch their sexual parts?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
d.	…touch your body in a sexual way or make you touch their sexual parts?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
e.	…ask you to perform oral sex?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
f.	…have oral sex with you?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
g.	…ask you to have anal sex?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
h.	…have anal sex with you?	o 0 times o 1-5 times

		o 6-10 times o 9-15 times o 16-20 times o More than 20 times
i.	…ask you to have vaginal intercourse?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
j.	…have vaginal intercourse with you?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
k.	…ask to insert a finger or object in your anus or vagina?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
l.	…insert a finger or object in your anus or vagina?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
m.	…intentionally expose you to sexually explicit material or force you to watch sexual acts?	o 0 times o 1-5 times o 6-10 times o 9-15 times o 16-20 times o More than 20 times
16.	Did any of these things result in you needing medical care?	o Yes o No
17.	Did any of these things result in the police being called?	o Yes o No
18.	Did any of these things result in child welfare (DHS, DCFS) getting involved?	o Yes o No
19.	Did you ever witness any of these things happening to your sibling, step-sibling, or another child in your caregiver's care?	o Yes o No
20.	To the best of your knowledge, before age 17, were you ever…	
a.	…sexually abused?	o Yes

		o No
b.	…physically abused?	o Yes o No

G. Appendix G

Cognitive Distortion Scales (CDS; Briere, 2000)

Almost everyone has negative thoughts about themselves or their lives at one time or another. This questionnaire asks about how often you have some of these thoughts. Read each item, then mark how often you have had this thought or feeling **in the last month**. Indicate your answer by choosing the number that best represents your response.

Mark how often you have had this thought or feeling **in the last month**.

Never	Once	Sometimes or Twice	Often	Very Often
1	2	3	4	5

1. Putting yourself down	1	2	3	4	5
2. Blaming yourself for something that happened to you	1	2	3	4	5
3. Feeling helpless to improve your situation	1	2	3	4	5
4. Feeling hopeless	1	2	3	4	5
5. Expecting people to treat you badly	1	2	3	4	5
6. Hating yourself	1	2	3	4	5
7. Telling yourself that you got what you deserved when something had happened	1	2	3	4	5
8. Feeling like you don't have much control over what happens to you	1	2	3	4	5
9. Thinking that things will never be very good for you	1	2	3	4	5
10. The world seeming dangerous	1	2	3	4	5
11. Criticizing yourself	1	2	3	4	5
12. Being mad at yourself for getting hurt by someone	1	2	3	4	5
13. Feeling like there isn't much that you can do to fix things in your life	1	2	3	4	5
14. Not having any hope about the future	1	2	3	4	5
15. Expecting bad news	1	2	3	4	5
16. Calling yourself names	1	2	3	4	5
17. Thinking that you deserved a bad thing that happened to you	1	2	3	4	5
18. Not having control over your life	1	2	3	4	5
19. Thinking that your life will never improve	1	2	3	4	5
20. Thinking that someone might hurt you	1	2	3	4	5
21. Not liking yourself	1	2	3	4	5
22. Blaming yourself for your troubles	1	2	3	4	5

23. Thinking that there is no use trying to change things	1	2	3	4	5
24. Thinking that things will never get much better	1	2	3	4	5
25. Expecting the worse from people	1	2	3	4	5
26. Feeling unattractive	1	2	3	4	5
27. Feeling ashamed about something that happened to you	1	2	3	4	5
28. Feeling like bad things happen to you no matter how hard you try to keep them from happening	1	2	3	4	5
29. Not feeling like you will have much of a future	1	2	3	4	5
30. Thinking the worst when someone said they had something to tell you	1	2	3	4	5
31. Putting yourself down around other people	1	2	3	4	5
32. Feeling guilty about something that was done to you	1	2	3	4	5
33. Feeling like you have no control over what happens in your life	1	2	3	4	5
34. Thinking your life will never get better	1	2	3	4	5
35. Thinking that people were trying to take advantage of you	1	2	3	4	5
36. Calling yourself stupid or ugly	1	2	3	4	5
37. Blaming yourself for something, even though it probably wasn’t your fault	1	2	3	4	5
38. Not feeling like you have many choices in life	1	2	3	4	5
39. Feeling hopeless about the future	1	2	3	4	5
40. Expecting to be unfairly criticized or put down	1	2	3	4	5

H. Appendix H

Recruitment Sites and Forums

General

- Direct email solicitation of University of Arkansas female faculty & staff
    - Email list (N = 200) provided by U of A IT Department with specific privacy instructions
- Arkansas Newswire (electronic news source of the University of Arkansas)
- National Alliance on Mental Illness (NAMI) research solicitation post
    - http://www.nami.org/Template.cfm?Section=About_Research&Template=/ContentManagement/ContentDisplay.cfm&ContentID=48851#request
- Psychological Research on the Net (PRO) research solicitation post
    - http://psych.hanover.edu/Research/exponnet.html

Arkansas Domestic Violence Shelters

- Sanctuary – Harrison, AR
- Serenity, Inc. – Mountain Home, AR
- Courage House – Arkadelphia, AR
- Women and Children First – Little Rock, AR
- Living Water – Magnolia, AR
- Safe Passage – Melbourne, AR
- The Haven of Northeast Arkansas – Blytheville, AR
- Options, Inc. – Monticello, AR
- Lonoke County Safe Haven – Cabot, AR
- The Safe Place – Morrilton, AR
- Women's Crisis Center of S Arkansas – Camden, AR
- Stone County Abuse Prevention, Inc. – Mountain View, AR
- Samaritan Outreach – Dardanelle, AR
- White River Battered Women's Shelter – Newport, AR
- Turning Point Violence Intervention Program – El Dorado, AR
- CASA (Committee Against Spouse Abuse) – Pine Bluff, AR
- Anna's Place (Forrest City) – Helena, AR
- River Valley Shelter for Battered Women and Children – Russellville, AR
- Crisis Intervention Center – Ft. Smith, AR
- White County Domestic Violence Prevention – Searcy, AR
- Keeping the Faith – Sheridan, AR
- Margie's Haven House – Heber Springs, AR
- Restoration of Hope – Stuttgart, AR

- Angels of Grace – Helena, AR
- Domestic Violence Prevention and Sexual Assault Services – Texarkana, AR
- The Potter's Clay Women & Children in Crisis Shelter – Hot Springs AR
- Families in Transition – West Memphis, AR
- Women's Crisis Center of Northeast Arkansas – Jonesboro, AR
- Peace at Home – Fayetteville, AR (emailed director 4/9/13; director replied & agreed to distribute 4/9/13)
- Northwest Arkansas Women's Shelter – Rogers, AR
- Family Violence Prevention and Rape Crisis Center – Batesville, AR
- Saline County Safe Haven, Inc. – Benton, AR
- Women's Shelter of Central Arkansas – Conway, AR

Child Abuse Survivor Forums

- Delphi general discussion forum (i.e., posted to Child Abuse Survivor section)
    - http://forums.delphiforums.com/n/main.asp?webtag=hectate&nav=start&prettyurl=%2Fhectate&gid=160629880
- Adult Survivors of Child Abuse (ASCA) discussion forums - “an international self-help support group program designed specifically for adult survivors of neglect, physical, sexual, and/or emotional abuse”
    - http://www.ascasupport.org/phpBB2/index.php

PTSD Forums

- MyPTSD.org discussion forums
    - https://www.ptsdforum.org/c/
- Health Research forums (i.e., posted as PTSD research)
    - http://ehealthforum.com/health/research_and_studies.html

Parenting Forums

- Mothering.com discussion forums (i.e., posted to the following sections: personal growth, talk amongst ourselves, parenting, gentle discipline, health & healing/mental health)
    - http://www.mothering.com/community/f/

I. Appendix I

DEBRIEFING FORM

Title: Posttraumatic Symptoms following Traumatic Events

Researchers:
Joye L. Henrie, M.A., Graduate Student
Patricia Petretic, Ph.D., Faculty Advisor
University of Arkansas
College of Arts and Sciences
Department of Psychological Science
216 Memorial Hall
Fayetteville, AR 72701
479-575-4256

Administrator:
Iroshi Windwalker
Research and Sponsored Programs
Research Compliance
University of Arkansas
210 Administration Building
Fayetteville, AR 72701
479-575-2208
irb@uark.edu

Thanks for participating in this study investigating posttraumatic symptoms following traumatic events.

This research study investigates how childhood experiences, current thoughts and beliefs, and approaches to relationships influence the development of posttraumatic stress symptoms following intimate partner violence experiences.

The results of this research will help us to better understand the impact that preexisting factors have on the likelihood of developing posttraumatic stress symptoms following intimate partner violence. In rare cases, participants may experience adverse effects following completion of this study. Some of these effects may include symptoms of depression or anxiety. We urge you to contact any of the resources listed below if you experience any of these changes. You may also contact Dr. Petretic at (479) 575-4258 if you have any questions.

1. National Domestic Violence Hotline 1-800-799-7233 (TDD 1-800-787-3224)
2. National Sexual Assault Hotline 1-800-656-4673
3. Suicide Prevention Lifeline 1-800-273-8255 (TDD 1-800-799-4889)

American Psychological Association http://locator.apa.org/PsychologistLocator

This information is provided solely for your convenience. The University of Arkansas provides no endorsement or guarantee of the services provided by these facilities.

When you are completely finished with the survey and have received information on how to enter the drawing, we recommend that you close your browser and clear the browsing history to protect your privacy.

PLEASE DO NOT DISCUSS YOUR PARTICIPATION WITH OTHER PEOPLE WHO MIGHT PARTICIPATE IN THIS STUDY!

J. Appendix J

Scoring Syntax for All Measuring Instruments

*********Comment: Create sex variable where female = 2 to prepare for CDS t-score syntax

```
COMPUTE sex = 2 .
EXECUTE .
```

*********Comment: Conflict Tactics Scale (CTS) recode to ground at ZERO.

```
Recode cts1 to cts78 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7).
execute.
```

*********Comment: CTS recode per Straus conventions; this is where CTS 7 gets converted to 0.

```
Recode cts1 to cts78 (0=0) (1=1) (2=2) (3=4) (4=8) (5=15) (6=25) (7=0).
execute.
```

*********Comment: Calculate CTS perpetrator subscales.

```
compute ctsphyp = sum.12(cts7, cts9, cts17, cts21, cts27, cts33, cts37, cts43, cts45, cts53, cts61, cts73).
compute ctspsyp = sum.8(cts5, cts25, cts29, cts35, cts49, cts65, cts67, cts69).
compute ctssexp = sum.7(cts15, cts19, cts47, cts51, cts57, cts63, cts75).
compute ctsinjp = sum.6(cts11, cts23, cts31, cts41, cts55, cts71).
compute ctsnegp = sum.6(cts1, cts3, cts13, cts39, cts59, cts77).
execute.

Variable label ctsphyp 'CTS2 Physical Abuse Perp'.
Variable label ctspsyp 'CTS2 Psychological Abuse Perp'.
Variable label ctssexp 'CTS2 Sexual Abuse Perp'.
Variable label ctsinjp 'CTS2 Injury Perp'.
Variable label ctsnegp 'CTS2 Negotiation Perp'.
```

*********Comment: Calculate CTS victim subscales.

```
compute ctspsyv = sum.8(cts6, cts26, cts30, cts36, cts50, cts66, cts68, cts70).
compute ctsphyv = sum.12(cts8, cts10, cts18, cts22, cts28, cts34, cts38, cts44, cts46, cts54, cts62, cts74).
compute ctssexv = sum.7(cts16, cts20, cts48, cts52, cts58, cts64, cts76).
compute ctsinjv = sum.6(cts12, cts24, cts32, cts42, cts56, cts72).
compute ctsnegv = sum.6(cts2, cts4, cts14, cts40, cts60, cts78).
execute.
```

```
Variable label ctspsyv 'CTS2 Psychological Abuse Vic'.
Variable label ctsphyv 'CTS2 Physical Abuse Vic'.
Variable label ctssexv 'CTS2 Sexual Abuse Vic'.
Variable label ctsinjv 'CTS2 Injury Vic'.
Variable label ctsnegv 'CTS2 Negotiation Vic'.

*********Comment: Compute CTS sum score.

COMPUTE CTS_SUM = ctspsyv + ctsphyv + ctssexv .
VARIABLE LABELS CTS_SUM 'Sum of recoded CTS with full range' .
EXECUTE .

*********Comment: Recode CMIS; combination of categorical & dichotomous items; recode to ground at ZERO.

Recode cmis1 to cmis6 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5).
execute.
Recode cmis7 to cmis10 (2=0).
execute.
Recode cmis11 to cmis21 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5).
execute.
Recode cmis22 (2=0).
execute.
Recode cmis23 to cmis29 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5).
execute.
Recode cmis30 to cmis34 (2=0).
execute.
Recode cmis35 to cmis47 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5).
execute.
Recode cmis48 to cmis53 (2=0).
execute.

*********Comment: Recode CMIS to match CTS ranges per Straus conventions.

Recode cmis1 to cmis6 (0=0) (1=2) (2=4) (3=8) (4=15) (5=25).
execute.

Recode cmis11 to cmis21 (0=0) (1=2) (2=4) (3=8) (4=15) (5=25).
execute.

Recode cmis23 to cmis29 (0=0) (1=2) (2=4) (3=8) (4=15) (5=25).
execute.

Recode cmis35 to cmis47 (0=0) (1=2) (2=4) (3=8) (4=15) (5=25).
execute.
```

*********Comment: Scored CMIS to match CTS scoring as closely as possible.

Comment Calculate CMIS victim subscales.
compute cmiswitdv = sum.6(cmis1, cmis2, cmis3, cmis4, cmis5, cmis6).
compute cmispsyc = sum.11(cmis11, cmis12, cmis13, cmis14, cmis15, cmis16, cmis17, cmis18, cmis19, cmis20, cmis21).
compute cmisphys = sum.7(cmis23, cmis24, cmis25, cmis26, cmis27, cmis28, cmis29).
compute cmissex = sum.13(cmis35, cmis36, cmis37, cmis38, cmis39, cmis40, cmis41, cmis42, cmis43, cmis44, cmis45, cmis46, cmis47).
compute cmisinj = sum.4(cmis8, cmis30, cmis31, cmis48).
compute cmispolice = sum.3(cmis9, cmis32, cmis49).
compute cmisdhs = sum.3(cmis10, cmis33, cmis50).
compute cmissib = sum.3(cmis22, cmis34, cmis51).
execute.

Variable label cmiswitdv 'CMIS sum Witnessing Domestic Violence'.
Variable label cmispsyc 'CMIS sum Psychological Abuse'.
Variable label cmisphys 'CMIS sum Physical Abuse'.
Variable label cmissex 'CMIS sum Sexual Abuse'.
Variable label cmisinj 'CMIS sum Injury or Medical Care Sought'.
Variable label cmispolice 'CMIS sum Police Involvement'.
Variable label cmisdhs 'CMIS sum DHS Child Welfare Involvement'.
Variable label cmissib 'CMIS sum Witness Abuse of Sibling'.

*********Comment: Compute CMIS sum score.

COMPUTE CMIS_SUM = cmiswitdv + cmispsyc + cmisphys + cmissex .
VARIABLE LABELS CMIS_SUM 'Sum of recoded CMIS with full range' .
EXECUTE .

*********Comment: Compute Cognitive Distortion Scale (CDS).

Comment scrit subscale (self-criticism).
compute scrit = sum(cds1, cds6, cds11, cds16, cds21, cds26, cds31, cds36).
Comment sblame subscale (self-blame).
compute sblame = sum(cds2, cds7, cds12, cds17, cds22, cds27, cds32, cds37).
Comment help subscale (helplessness).
compute help = sum(cds3, cds8, cds13, cds18, cds23, cds28, cds33, cds38).
Comment hope subscale (hopelessness).
compute hope = sum(cds4, cds9, cds14, cds19, cds24, cds29, cds34, cds39).
Comment pwd subscale (preoccupation with danger).
compute pwd = sum(cds5, cds10, cds15, cds20, cds25, cds30, cds35, cds40).
exe.

*********Comment: convert scrit subscale rawscores to subscale tscores.

```
if(scrit=8 and sex=2) tscrit=43.
if(scrit=9 and sex=2) tscrit=45.
if(scrit=10 and sex=2) tscrit=47.
if(scrit=11 and sex=2) tscrit=49.
if(scrit=12 and sex=2) tscrit=50.
if(scrit=13 and sex=2) tscrit=52.
if(scrit=14 and sex=2) tscrit=54.
if(scrit=15 and sex=2) tscrit=56.
if(scrit=16 and sex=2) tscrit=58.
if(scrit=17 and sex=2) tscrit=60.
if(scrit=18 and sex=2) tscrit=61.
if(scrit=19 and sex=2) tscrit=63.
if(scrit=20 and sex=2) tscrit=65.
if(scrit=21 and sex=2) tscrit=67.
if(scrit=22 and sex=2) tscrit=69.
if(scrit=23 and sex=2) tscrit=71.
if(scrit=24 and sex=2) tscrit=72.
if(scrit=25 and sex=2) tscrit=74.
if(scrit=26 and sex=2) tscrit=76.
if(scrit=27 and sex=2) tscrit=78.
if(scrit=28 and sex=2) tscrit=80.
if(scrit=29 and sex=2) tscrit=82.
if(scrit=30 and sex=2) tscrit=83.
if(scrit=31 and sex=2) tscrit=85.
if(scrit=32 and sex=2) tscrit=87.
if(scrit=33 and sex=2) tscrit=89.
if(scrit=34 and sex=2) tscrit=91.
if(scrit=35 and sex=2) tscrit=93.
if(scrit=36 and sex=2) tscrit=94.
if(scrit=37 and sex=2) tscrit=96.
if(scrit=38 and sex=2) tscrit=98.
if(scrit=39 and sex=2) tscrit=100.
if(scrit=40 and sex=2) tscrit=100.
exe.

*********Comment: convert sblame subscale rawscores to subscale tscores.

if(sblame=8 and sex=2) tsblame=44.
if(sblame=9 and sex=2) tsblame=47.
if(sblame=10 and sex=2) tsblame=49.
if(sblame=11 and sex=2) tsblame=51.
if(sblame=12 and sex=2) tsblame=54.
if(sblame=13 and sex=2) tsblame=56.
if(sblame=14 and sex=2) tsblame=58.
if(sblame=15 and sex=2) tsblame=60.
if(sblame=16 and sex=2) tsblame=63.
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if(sblame=17 and sex=2) tsblame=65.
if(sblame=18 and sex=2) tsblame=67.
if(sblame=19 and sex=2) tsblame=70.
if(sblame=20 and sex=2) tsblame=72.
if(sblame=21 and sex=2) tsblame=74.
if(sblame=22 and sex=2) tsblame=77.
if(sblame=23 and sex=2) tsblame=79.
if(sblame=24 and sex=2) tsblame=81.
if(sblame=25 and sex=2) tsblame=84.
if(sblame=26 and sex=2) tsblame=86.
if(sblame=27 and sex=2) tsblame=88.
if(sblame=28 and sex=2) tsblame=91.
if(sblame=29 and sex=2) tsblame=93.
if(sblame=30 and sex=2) tsblame=95.
if(sblame=31 and sex=2) tsblame=98.
if(sblame=32 and sex=2) tsblame=100.
if(sblame=33 and sex=2) tsblame=100.
if(sblame=34 and sex=2) tsblame=100.
if(sblame=35 and sex=2) tsblame=100.
if(sblame=36 and sex=2) tsblame=100.
if(sblame=37 and sex=2) tsblame=100.
if(sblame=38 and sex=2) tsblame=100.
if(sblame=39 and sex=2) tsblame=100.
if(sblame=40 and sex=2) tsblame=100.
exe.

*********Comment: convert help subscale rawscores to subscale tscores.

if(help=8 and sex=2) thelp=45.
if(help=9 and sex=2) thelp=47.
if(help=10 and sex=2) thelp=49.
if(help=11 and sex=2) thelp=51.
if(help=12 and sex=2) thelp=53.
if(help=13 and sex=2) thelp=56.
if(help=14 and sex=2) thelp=58.
if(help=15 and sex=2) thelp=60.
if(help=16 and sex=2) thelp=62.
if(help=17 and sex=2) thelp=64.
if(help=18 and sex=2) thelp=66.
if(help=19 and sex=2) thelp=68.
if(help=20 and sex=2) thelp=70.
if(help=21 and sex=2) thelp=73.
if(help=22 and sex=2) thelp=75.
if(help=23 and sex=2) thelp=77.
if(help=24 and sex=2) thelp=79.
if(help=25 and sex=2) thelp=81.
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if(help=26 and sex=2) thelp=83.
if(help=27 and sex=2) thelp=85.
if(help=28 and sex=2) thelp=87.
if(help=29 and sex=2) thelp=90.
if(help=30 and sex=2) thelp=92.
if(help=31 and sex=2) thelp=94.
if(help=32 and sex=2) thelp=96.
if(help=33 and sex=2) thelp=98.
if(help=34 and sex=2) thelp=100.
if(help=35 and sex=2) thelp=100.
if(help=36 and sex=2) thelp=100.
if(help=37 and sex=2) thelp=100.
if(help=38 and sex=2) thelp=100.
if(help=39 and sex=2) thelp=100.
if(help=40 and sex=2) thelp=100.
exe.

*********Comment: convert hope subscale rawscores to subscale tscores.

if(hope=8 and sex=2) thope=44.
if(hope=9 and sex=2) thope=45.
if(hope=10 and sex=2) thope=47.
if(hope=11 and sex=2) thope=49.
if(hope=12 and sex=2) thope=51.
if(hope=13 and sex=2) thope=53.
if(hope=14 and sex=2) thope=55.
if(hope=15 and sex=2) thope=56.
if(hope=16 and sex=2) thope=58.
if(hope=17 and sex=2) thope=60.
if(hope=18 and sex=2) thope=62.
if(hope=19 and sex=2) thope=64.
if(hope=20 and sex=2) thope=66.
if(hope=21 and sex=2) thope=67.
if(hope=22 and sex=2) thope=69.
if(hope=23 and sex=2) thope=71.
if(hope=24 and sex=2) thope=73.
if(hope=25 and sex=2) thope=75.
if(hope=26 and sex=2) thope=77.
if(hope=27 and sex=2) thope=79.
if(hope=28 and sex=2) thope=80.
if(hope=29 and sex=2) thope=82.
if(hope=30 and sex=2) thope=84.
if(hope=31 and sex=2) thope=86.
if(hope=32 and sex=2) thope=88.
if(hope=33 and sex=2) thope=90.
if(hope=34 and sex=2) thope=91.
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if(hope=35 and sex=2) thope=93.
if(hope=36 and sex=2) thope=95.
if(hope=37 and sex=2) thope=97.
if(hope=38 and sex=2) thope=99.
if(hope=39 and sex=2) thope=100.
if(hope=40 and sex=2) thope=100.
exe.

**********Comment: convert pwd subscale rawscores to subscale tscores.

if(pwd=8 and sex=2) tpwd=41.
if(pwd=9 and sex=2) tpwd=44.
if(pwd=10 and sex=2) tpwd=46.
if(pwd=11 and sex=2) tpwd=48.
if(pwd=12 and sex=2) tpwd=51.
if(pwd=13 and sex=2) tpwd=53.
if(pwd=14 and sex=2) tpwd=55.
if(pwd=15 and sex=2) tpwd=58.
if(pwd=16 and sex=2) tpwd=60.
if(pwd=17 and sex=2) tpwd=63.
if(pwd=18 and sex=2) tpwd=65.
if(pwd=19 and sex=2) tpwd=67.
if(pwd=20 and sex=2) tpwd=70.
if(pwd=21 and sex=2) tpwd=72.
if(pwd=22 and sex=2) tpwd=74.
if(pwd=23 and sex=2) tpwd=77.
if(pwd=24 and sex=2) tpwd=79.
if(pwd=25 and sex=2) tpwd=81.
if(pwd=26 and sex=2) tpwd=84.
if(pwd=27 and sex=2) tpwd=86.
if(pwd=28 and sex=2) tpwd=88.
if(pwd=29 and sex=2) tpwd=91.
if(pwd=30 and sex=2) tpwd=93.
if(pwd=31 and sex=2) tpwd=95.
if(pwd=32 and sex=2) tpwd=98.
if(pwd=33 and sex=2) tpwd=100.
if(pwd=34 and sex=2) tpwd=100.
if(pwd=35 and sex=2) tpwd=100.
if(pwd=36 and sex=2) tpwd=100.
if(pwd=37 and sex=2) tpwd=100.
if(pwd=38 and sex=2) tpwd=100.
if(pwd=39 and sex=2) tpwd=100.
if(pwd=40 and sex=2) tpwd=100.
exe.

Variable label scrit 'CDS self-criticism sum'.
```

```
Variable label sblame 'CDS self-blame sum'.
Variable label help 'CDS helplessness sum'.
Variable label hope 'CDS hopelessness sum'.
Variable label pwd 'CDS preoccupation with danger sum'.

Variable label tscrit 'CDS self-criticism t-score'.
Variable label tsblame 'CDS self-blame t-score'.
Variable label thelp 'CDS helplessness t-score'.
Variable label thope 'CDS hopelessness t-score'.
Variable label tpwd 'CDS preoccupation with danger t-score'.

*********Comment: Compute CDS sum score.

COMPUTE CDS_Sum = tscrit + tsblame + thelp + thope + tpwd .
VARIABLE LABELS CDS_Sum 'Sum of t-scores for CDS' .
EXECUTE .

*********Comment: PTSD Checklist (PCL); Calculate PCL total score.

compute pcltot = sum.8(pcl1, pcl2, pcl3, pcl4, pcl5, pcl6, pcl7, pcl8, pcl9, pcl10, pcl11, pcl12,
pcl13, pcl14, pcl15, pcl16, pcl17).
execute.

Variable label pcltot 'PCL sum score - scoring method per authors'.

*********Comment: PTSD Checklist (PCL) recode to examine incidence with 35 cut point.

RECODE
  pcltot
  (0 thru 34=0)  (35 thru 85=1)  INTO  PCL_YN .
VARIABLE LABELS PCL_YN "PCL grouped by those meeting 35 cutpoint and those who
don't".
EXECUTE .

*********Comment: Recoding of TSI-2.

RECODE
  tsi1 tsi2 tsi3 tsi4 tsi5 tsi6 tsi7 tsi8 tsi9 tsi10 tsi11 tsi12 tsi13 tsi14 tsi15 tsi16 tsi17 tsi18 tsi19
tsi20 tsi21 tsi22
  tsi23 tsi24 tsi25 tsi26 tsi27 tsi28 tsi29 tsi30 tsi31 tsi32 tsi33 tsi34 tsi35 tsi36 tsi37 tsi38 tsi39
tsi40 tsi41 tsi42
  tsi43 tsi44 tsi45 tsi46 tsi47 tsi48 tsi49 tsi50 tsi51 tsi52 tsi53 tsi54 tsi55 tsi56 tsi57 tsi58 tsi59
tsi60 tsi61 tsi62
  tsi63 tsi64 tsi65 tsi66 tsi67 tsi68 tsi69 tsi70 tsi71 tsi72 tsi73 tsi74 tsi75 tsi76 tsi77 tsi78 tsi79
tsi80 tsi81 tsi82
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  tsi83 tsi84 tsi85 tsi86 tsi87 tsi88 tsi89 tsi90 tsi91 tsi92 tsi93 tsi94 tsi95 tsi96 tsi97 tsi98 tsi99
tsi100 tsi101 tsi102
  tsi103 tsi104 tsi105 tsi106 tsi107 tsi108 tsi109 tsi110 tsi111 tsi112 tsi113 tsi114 tsi115 tsi116
tsi117 tsi118 tsi119
  tsi120 tsi121 tsi122 tsi123 tsi124 tsi125 tsi126 tsi127 tsi128 tsi129 tsi130 tsi131 tsi132 tsi133
tsi134 tsi135 tsi136
  (1=0)  (2=1)  (3=2)  (4=3)  .
EXECUTE .

RECODE
  Demo_Age
  (18 thru 54=1)  (55 thru 90=2)  INTO  agegrp .
VARIABLE LABELS agegrp 'age grouping where 1 equals 18-54 years and 2 equals 55-90
years'.
EXECUTE .

*********Comment: Trauma Symptom Inventory-2 (TSI-2); Compute TSI-2 factors.

*********Comment: computing SELF factor (self-disturbance).

compute tsiSELF = sum(tsi2, tsi30, tsi58, tsi86, tsi114, tsi16, tsi44, tsi72, tsi100, tsi126, tsi11,
tsi39, tsi67, tsi95, tsi122, tsi25, tsi53, tsi81, tsi109, tsi134, tsi12, tsi40, tsi68, tsi96, tsi123, tsi26,
tsi54, tsi82, tsi110, tsi135).

*********Comment: computing TRAUMA factor (posttraumatic stress).

compute tsiTRAUMA = sum(tsi1, tsi29, tsi57, tsi85, tsi113, tsi15, tsi43, tsi71, tsi99, tsi125, tsi4,
tsi32, tsi60, tsi88, tsi116, tsi18, tsi46, tsi74, tsi102, tsi128, tsi5, tsi33, tsi61, tsi89, tsi117, tsi19,
tsi47, tsi75, tsi103, tsi129, tsi6, tsi34, tsi62, tsi90, tsi118, tsi20, tsi48, tsi76, tsi104, tsi130).

*********Comment: computing EXT factor (externalization).

compute tsiEXT = sum(tsi3, tsi31, tsi59, tsi87, tsi115, tsi17, tsi45, tsi73, tsi101, tsi127, tsi9,
tsi37, tsi65, tsi93, tsi120, tsi23, tsi51, tsi79, tsi107, tsi132, tsi10, tsi38, tsi66, tsi94, tsi121, tsi24,
tsi52, tsi80, tsi108, tsi133, tsi13, tsi41, tsi69, tsi97, tsi124, tsi27, tsi55, tsi83, tsi111, tsi136).

*********Comment: computing SOMA factor (somatization).

compute tsiSOMA = sum(tsi8, tsi36, tsi64, tsi92, tsi22, tsi50, tsi78, tsi106, tsi131, tsi119).
EXECUTE .

Variable label tsiSELF 'TSI-2 sum self-disturbance factor'.
Variable label tsiTRAUMA 'TSI-2 sum posttraumatic stress factor'.
Variable label tsiEXT 'TSI-2 sum externalization factor'.
Variable label tsiSOMA 'TSI-2 sum somatization factor'.
```

**********Comment: computing Trauma Symptom Inventory factor tscores by age with 1 equals 18-54 years and 2 equals 55-90 years.

```
DO IF (agegrp = 1) .
RECODE
  tsiSELF
  (0 thru 1=35)  (2 thru 3=36)  (4 thru 5=37)  (6 thru 7=38)  (8 thru 9=39)  (10 thru 12=40)  (13
thru 14=41)  (15 thru
  16=42)  (17 thru 18=43)  (19 thru 20=44)  (21 thru 22=45)  (23 thru 24=46)  (25 thru 26=47)
(27 thru 28=48)  (29 thru
  30=49)  (31 thru 32=50)  (33 thru 34=51)  (35 thru 36=52)  (37 thru 38=53)  (39 thru 40=54)
(41 thru 42=55)  (43 thru
  44=56)  (45 thru 47=57)  (48 thru 49=58)  (50 thru 51=59)  (52 thru 53=60)  (54 thru 55=61)
(56 thru 57=62)  (58 thru
  59=63)  (60 thru 61=64)  (62 thru 63=65)  (64 thru 65=66)  (66 thru 67=67)  (68 thru 69=68)
(70 thru 71=69)  (72 thru
  73=70)  (74 thru 75=71)  (76 thru 77=72)  (78 thru 79=73)  (80 thru 82=74)  (83 thru 84=75)
(85 thru 86=76)  (87 thru
  88=77)  (89 thru 90=78)  INTO  tSELF1 .
END IF .
VARIABLE LABELS tSELF1 't-score of TSI-2 self-disturbance factor for ages 18-54 years'.
EXECUTE .

DO IF (agegrp = 2) .
RECODE
  tsiSELF
  (0 thru 1=37)  (2 thru 3=38)  (4=39)  (5 thru 6=40)  (7=41)  (8 thru 9=42)  (10=43)  (11 thru
  12=44)  (13=45)  (14 thru 15=46)  (16 thru 17=47)  (18=48)  (19 thru 20=49)  (21=50)  (22 thru
  23=51)  (24=52)  (25 thru 26=53)  (27=54)  (28 thru 29=55)  (30=56)  (31 thru 32=57)  (33 thru
  34=58)  (35=59)  (36 thru 37=60)  (38=61)  (39 thru 40=62)  (41=63)  (42 thru 43=64)  (44=65)
(45 thru 46=66)  (47=67)  (48 thru 49=68)  (50 thru 51=69)  (52=70)  (53 thru 54=71)  (55=72)
(56 thru 57=73)  (58=74)  (59 thru 60=75)  (61=76)  (62 thru 63=77)  (64=78)  (65 thru 66=79)
(67 thru 68=80)  (69=81)  (70 thru 71=82)  (72=83)  (73 thru 74=84)  (75=85)  (76 thru 77=86)
(78=87)  (79 thru 80=88)  (81 thru 82=89)  (83=90)  (84 thru 85=91)  (86=92)  (87 thru 88=93)
(89=94)  (90=95)
INTO  tSELF2 .
END IF .
VARIABLE LABELS tSELF2 't-score of TSI-2 self-disturbance factor for ages 55-90 years'.
EXECUTE .

DO IF (agegrp = 1) .
RECODE
  tsiTRAUMA
  (0 thru 1=36)  (2 thru 4=37)  (5 thru 6=38)  (7 thru 9=39)  (10 thru 11=40)  (12 thru 13=41)  (14
thru 16=42)  (17 thru 18=43)  (19 thru 21=44)  (22 thru 23=45)  (24 thru 25=46)  (26 thru 28=47)
(29 thru 30=48)  (31 thru 33=49)  (33 thru 35=50)  (36 thru 37=51)  (38 thru 40=52)  (41 thru
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42=53)  (43 thru 45=54)  (46 thru 47=55)  (48 thru 50=56)  (51 thru 52=57)  (53 thru 54=58)  (55
thru 57=59)  (58 thru 59=60)  (60 thru 62=61)  (63 thru 64=62)  (65 thru 66=63)  (67 thru 69=64)
(70 thru 71=65)  (72 thru 74=66)  (75 thru 76=67)  (77 thru 78=68)  (79 thru 81=69)  (82 thru
83=70)  (84 thru 86=71)  (87 thru 88=72)  (89 thru 90=73)  (91 thru 93=74)  (94 thru 95=75)  (96
thru 98=76)  (99 thru 100=77)  (101 thru 103=78)  (104 thru 105=79)  (106 thru 107=80)  (108
thru 110=81)  (111 thru 112=82)  (113 thru 115=83)  (116 thru 117=84)  (118 thru 119=85)
(120=86)
INTO  tTRAUMA1 .
END IF.
VARIABLE LABELS tTRAUMA1 't-score of TSI-2 posttraumatic stress factor for ages 18-54
years'.
EXECUTE.

DO IF (agegrp = 2) .
RECODE
  tsiTRAUMA
  (0=35)  (1 thru 2=36)  (3 thru 4=37)  (5 thru 6=38)  (7 thru 8=39)  (9=40)  (10 thru 11=41)  (12
thru 13=42)  (14 thru 15=43)  (16 thru 17=44)  (18=45)  (19 thru 20=46)  (21 thru 22=47)  (23
thru 24=48)  (25 thru 26=49)  (27=50)  (28 thru 29=51)  (30 thru 31=52)  (32 thru 33=53)  (34
thru 35=54)  (36=55)  (37 thru 38=56)  (39 thru 40=57)  (41 thru 42=58)  (43 thru 44=59)
(45=60)  (46 thru 47=61)  (48 thru 49=62)  (50 thru 51=63)  (52 thru 53=64)  (54=65)  (55 thru
56=66)  (57 thru 58=67)  (59 thru 60=68)  (61 thru 62=69)  (63=70)  (64 thru 65=71)  (66 thru
67=72)  (68 thru 69=73)  (70 thru 71=74)  (72=75)  (73 thru 74=76)  (75 thru 76=77)  (77 thru
78=78)  (79 thru 80=79)  (81=80)  (82 thru 83=81)  (84 thru 85=82)  (86 thru 87=83)  (88 thru
89=84)  (90=85)  (91 thru 92=86)  (93 thru 94=87)  (95 thru 96=88)  (97 thru 98=89)  (99=90)
(100 thru 101=91)  (102 thru 103=92)  (104 thru 105=93)  (106 thru 107=94)  (108=95)  (109
thru 110=96)  (111 thru 112=97)  (113 thru 114=98)  (115 thru 116=99)  (117 thru 120=100)
INTO  tTRAUMA2 .
END IF.
VARIABLE LABELS tTRAUMA2 't-score of TSI-2 posttraumatic stress factor for ages 55-90
years'.
EXECUTE.

DO IF (agegrp = 1) .
RECODE
  tsiEXT
  (0=39)  (1 thru 2=40)  (3 thru 4=41)  (5 thru 6=42)  (7 thru 8=43)  (9 thru 10=44)  (11 thru
12=45)  (13=46)  (14 thru 15=47)  (16 thru 17=48)  (18 thru 19=49)  (20 thru 21=50)  (22 thru
23=51)  (24 thru 25=52)  (26=53)  (27 thru 28=54)  (29 thru 30=55)  (31 thru 32=56)  (33 thru
34=57)  (35 thru 36=58)  (37 thru 38=59)  (39=60)  (40 thru 41=61)  (42 thru 43=62)  (44 thru
45=63)  (46 thru 47=64)  (48 thru 49=65)  (50=66)  (51 thru 52=67)  (53 thru 54=68)  (55 thru
56=69)  (57 thru 58=70)  (59 thru 60=71)  (61 thru 62=72)  (63=73)  (64 thru 65=74)  (66 thru
67=75)  (68 thru 69=76)  (70 thru 71=77)  (72 thru 73=78)  (74 thru 75=79)  (76=80)  (77 thru
78=81)  (79 thru 80=82)  (81 thru 82=83)  (83 thru 84=84)  (85 thru 86=85)  (87=86)  (88 thru
89=87)  (90 thru 91=88)  (92 thru 93=89)  (94 thru 95=90)  (96 thru 97=91)  (98 thru 99=92)
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(100=93)  (101 thru 102=94)  (103 thru 104=95)  (105 thru 106=96)  (107 thru 108=97)  (109
thru 110=98)  (111 thru 112=99)  (113 thru 120=100)
INTO  tEXT1 .
END IF.
VARIABLE LABELS tEXT1 't-score of TSI-2 externalization factor for ages 18-54 years'.
EXECUTE.

DO IF (agegrp = 2) .
RECODE
  tsiEXT
  (0=39)  (1=40)  (2=42)  (3=43)  (4=44)  (5=45)  (6=46)  (7=47)  (8=48)  (9=49)  (10=50)
(11=51)  (12=52)  (13=53)  (14=54)  (15=56)  (16=57)  (17=58)  (18=59)  (19=60)  (20=61)
(21=62)  (22=63)  (23=64)  (24=65)  (25=66)  (26=67)  (27=68)  (28=69)  (29=71)  (30=72)
(31=73)  (32=74)  (33=75)  (34=76)  (35=77)  (36=78)  (37=79)  (38=80)  (39=81)  (40=82)
(41=83)  (42=84)  (43=86)  (44=87)  (45=88)  (46=89)  (47=90)  (48=91)  (49=92)  (50=93)
(51=94)  (52=95)  (53=96)  (54=97)  (55=98)  (56 thru 120=100)
INTO  tEXT2 .
END IF.
VARIABLE LABELS tEXT2 't-score of TSI-2 externalization factor for ages 55-90 years'.
EXECUTE.

DO IF (agegrp = 1) .
RECODE
  tsiSOMA
  (0=32)  (1=34)  (2=36)  (3=38)  (4=40)  (5=41)  (6=43)  (7=45)  (8=47)  (9=49)  (10=51)
(11=52)  (12=54)  (13=56)  (14=58)  (15=60)  (16=61)  (17=63)  (18=65)  (19=67)  (20=69)
(21=71)  (22=72)  (23=74)  (24=76)  (25=78)  (26=80)  (27=82)  (28=83)  (29=85)  (30=87)
INTO  tSOMA1 .
END IF.
VARIABLE LABELS tSOMA1 't-score of TSI-2 somatization factor for ages 18-54 years'.
EXECUTE.

DO IF (agegrp = 2) .
RECODE
  tsiSOMA
  (0=32)  (1=34)  (2=36)  (3=37)  (4=39)  (5=41)  (6=42)  (7=44)  (8=46)  (9=47)  (10=49)
(11=51)  (12=52)  (13=54)  (14=56)  (15=57)  (16=59)  (17=61)  (18=62)  (19=64)  (20=66)
(21=67)  (22=69)  (23=71)  (24=72)  (25=74)  (26=76)  (27=77)  (28=79)  (29=81)  (30=83)
INTO  tSOMA2 .
END IF.
VARIABLE LABELS tSOMA2 't-score of TSI-2 somatization factor for ages 55-90 years'.
EXECUTE.

*********Comment: combining 2 age groups into 1 for final TSI-2 t-scores

RECODE
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```
  tSELF1 tSELF2 tTRAUMA1 tTRAUMA2 tEXT1 tEXT2 tSOMA1 tSOMA2  (MISSING=0)  .
EXECUTE .

COMPUTE tSELFtsi = tSELF1 + tSELF2 .
EXECUTE .

COMPUTE tTRAUMAtsi = tTRAUMA1 + tTRAUMA2 .
EXECUTE .

COMPUTE tEXTtsi = tEXT1 + tEXT2 .
EXECUTE .

COMPUTE tSOMAtsi = tSOMA1 + tSOMA2 .
EXECUTE .

Variable label tSELFtsi 'TSI-2 final self-disturbance t-score with age groups combined'.
Variable label tTRAUMAtsi 'TSI-2 final posttraumatic stress t-score with age groups combined'.
Variable label tEXTtsi 'TSI-2 final externalization t-score with age groups combined'.
Variable label tSOMAtsi 'TSI-2 final somatization t-score with age groups combined'.

*********Comment: summing TSI t-scores to have a final TSI collective score for dependent
HMR variable

COMPUTE TSItscoreSUM = tSELFtsi+tTRAUMAtsi+tEXTtsi+tSOMAtsi .
EXECUTE .


********Comment: Post-hoc analyses of sample composition by abuse endorsement; original
raw dataset used to circumvent Straus scoring conventions.

*********Comment: Conflict Tactics Scale (CTS) RAW score recoding (NOT using Straus
conventions).

Recode cts1 to cts78 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7).
execute.

Recode cts1 to cts78 (0=0) (1=1) (2=2) (3=3) (4=4) (5=5) (6=6) (7=0).
execute.

*********Comment: Calculate CTS victim subscales with RAW scores (NOT using Straus
conventions).

compute ctspsyvRAW = sum.8(cts6, cts26, cts30, cts36, cts50, cts66, cts68, cts70).
compute ctsphyvRAW = sum.12(cts8, cts10, cts18, cts22, cts28, cts34, cts38, cts44, cts46, cts54,
cts62, cts74).
compute ctssexvRAW = sum.7(cts16, cts20, cts48, cts52, cts58, cts64, cts76).
```

```
compute ctsinjvRAW = sum.6(cts12, cts24, cts32, cts42, cts56, cts72).
compute ctsnegvRAW = sum.6(cts2, cts4, cts14, cts40, cts60, cts78).
execute.

Variable label ctspsyvRAW 'CTS2 RAW Psychological Abuse Vic'.
Variable label ctsphyvRAW 'CTS2 RAW Physical Abuse Vic'.
Variable label ctssexvRAW 'CTS2 RAW Sexual Abuse Vic'.
Variable label ctsinjvRAW 'CTS2 RAW Injury Vic'.
Variable label ctsnegvRAW 'CTS2 RAW Negotiation Vic'.

**********Comment: CMIS-SF RAW score recoding (NOT using Straus conventions).

Recode CMIS.
Recode cmis1 to cmis6 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5).
execute.
Recode cmis7 to cmis10 (2=0).
execute.
Recode cmis11 to cmis21 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5).
execute.
Recode cmis22 (2=0).
execute.
Recode cmis23 to cmis29 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5).
execute.
Recode cmis30 to cmis34 (2=0).
execute.
Recode cmis35 to cmis47 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5).
execute.
Recode cmis48 to cmis53 (2=0).
execute.

**********Comment: Calculate CMIS victim subscales with RAW scores (NOT using Straus
conventions).

compute cmiswitdvRAW = sum.6(cmis1, cmis2, cmis3, cmis4, cmis5, cmis6).
compute cmispsycRAW = sum.11(cmis11, cmis12, cmis13, cmis14, cmis15, cmis16, cmis17,
cmis18, cmis19, cmis20, cmis21).
compute cmisphysRAW = sum.7(cmis23, cmis24, cmis25, cmis26, cmis27, cmis28, cmis29).
compute cmissexRAW = sum.13(cmis35, cmis36, cmis37, cmis38, cmis39, cmis40, cmis41,
cmis42, cmis43, cmis44, cmis45, cmis46, cmis47).
compute cmisinjRAW = sum.4(cmis8, cmis30, cmis31, cmis48).
compute cmispoliceRAW = sum.3(cmis9, cmis32, cmis49).
compute cmisdhsRAW = sum.3(cmis10, cmis33, cmis50).
compute cmissibRAW = sum.3(cmis22, cmis34, cmis51).
execute.

Variable label cmiswitdvRAW 'CMIS RAW sum Witnessing Domestic Violence'.
```

Variable label cmispsycRAW 'CMIS RAW sum Psychological Abuse'.
Variable label cmisphysRAW 'CMIS RAW sum Physical Abuse'.
Variable label cmissexRAW 'CMIS RAW sum Sexual Abuse'.
Variable label cmisinjRAW 'CMIS RAW sum Injury or Medical Care Sought'.
Variable label cmispoliceRAW 'CMIS RAW sum Police Involvement'.
Variable label cmisdhsRAW 'CMIS RAW sum DHS Child Welfare Involvement'.
Variable label cmissibRAW 'CMIS RAW sum Witness Abuse of Sibling'.

K. Appendix K

Demographic Characteristics of the Female Community Sample (*N* = 244)

Characteristic	*M*	*Min*	*Max*	*SD*
Age (in years)	37.62	18	72	13.17
Length of Current Relationship (in years)	7.46	0	47	10.13

Note: Not all participants were currently in a relationship, as highlighted in the next table. In this table, length of relationship in years is referent to a subgroup of the sample that are currently in a relationship.

Relationship Status	*N*	Percentage
Married	114	46.7
Single/Never married	61	25.0
Divorced	28	11.5
Member of unmarried couple	25	10.2
Widowed	8	3.3
Separated	5	2.0
Other	3	1.2

Ethnicity	*N*	Percentage
White/Caucasian	191	78.3
Asian/Asian American	21	8.6
Hispanic/Latina	12	4.9
Black/African American	10	4.1
Other	10	4.1

Sexual Orientation	*N*	Percentage
Heterosexual	221	90.6
Bisexual	10	4.1
Homosexual	9	3.7
Other	4	1.6

Total Number of People Living in Home	*N*	Percentage
1	36	14.8
2	75	30.7
3	53	21.3
4	42	17.2
5	18	7.4
6	12	4.9
7	2	0.8
8	2	0.8

Highest Educational Attainment	*N*	Percentage
Grades 1-8 (grade school)	4	1.6
Grades 9-11 (some high school)	4	1.6
Grade 12 or GED (high school equivalent)	19	7.8
Some college or technical school (incomplete)	47	19.3
Technical degree or certification	15	6.1
2 year degree	23	9.4
4 year degree	65	26.6
Master's degree (or equivalent)	49	20.1
Post-Graduate or Professional School (PhD, MD, or equivalent)	18	7.4

Employment	*N*	Percentage
Employed full-time	131	53.7
Student	77	31.6
Employed part-time	40	16.4
Homemaker	20	8.2
Unable to work	12	4.9
Out of work for > a year	9	3.7
Out of work for < a year	9	3.7
Retired	6	2.5

Note: Participants were permitted to select more than one category, so responses are not equal to 100%.

Annual Income from All Sources	*N*	Percentage
Less than $10,000	35	14.3
$10,000 - $14,999	16	6.6
$15,000 - $19,999	13	5.3
$20,000 - $24,999	15	6.1
$25,000 - $34,999	29	11.9
$35,000 - $49,999	40	16.4
$50,000 - $74,999	32	13.1
$75,000 or more	64	26.2

Geographic Location	*N*	Percentage
Alabama	3	1.2
Alaska	0	0
Arizona	4	1.6
Arkansas	110	45.1
California	13	5.3
Colorado	0	0

Geographic Location	*N*	Percentage
Connecticut	0	0
Delaware	0	0
District of Columbia	1	0.4
Florida	5	2.0
Georgia	1	0.4
Hawaii	0	0
Idaho	1	0.4
Illinois	4	1.6
Indiana	2	0.8
Iowa	0	0
Kansas	0	0
Kentucky	4	1.6
Louisiana	1	0.4
Maine	0	0
Maryland	0	0
Massachusetts	3	1.2
Michigan	2	0.8
Minnesota	0	0
Mississippi	1	0.4
Missouri	3	1.2
Montana	1	0.4
Nebraska	3	1.2
Nevada	2	0.8
New Hampshire	0	0
New Jersey	2	0.8
New Mexico	2	0.8
New York	11	4.5
North Carolina	4	1.6
North Dakota	0	0
Ohio	3	1.2
Oklahoma	0	0
Oregon	3	1.2
Pennsylvania	6	2.5
Rhode Island	0	0
South Carolina	1	0.4
South Dakota	0	0
Tennessee	0	0
Texas	3	1.2
Utah	7	2.9
Vermont	0	0
Virginia	3	1.2
Washington	3	1.2
West Virginia	1	0.4
Wisconsin	0	0
Wyoming	0	0

Geographic Location	*N*	Percentage
Other	30	12.3

Note: Of participants that responded "other," 15 wrote in their location. These write-ins are summarized here: Singapore = 3, UK = 3, Canada = 2, England = 2, Argentina = 1, Australia = 1, Germany = 1, Norway = 1, Spain = 1.

L. Appendix L

IRB Approval Notice

Office of Research Compliance
Institutional Review Board

February 21, 2013

MEMORANDUM

TO:	Joye Henrie Marie Karlsson Patricia Petretic
FROM:	Ro Windwalker IRB Coordinator
RE:	New Protocol Approval
IRB Protocol #:	13-02-481
Protocol Title:	*Posttraumatic Symptoms following Traumatic Events*
Review Type:	☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB
Approved Project Period:	Start Date: 02/21/2013 Expiration Date: 02/20/2014

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (http://vpred.uark.edu/210.php). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 200 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.